

Next Step: An Online Community for Delivering Human Services

Cécile Paris and Surya Nepal

Abstract With the expansion of the Internet, the number of online support groups has grown rapidly, and they have become a serious alternative to face-to-face meetings. Online support groups or communities allow their members to connect and share with others and get the support they need. In our work, in collaboration with a Government Department, we wanted to investigate whether these benefits could also occur in the public administration domain, in particular to support people in receipt of welfare payments. We designed and deployed an online community to support a specific group of welfare recipients. Our intent was to provide them with both informational and emotional support. In this paper, we present the design of the community, with a specific focus on the support it provided its members, together with a qualitative analysis of what happened during our trial. We observed that people found the targeted information and the emotional support they received in the online community useful and that they welcomed it. We also found that the community provided a way for participants to feel heard by the government.

Keywords Social networks · Online community · Human services · Gamification · Content analysis

1 Introduction

Social media has become a crucial way in which people engage with each other, with businesses and governments. According to a 2015 Sensis report, close to 50 % of consumers access social media every day, and even more for young

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people (18–29 age group) [1]; 93 % of internet users have a Facebook account. Government agencies have started to recognise the power of social media and to make use of it to disseminate information, listen to citizens and engage with the public (e.g. [2–4]; Chaps. 2 and 10 in this book).

In this chapter, we report on our investigation on the use of online communities by governments to provide support to specific groups of citizens. Such online communities are now common in a number of domains: e.g., health (see, for example, patientslikeme,¹ or Daily Strength²), parenting, e.g., Community baby centre,³ or sports.⁴ These communities typically provide information deemed relevant to their members. Equally important, by enabling people to meet others with similar circumstances, they offer social and moral support to their members, which in turn leads to positive outcomes [5–7]. For example, [7] found that an online support forum on smoking cessation had a significant positive impact for its participants.

To our knowledge, there has not been any research on the use of online communities by government to support specific group of citizens. Governments have recognised the potential of the social web, and they have begun to actively increase their online presence, both to disseminate information and to engage citizens (e.g., [4]). Politicians and public servants now use Twitter and Facebook extensively to keep the public informed (e.g., tweetMP to follow Australian Members of Parliament on Twitter, the Facebook page of the Bedfordshire Police in the UK, the Facebook pages⁵ of Centrelink in Australia, etc.). They also use social media for campaigning purposes, e.g., [8–12]).

Many governments (at all levels: local, state or national) capitalise on social media to engage citizens. For example, Public Sphere⁶ was a platform to involve people in public policy development; the city of Wellington (New Zealand) introduced E-petitions to improve citizen participation [13]. In these initiatives, citizens are encouraged to contribute to the design of government policies and have a voice.

In other initiatives, the government is crowdsourcing information. For example, the Victorian State Road Authority uses social media to obtain information about road hazards. In our work, we are exploring the use of social media not as a way to engage citizens in policy making, but to support specific groups of citizens through the creation and mediation of online communities.

¹www.patientslikeme.com/.

²www.dailystrength.org/support-groups.

³www.babycenter.com.au/community.

⁴<http://www.athletenetwork.com/>.

⁵For example, the page for students, accessed May 7th, 2013. [https://www.facebook.com/Student Update](https://www.facebook.com/StudentUpdate).

⁶While the original site www.katelundy.com.au/category/campaigns/publicsphere/ is no longer available, a full archive of the original website from when Kate Lundy was Senator for the ACT has been retained by The National Library of Australia through Pandora and is accessible at: pandora.nla.gov.au/pan/38983/20140908-1403/www.katelundy.com.au/index.html—Accessed September 19th, 2015.

Online communities (and social networks in general) have been shown to have the potential to provide social and emotional peer-support—e.g., [14–18]. For some groups of citizens, such support would be important. Some researchers have looked into the use of new media to empower disadvantaged groups of citizens, e.g., [19], but these initiatives were organised by Non-Government Organisations, not governments. To the best of our knowledge, none of the previous work has looked at providing emotional and information support to disadvantaged citizens through a government-run online community. This is what our research addresses.

Together with the Australian Government Department of Human Services (herein after referred to as Human Services), we trialled an online community for a specific group of welfare recipients, to provide them with informational and emotional support. The specific cohort we worked with were transitioning from one type of welfare payment to another, as a result of new legislation introduced to encourage welfare recipients to increase their amount of paid employment. The new payment type resulted in less income and came with a requirement to look for a job. Understandably, the transition was a difficult one for many people, causing them a large amount of stress. Our trial aimed to see if an online community, with the support it can bring its members, could be useful to ease the transition process. This chapter reports on the design, implementation, deployment and analysis results of this community.

The chapter is structured as follows. Section 2 provides some background on our research project. Section 3 describes the design and implementation of the online community we developed, while Sect. 4 describes the result of our analysis of the interactions in the community. We provide a discussion and some perspectives on the work in Sect. 5, and, finally, we conclude in Sect. 6.

2 Background

In many countries, including Australia, governments play a social role. Welfare systems provide a safety net for disadvantaged citizens, such as parents with low or no income, the disabled and the elderly, ensuring they have a minimum standard of living. Recent past has seen some of the systems change, with increasing restrictions on the financial assistance provided, or the assistance provided in exchange for work. Examples of such changes include TANF legislation in the US⁷ introduced in 1996 or the Work for the Dole Legislation introduced in 1997 in Australia.⁸

Early studies on the impact of these reforms have found that the new requirements (and transitioning to them) could be very difficult and stressful for some, and thus people need help—e.g., [20–22]. A lot of research has looked at the role

⁷TANF: Temporary Assistance for Needy Families: <http://www.tanf.us/> (retrieved September 15th, 2015).

⁸Work for the Dole (Legislation introduced to Parliament 1997) <https://employment.gov.au/work-dole> (retrieved September 15th, 2015).

of social support in handling stress (e.g., [23–26]). We hypothesised that social and emotional support, provided through a social network, could therefore be beneficial. This was supported by the results of a requirements gathering activity performed through focus groups and a questionnaire [27–29].

We thus set out to design, develop and deploy an online community in collaboration with Human Services to help deliver this support to a specific group of welfare recipients in a transition phase. These citizens were required as a result of a new legislation to move from a parental payment to a new payment type, Newstart, typically paid at a lower rate than the parental payment and with the requirement to find a job. Our aim was to provide a community which would bring people in similar circumstances together, so that they could share experiences, information, tips, etc., thus providing social, emotional and moral support to each other. The community would also enable the government to target its information and services to this specific cohort. Finally, the online community was intended to provide a platform for its members to go on a reflection journey, through a set of weekly activities, in order to better prepare them for the transition and their return to work [30].

Our design was based on the results of our requirements gathering activity [27–29] and many discussions with relevant staff at Human Services. The community, *Next Step*, was launched in March 2012 and lasted one year. Our participants were invited directly by Human Services, using a double blind process, as follows. We provided a set of tokens to Human Services, who, in turn, invited parents from their customer data base and gave them a unique token. Parents used their token to register in the community and choose a screen name and a password. They could also set a security question to retrieve their forgotten password.

With this process, Human Services knew who had which token, but did not know who had actually used their token to register and what their screen name was. In contrast, we knew which screen name corresponded to which token, but had no information about the real identity of the participants. The letter of invitation made it clear that this was an experiment with a fixed duration, and that we (the authors) were present as researchers who would be collecting and analysing data during the trial. This process was put in place to address ethical issues, which are particularly important when the research involves Government and citizens who receive payments from the Government [31].

Once the registration was completed, a user became a member of the community and could log in the community portal at any time with their screen name and password.

3 *Next Step* Design and Implementation

Next Step was designed as a portal with a set of pages, and it included both individual and community spaces. Its main components and features, and how they appear on the community home page, are shown in Fig. 1.

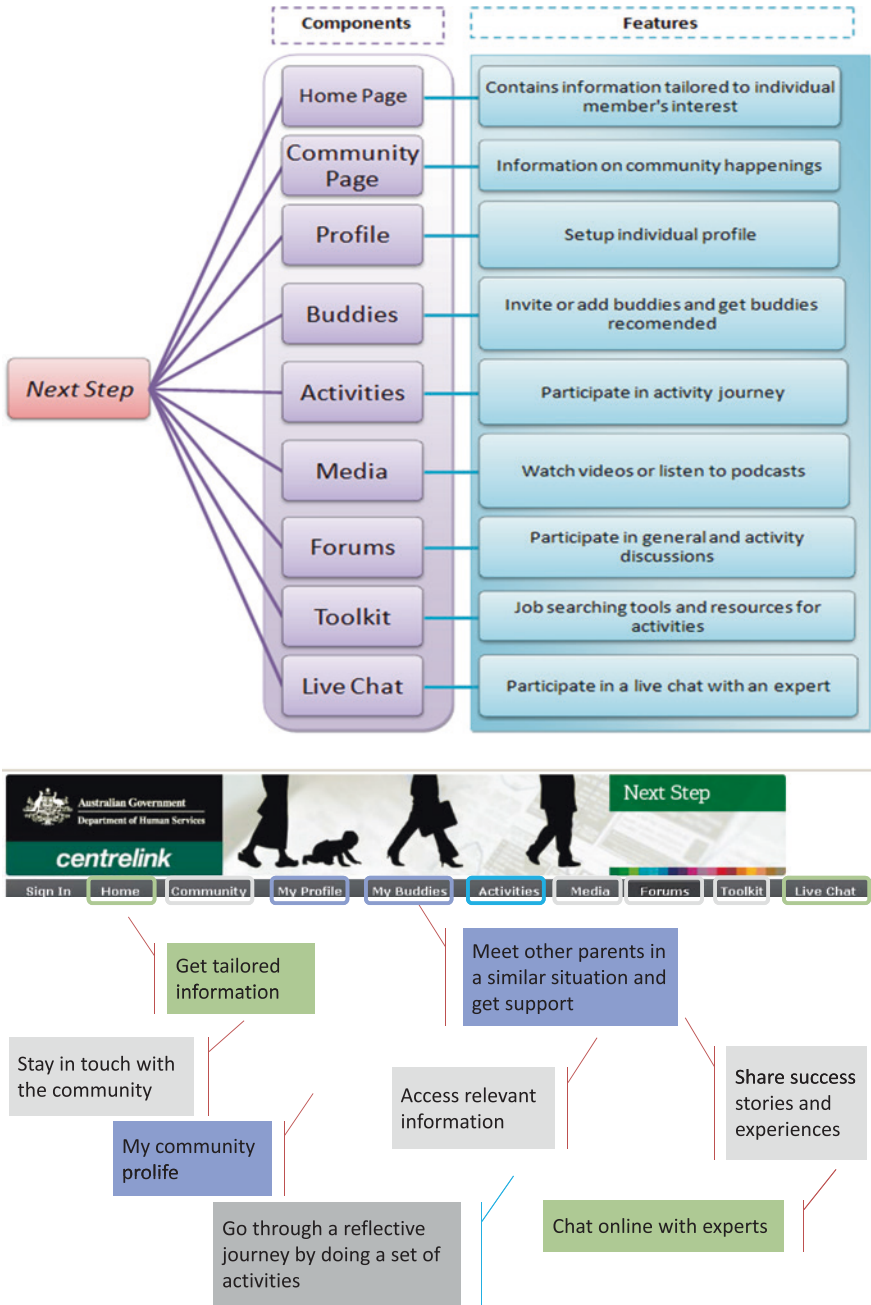


Fig. 1 Next Step components and features

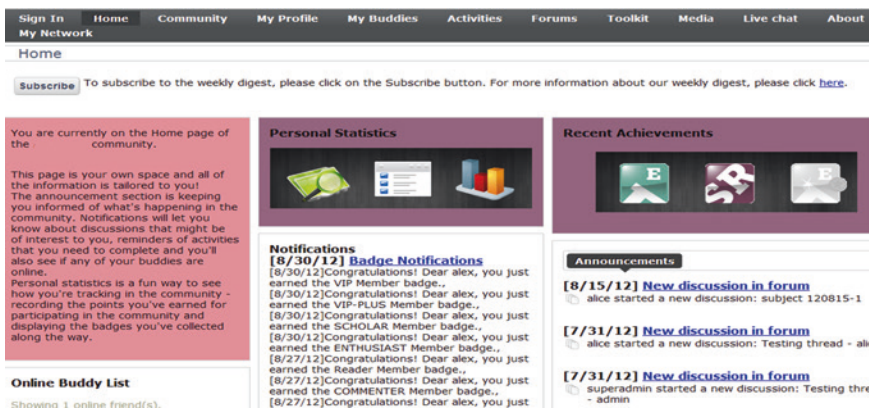


Fig. 2 Next Step HomePage (landing page) for community members

Figure 2 shows a user’s home page. A navigation ribbon at the top of the page enabled users to move from one feature of the community to another (e.g., profile, forum, activities, etc.). The homepage itself contained information about the community (e.g., community events or statistics about what was happening in the community) and personalised information (such as announcements relevant to the user, his or her personal statistics, etc.). Members could subscribe to a “weekly digest” which contained information about the major events happening in the following week (e.g., Live Chats). An “About page” provided explanations about the community: what it was about, whom to contact for queries, concerns and help. It also provided a form for users to give feedback to the community providers.

We now briefly explain some of the main elements of *Next Step*, starting with the elements that were explicitly featured in the navigation ribbon, followed by mechanisms we introduced to encourage engagement in the community.

3.1 The Community Page

The community page is displayed in Fig. 3. It provides various statistics about the community, e.g., which discussion thread had the most readers, who had the most ratings. It also informed members when new resources were available, when Live Chats sessions with experts were scheduled, etc. To foster a sense of community, we encouraged people to introduced themselves publicly (see the “Meet me” box on the left of Fig. 3). At the beginning of the community, we used this feature to introduce ourselves (both the CSIRO staff and the Human Services moderators) and start a trust relationship with the members. We encouraged new comers to the community to fill in such a “meet me” template, and sometimes invited specific members based on their interactions in the community. Figure 4 shows a profile



Fig. 3 The community page

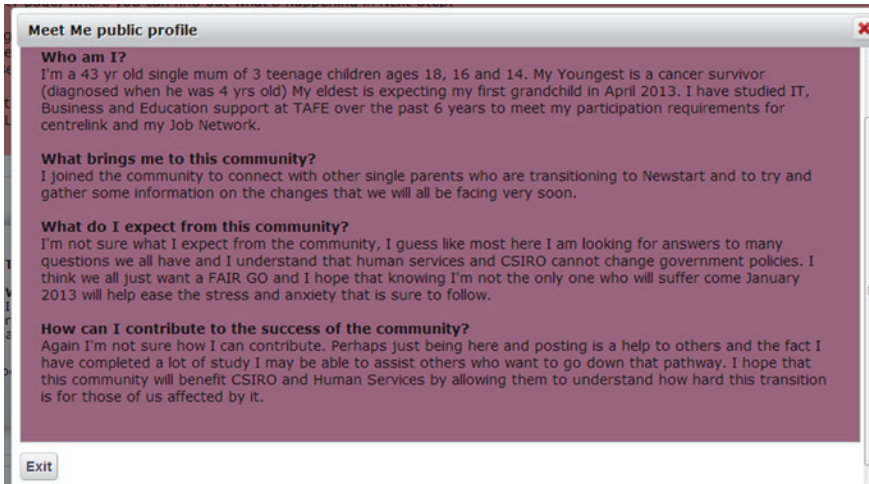


Fig. 4 A meet me profile from a community member

filled in by a community member. We note that it indicates the desire to connect with others in this situation, get social, emotional and informational support, and share one’s own knowledge with others to support them.

3.2 *Individual Profiles*

As with other communities, members had individual profiles, which members were meant to fill in upon joining the community, using the “My Profile” tab in the navigation ribbon. This was in fact done as the first activity in our activity journey. This profile included information that was used for recommendations. It was structured in three parts:

1. Socio-economic information, where members provided information about themselves and their family, including their level of education, source of income, housing and transport arrangements. This information was never made visible to the rest of the community.
2. A self-assessment of their personal qualities (e.g., dependable, honest, caring) and skills (e.g., numeracy, people, communication skills). By default, this information was private, but members could choose to make it public to others in the community.
3. Preferences about the person(s) with whom they would like to buddy (see below). People could choose from a number of criteria, with a mix of demographic information (e.g., someone close to me), personal qualities (e.g., honest, confident, enthusiastic) and skills (e.g., someone good at communication), and give a weight to each of them from 0 (not important at all) to 5 (very important).

Members were free to complete as much of the profile as they wished.

3.3 *A Buddy Programme*

One of the aims of the *Next Step* community was to provide emotional and social support to its members. We hypothesised that one way this would happen was for participants to find a “buddy”, someone who could support them through the journey, in a more personal way than the community as a whole. As participants were strangers to each other, the buddy programme aimed to help find such a buddy, by recommending community members to each other. This followed the social matching model proposed in [32]—profile, match and introduce users, and enable their interactions. We designed and implemented two types of profiling and matching processes: one based on the individual profiles members filled in, and the other based on interactions.

1. **Exploiting the profiles members provided** [33]. This implementation of the buddy programme relied on the explicit profile information (social-economic, qualities and skills, preferences) that the community members provided upon joining the community. Three social matching algorithms exploited these profiles. One matched people based on demographic similarities, as people typically like others who are similar to themselves, and demographic attributes are shown to correlate with interpersonal attraction [34]. The second one used the members’ stated skills, based on how well members would complement

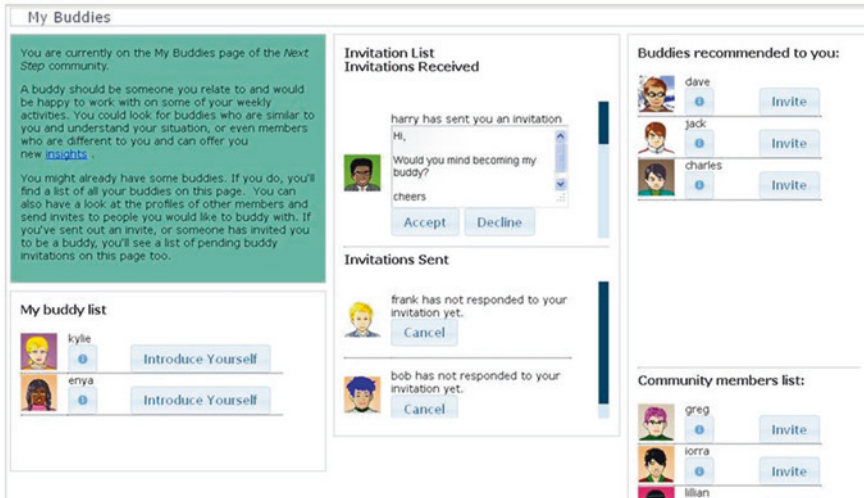


Fig. 5 “My Buddies” page—from left to right: the list of buddies; the list of invitations received and sent; the list of all members with at the top the buddy recommendations

each other’s skills and personal qualities. The third one exploited the preferences people selected about the characteristics of their buddy. With all three algorithms, we ensured that the same person was not recommended to several people, to increase the likelihood that everyone would be recommended as a buddy to someone else.

2. **Exploiting social interactions.** In this implementation of the buddy programme, the system exploited user behaviour and observed interactions [35]. The idea behind this implementation is as follows: if two users interact (whether passively, e.g., a user reading the other user’s posts, or actively, e.g., a user rating the other user), they are similar in some way and might enjoy being buddies. While the recommender based on profiles could be used immediately, this implementation of the buddy programme was used once there were enough interactions and behaviours in the community.

On their “My Buddies” page, a community member could invite someone to become their buddy. They could invite anyone in the community or select a person from the recommended list. The “My Buddies” page displayed the list of current buddies, the invitations this member had received and the ones he or she sent out, the list of people recommended by the system, and the list of all community members (see Fig. 5).

3.4 Journey of Reflection Through Activities

Finally, to support people going through the required transition process, we developed a *journey of reflection* through a set of reflective activities, released to community members one at a time, in a structured format. The activities were designed

with the help of social workers from our government collaborators. They aimed to help parents face obstacles, regain confidence, plan their return to work, and enable a critical self-review (with respect to attitudes, beliefs, skills and aspirations), self-development and empowerment. There were two main types of activities:

- Activities to help people be better equipped to look for a job—e.g., exploring the type of jobs one desires, or writing a CV.
- Activities to encourage people to develop a support network.

Some activities were to be done individually, others in collaborations with others (e.g., a buddy). Activities were typically accompanied by resources. The interested reader is referred to [36] for additional details.

3.5 The Discussion Forum

To enable participants to communicate with each other—e.g., ask questions, get advice, share their knowledge and experiences, or simply chat with each other, *Next Step* included a discussion forum. One concern that was raised during our requirements analysis was the veracity of the information that would be disseminated through the community. To address this concern, staff from Human Services moderated the discussion forum. They also were active participants in it, responding to questions as the need arose, providing support (for example for people in distress), actively helping participants getting access to the appropriate help when required, giving relevant information, and, especially at the beginning, trying to encourage members' participation by initiating discussions. They also ensured that the forum remained as positive as possible under the circumstances and did not focus solely on people's frustration and negative feelings (another concern that had emerged from our initial analysis).

3.6 Providing Useful Resources: Media, Toolkit and Live Chats

As is common in many online communities, *Next Step* also provided a variety of resources that were deemed to be relevant and useful for this cohort ("Media" and "Toolkit"). This enabled staff from Human Services to provide specific information to members, for example fact sheets about the transition process, list of useful websites, etc. These resources were provided in text, videos or audio materials (with transcripts), as appropriate.

Another way in which *Next Step* participants received relevant information was through Live Chat sessions, which provided opportunities to chat online on specific topics with experts during designated times. These Live Chat sessions usually lasted 1 or 2 h, and anybody was free to join the session and participate in the discussion. A transcript was later made available, so that those who had missed the sessions could still read the questions and their answers.

3.7 Gamification

Gamification is often used in online communities to enhance engagement and foster collaboration [37–39]. We applied some gamification techniques for this purpose in *Next Step*. We briefly describe them here. Chapter 10 provides further details about gamification in general, its origin, its elements and its application in our online community.

The main gamification element we used in *Next Step* was in the form of badges that were awarded to participants based on their activities in the community—see Fig. 6. These badges were displayed in the individual member’s landing page (i.e., their home page), so that members could reflect on their achievement—see Fig. 2. There were two types of badges: permanent and temporary. Each of the temporary badges was refreshed fortnightly, and, to keep them, members had to sustain a particular behaviour or being ranked among the top ten performers. In contrast, permanent badges were retained by members throughout their time in the community.

3.8 Content Recommendation

We mentioned above that we implemented a people’s recommender (recommending a buddy) based on the social interactions that were taking place in the community. We also used the social interactions to recommend content to members. This was another mechanism to further engage members, encouraging them to read someone’s post, a new discussion or a new resource.

Fig. 6 Member activities and badge allocation



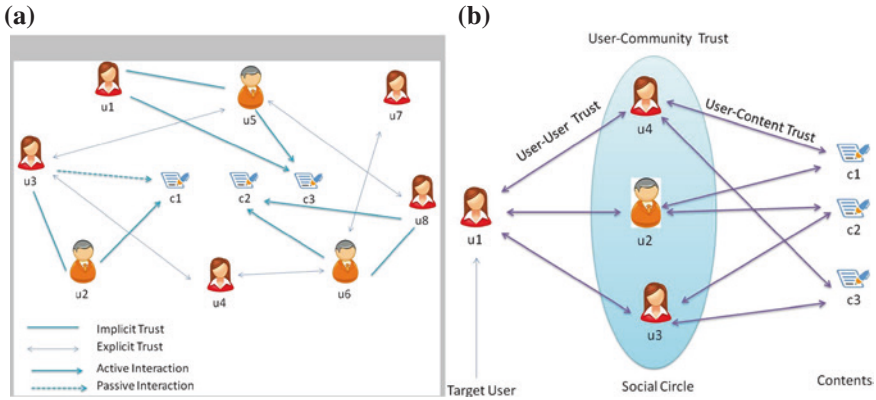


Fig. 7 The different variables contributing to content score

Given individual users, this recommender identified and ranked a set of content items with which others in their network had interacted. Several variables contribute to the content items relevance score (1) the network graph, (2) the user to user trust, (3) the user to content trust, (4) the user to community trust. These variables are illustrated in Fig. 7. The reader is referred to [35] for details.

3.9 Next Step Implementation

Next Step is implemented by customising Liferay⁹ core functionalities through the Hooks Plug-in.¹⁰ New services and portlets have been added using the Service Builder and portlet Plug-ins.¹¹ We developed Model View Controller (MVC) portlets¹², and the connection between presentation layer and core was through JSP/Tags/Http and Ajax calls. Sending emails was done using Java Mail embedded system. Custom SQL have been executed using embedded JDBC connection. The platform was instrumented so that we could record all interactions both to monitor the community and for future analysis.

A lot of preparation occurred prior to the community's launch, alongside the design. The project underwent a careful ethics process, approval was obtained, and we liaised with privacy, security and legal experts at Human Services. Together with our collaborators in Human Services, we planned the whole activity journey

⁹<http://www.liferay.com/>.

¹⁰<http://www.liferay.com/community/wiki/-/wiki/Main/Portal+Hook+Plugins>.

¹¹<http://www.liferay.com/documentation/liferay-portal/6.2/development/-/ai/leveraging-the-plugins-sdk-liferay-portal-6-2-dev-guide-02-en>.

¹²https://dev.liferay.com/develop/tutorials/-/knowledge_base/6-2/developing-jsp-portlets-using-liferay-mvc.

and had a schedule for the release of each activity. Staff from the Human Services compiled a set of resources to be made available. Together, we thought of discussion topics to bootstrap the discussion forum, to mitigate the risk of the community never taking off because of the “cold start” problem [40].

Human Services call centre staff were briefed when the invitation letters were sent to potential members to ensure that they could answer any questions recipients might have about the community. Finally, throughout the community, the discussion forum was constantly monitored for expressions of distress on the part of participants, which would have necessitated direct intervention from a Human Services staff or a social worker. As per our ethics approval, it was only when such intervention was required that Human Services would be able to obtain the identity of a participant, by requesting from CSIRO the token corresponding to the screen name. A process was put in place to decide whether an intervention was required and how to proceed. Human Services established a roster to ensure the forum was monitored at all times, and CSIRO staff also had a roster to ensure someone would be available at any time to provide the token information if required. We are pleased to note that no such direct intervention was required throughout the trial.

4 Next Step: The Trial

The community was launched in March 2012 and remained open for 12 months. The community portal was hosted by our organisation, whereas staff from Human Services were responsible for producing resources and moderating the interactions in the forum.

During the trial, four groups of parents were successively invited to join the community. All were parents on the appropriate payment schemes (e.g., either on parental payment, about to transition, or on the new payment, having just transitioned). In addition, they had to have an online account with Human Services and have agreed to participate in research activities.

A small subset of invited people actually registered, and yet a smaller number accepted the Terms of Use. While this was disappointing, this is a typical pattern of participation in online communities, and a good result given that the community was a closed one (i.e., by invitation only), so that not everyone could join at will. (We had in fact a number of examples of community participants wanting to invite their friends but unable to do so as the latter were not eligible—this is illustrated in the following post: “*I know of some single parents that would probably come and maybe even find the forum useful. Am i able to give them the link or do they have to be specifically invited?*”.) In total, 263 people registered, from which 181 actually visited the community.

Table 1 The community at a glance

Viewing of forum	6075
Commenting	734
Ratings	491
Viewing of resources	666
Media views	38
Activities	280
Live Chat	7
Profile updates	512
Buddies invited/accepted	53/15

We now turn to the number of active participants. Not all community participants were active in the community. Again, this follows a known pattern of participation in online community, the so-called “90-9-1 Jacob Nielsen rule”,¹³ which states that although only 1 % of people might be highly active, 9 % are active and 90 % “lurk”, meaning that *Next Step* was no different than other communities. We note that the word “lurk” is a negative word which we do not believe is appropriate—we refer to these people as “passive” participants, or people who absorb information even if they do not produce any. These people were members who came to the community to read the forum, the resources and take advantage of what was on offer in the community, but did not necessarily make themselves heard by writing comments in the forum. We should not expect all members of a community to be active participants. (After all, in non virtual communities, not everyone talks—some people choose to listen. Virtual communities are no different in this respect.) We observed from the statistics we collected during the trial that a reasonable number of participants logged in, viewed the forum and the resources, did some activities and then logged out. They were not visible in the community through the forum, but they benefited from the community (reading the discussions and resources). Some people logged in consistently every week, sometimes several times a week (up to 39 times a week). We had a total of 2268 logins, and 696 posts by members. This clearly indicates that many people entered the community but did not submit a post to the forum. If people came consistently several times a week, we presume they saw benefits in coming to the community.

Table 1 shows various statistics about the community. The resources were heavily consulted, and many participants worked on the activities. People did not take much advantage of the buddy programme, and few members attended the Live Chat Sessions, potentially as it turned out to be very hard to find a time for these sessions that would be good for many people.

We now focus on the forum, as it was by far the most popular feature of the community. In total, 180 threads were initiated, generating 1233 posts. The forum was organised into two sections: one for general discussion, and one for

¹³Nielsen Norman Group. <http://www.nngroup.com/articles/participation-inequality/>—Accessed September 14th, 2015.

discussions specifically related to the activities. The general discussion section was the most active (1139 posts). The in-depth analysis that follows was performed on this section.

In the first 6 months of the community, the moderators initiated twice as many threads as members, as they attempted to bootstrap discussions—see Table 2. This reflects a normal “cold start” problem. In the second half of the trial, however, the community started having “a life of its own”, with the moderators initiating much fewer threads than members, and members generating many more replies than moderators. This is illustrated graphically in Fig. 8, which shows the cumulative counts of posts by both members and moderators. Week 34, when Group 4 joined the community, saw a surge in activity. This is likely due to two factors: (1) Group 4 was generally the most active and vocal, and (2) there were already many posts and resources in the community at that point, so that it was also easier to engage immediately. In general, we found that people talked about a variety of topics and expressed a number of emotions.

We performed a number of qualitative analysis on the data collected, including:

1. A three-prong language analysis of the forum posts to get an understanding of (1) the types of communications that occurred (a speech-act analysis); (2) what people talked about (a topic analysis) and (3) how people felt (a sentiment analysis). This was done through a manual annotation task.
2. An analysis of the role the moderators played throughout the project, from the planning of the community to the trial itself. We examined the tasks that had to be fulfilled and the skills they required. We also looked at the impact the moderators had in the community.

Table 2 Discussion threads

	Initiated by moderators	Initiated by members	Replies from moderators	Replies from members
First 6 months	20	10	74	83
Last 6 months	13	95	231	613

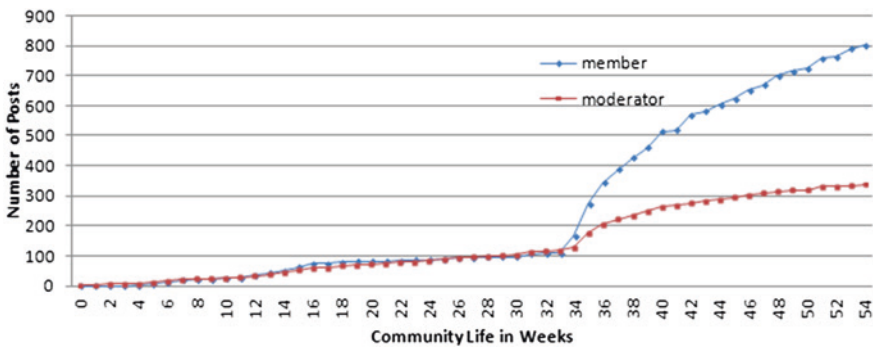


Fig. 8 Cumulative counts of posts by members and moderators, per week during the trial

3. An analysis of the content of the forum with the explicit aim of identifying the “barriers to work” presented, as it provides some valuable insights into this specific user group and their challenges.

We now briefly describe our results below, focusing on what actually happened in the forum in terms of support. As we had hoped, we saw members supporting each other through their posts, listening and acknowledging each other’s posts, agreeing and empathising with each other, providing encouragement and advice, and also sharing tips and information.

4.1 Communications Amongst Community Members

We observed that many members shared their stories, as a way to introduce themselves to the community, to take part in the conversation, to acknowledge each other and to empathise with others. We note that acknowledging someone and empathising with someone is a form of emotional support.

Members also often expressed some negative feeling (e.g., frustration) about the situation, the transition and the process, to which others agreed and sometimes reinforced. This was reflected in the use of language, with expressions such as “the majority of us”, “our plight”, and “how we feel”, suggesting that people were thinking of themselves as a united group. A sense of cohesiveness is also a form of emotional support, as individuals no longer felt alone in their situation, and they could share their stories and feel understood. Finally, participants started sharing ideas and tips, and asking information of each other.

Beyond simple acknowledgements or sharing life stories and information, interactions also showed evidence of explicit support between members, with people offering help, advice or posting caring comments. Examples of posts from members to members are provided in Table 3.¹⁴

We analysed the marks of support conveyed between members, looking at the expressions of positive and neutral feelings. We employed a subset of the taxonomy developed by [41], and the posts were annotated by two annotators, using the commercial annotation tool QDA Miner.¹⁵ The inter-coders agreement were computed with the metric provided by QDA Miner, Scott’s pi [42], the disagreements reviewed and discussed, and revisions took place when necessary. The overall percentage of agreements observed between the coders was 94.1 %, with individual annotation label percentage ranging from 82.9 to 99.7 %.

We counted as marks of support feelings of gratitude, compassion, “congratulations” (a category which, in our analysis, comprises congratulations, encouragement and good wishes) and various forms of “listening” (to capture expressions

¹⁴All posts are reported verbatim.

¹⁵<http://provalisresearch.com/products/qualitative-data-analysis-software/>.

Table 3 Examples of posts, showing relationship building amongst community members

Communicative act	Example
Introducing oneself by sharing one’s life story and providing personal information	<i>“Hi there, I am a new forum member, received my letter on Friday. I became a single parent in 2003 with a 6 month old. I Started uni in 2007, completed a cert 3 in aged care this year and. [...]”</i>
Agreeing with a previously expressed negative sentiment	<i>“Hi bewildered, can I just say that I think your posts high-light our plight very well.[...]”</i>
Responding to tips	<i>“Emm, I like your idea of paying the advance on your credit card, I might use some of mine to do that too and then work on my low interest loan.”</i>
Providing explicit support	<i>“hi Kayte, would you like to have a chat, I understand your frustration, I know a little about the changes, maybe two heads could work on your situation with your health card. Call me [phone number removed for privacy reasons] and I will give you my home number. My real name is Maree.”</i>
Providing emotional support	<i>Hugs to you Tox Wishing you and your son the best outcome for his health. The rest just sucks! Hang in there!</i>

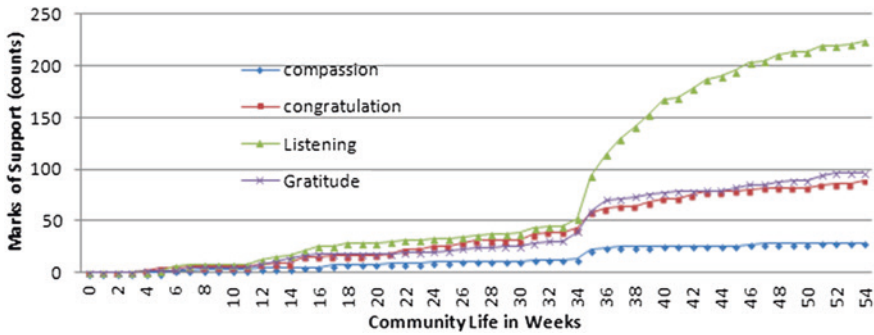


Fig. 9 Cumulative counts of marks of support offered from members to members

of interests, use of language showing that people paid attention, listened and acknowledged what was being said).

Figure 9 reports the cumulative counts over the trial of all these expressions of support. We observe that members started to acknowledge each other (labeled “listening”) quite early in the trial, and, later, showed marks of gratitude, compassion and encouragement.¹⁶ We conclude that our participants did obtain emotional support and, to a lesser extent, informational support from each other.

¹⁶We also observed 341 positive ratings, another form of support from members to each other.

4.2 *Communications Between Community Members and the Moderators*

Members quickly used the forum as a channel to get accurate and timely information. The moderators became an interface to Human Services, and the community a privileged way to source information that was sometimes difficult to obtain.

Some examples of questions asked are shown in Table 4. (“Gigi”, mentioned in post 2, was a moderator.) Some were of a general nature (e.g., 1 and 3 in Table 4), others very specific to the member’s circumstances (e.g., 2 in Table 4).

Throughout the trial, the moderators provided relevant and up-to-date information to members in the forum (and by publishing resources). They did so in a number of ways:

- By responding to explicit requests or demands for clarifications. Typically, moderators included explanations in their responses so that people could understand the information given and put it in the appropriate context;
- By spontaneously offering information on a topic, when that topic was raised by members;
- By taking advantage of responding to a specific question to add more information about the topic more generally, to ensure the post was relevant to more than one person; and
- By providing links and additional pointers for people to investigate further.

Because of the information the moderators were providing, some members started to come quite regularly to get updates; some several times a week, others several times a day.

The moderators also provided emotional support by listening to members’ concerns and collecting feedback about the transition and social welfare policies in general. Listening to people’s experiences, their struggles in coping with the changes, and their frustrations towards Human Services or the government in general was an important part of the moderators’ role. It also became an important aspect of the community. People wanted to be heard and understood. The moderators responded to this need by letting members know that they were listening to them, and by showing understanding, concern and compassion. Table 5 shows some sample posts from the moderators displaying compassion and understanding. As we will see below, this support was greatly appreciated by community members.

Table 4 Examples of questions to moderators

1	<i>“I live in a regional area that seems to be limiting my ability to gain employment. Is there any help in relocating to a city to increase chances of employment?”</i>
2	<i>“Hi Gigi, I know u r busy, do u have time to see how my Education Entry Payment query is going. Because it was showing online as being paid, I have actually spent this money and need to repay it. Thanks!”</i>
3	<i>“can we earn \$400 a fortnight or \$62”</i>

Table 5 Examples of posts by moderators, explicitly acknowledging members

"Hi Angbrennil. Thanks for coming back to the forums and giving us an update on what's been happening. I really hope you get the support and advice you need to help you through. Let us know if there are any resources, activities or live chat sessions we can organise to help you be as prepared as possible to 'hit the pavement'".

"I wish you all the best in this tough time - keep us posted :-)"

"Hi bunniesmum A few people have reported similar issues. We have asked these people to email our boss so we can investigate on 2 Jan. If you would like us to do this for you too, [...]"

Finally, the moderators collected feedback, whether it was in the form of complaints, reports of communication breakdown, system malfunctions, concerns, frustration or angst, and passed on the information to the relevant entities (i.e., business units, policy makers, government departments, etc.).

4.3 Usefulness of the Support Provided

We now examine the impact of the support provided in the community and whether it was considered useful and welcome by the community members. We asked for explicit feedback, but very few people provided it. Instead, we take the ongoing feedback we obtained throughout the trial, via the posts (e.g., thanking the moderators for "useful links", or for their support) to be a good reflection of people's feelings about the community and the support they received.

We looked at the expressions of gratitude. This is shown in Fig. 10. We note that members expressed gratitude towards the moderators from the beginning of the community (essentially because moderators answered their questions and listened to their concerns). We see the expressions of gratitude from members (to both members and moderators) increasing steadily during the trial, with a sharper increase starting week 34 (when Group 4 joined).

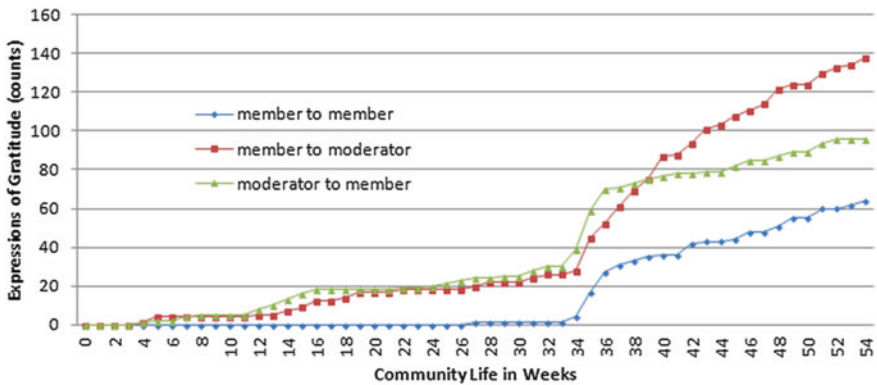


Fig. 10 Cumulative count of expressions of gratitude expressed in the community

Table 6 Sample posts showing gratitude from members to moderators

<i>"Thank you for the quick answer and the Link Gigi. :D."</i>
<i>"Hi Gigi, Thanks for the prompt response and the welcome."</i>
<i>"Thanks Gigi, your support is great. I'd also like to thank you for your promptness in answering our queries and for looking into more serious issues - normally we just wait on hold with the call centre. It's great that you are really involved in this project and your sincerity is very welcome."</i>
<i>"Thanks Marian [another moderator]. It's good to get some positive reinforcement and encouragement."</i>

Table 6 shows some expressions of gratitude towards the moderators. We see that this gratitude is in response both to information that the moderators provided (and the speed with which they provided it) and their emotional support. We conclude that community members appreciated the support the moderators gave them.

Next Step became a hub for information, and members visited the site regularly for information and updates. The information was relayed to others sites, other single parents and friends. Some wanted to invite their friends to join. We believe this shows that the community was useful to its members, and that they thought it could be helpful for others. We have already mentioned how members appreciated the support they received from the moderators. They also appreciated the support they received from each other, as illustrated by the following post: *"It has also been a pleasure to interact with other members of the community, I wish you all the best of Luck, good health and understanding from all you come in contact with."* It is also worth noting that, although the *Next Step* community was closing, the community formed was not to be completely dissolved as active members were organising themselves to continue staying in touch with each other as illustrated by these comments (*"Hi everyone, Just wanted to invite anyone who is interested to come and join the forum I have set up so we can continue to keep in contact and up to date with what's going on."*). We thus conclude that, all and all, the participants did find the support useful.

We also observed that the moderators had another impact through their interactions in *Next Step*. Because of their prompt, courteous, accurate and sympathetic responses, they were able to change people's perception and attitudes towards Human Services and its staff. At the beginning of the community, people tended to bundle the government (and its policies), Human Services (as a specific department) and its staff into one "nasty" entity, and one that could not be trusted. As time passed, members established a relationship with the moderators, and started to understand that Human Services (as a whole) were only responsible to carry out policies (not make them), and that staff in Human Services (as exemplified by the moderators) were really trying to help. This shift increased the trust relationship between members and Human Services. In general, we saw that the moderators played an important role both in increasing the social capital and social trust in the community and in changing perceptions and attitudes towards Human Services.

4.4 Barriers to Work Analysis

Our aim in building *Next Step* was to provide informational and emotional support to a specific cohort of citizens. Through our analysis of the posts, we also noticed that they contained a lot of information that could be useful to Human Services to understand the difficulties these citizens were facing with respect to re-entering the workforce, what we termed “Barriers to work”. We thus performed another annotation task to identify these barriers, as expressed in the forum. We first identified all topics related to barriers to work mentioned in discussions, by going through all members’ posts. We then grouped all the topics into categories, and all member posts were annotated by two researchers into these categories.¹⁷ Finally, we examined the annotated content to identify more precisely the major topics related to barriers to work discussed in the forum.

We used the following high-level categories:

1. Job market. This referred to the current economic situations, potentially for a specific (regional) area.
2. Processes and policies. Participants found many of the government policies and processes becoming difficulties to overcome to find a job. This category included communication issues, issues with the specific agencies that customers were meant to work with, and clarity in the required processes. Some of these topics may not have been clearly identified as a barrier to work, but they were discussed in the forum in the context of looking for jobs.
3. Cultural. Cultural issues included flexibility, ageism, exploitation, incentives, etc. Some of these issues were related to members, whereas some belonged to employers. We also noted that, in many discussions, parents showed their frustration at not being able to be flexible to fit in employers’ environments. Parents considered this as a burden to the employer.
4. Life situation. Many parents expressed the fact that their own life situations prevented them from transitioning to work. Some parents felt that they were not even in a position to look for a job, whereas others could not find a job that fitted their life situation. Examples of life situations included children with special medical conditions, lack of recent work experience, etc.
5. Logistics. This included caring of children while at work, transport to and from work, etc. These topics were discussed in terms of their affordability and availability. Affordability is related to finance and policies, but we chose to label such posts as logistics, as we identified logistics as a primary issue in these cases.
6. Financial. This topic included the need for financial support to prepare and appear for job interviews, cost related to further education and retraining, etc.

We also identified an additional orthogonal dimension on which we could place the topics above: intrinsic versus extrinsic. We defined intrinsic factors as those

¹⁷We had a high level of inter-annotator agreement, ranging from 87 % to 100 % depending on the categories.

factors that are inherently associated with parents’ own conditions and environment (e.g., having a sick child, the lack of recent work experience). In contrast, extrinsic factors were factors outside the parents’ control (e.g., non-availability of childcare or the lack of jobs in their area).

All posts were annotated along these dimensions. Figure 11 summarises our findings: the occurrences of various categories over all the members’ posts. We first look at barriers using high-level categories. The dimensions of Intrinsic/Extrinsic are represented by the two left-most columns in Fig. 11, and the remaining columns are the high-level categories mentioned above. We see that the Intrinsic category is the largest. This means that members expressed their own situations and environments as major barriers to work. This is also seen through the fact that the “*life situation*” and “*financial*” categories (both intrinsic factors) are the top two high-level categories for the topics. We examine these categories and identify specifically what contributes to their high number of occurrences.

Within the “*life situation*” category, all low-level categories (i.e., “Children with special needs”, “No social/family support”, “Education” (other than cost), “Medical/disability” and “No recent experience”) were discussed about the same number of times. Many people explained why they found themselves having “No social/family support”: very often, they had moved away from their family while in a stable relationship with their partners. When the relationship had broken up, they had found themselves away from their own family, and often unable to move for many reasons.

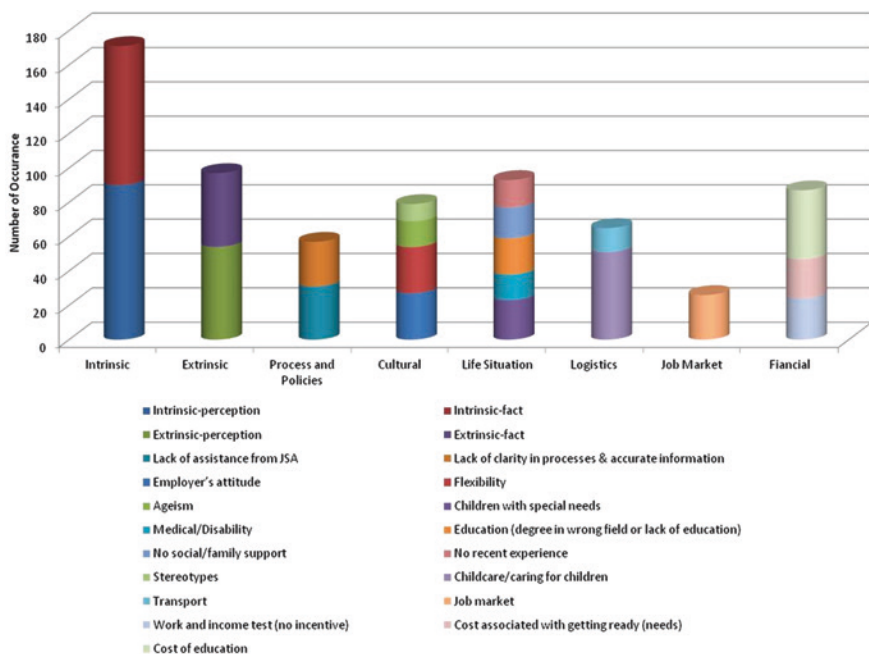


Fig. 11 Topics mentioned as barriers to work

In the “*financial*” category, the “cost of education” was the major topic discussed, followed by “work and income” test. With respect to education costs, parents were very willing to take further education to improve their chances of getting back into the workforce. However, parents who did not have savings and were left with no or very low discretionary money after meeting their basic needs found the cost of education to train themselves to enter the workforce to be a real barrier. We also found a number of occurrences of the lack of clarity on various processes and policies (e.g., “the Pensioner Education Supplement” and the “Job Education and Training child care fee assistance”). As for the issues with “work and income test”, it was clear that members found no incentive to join the workforce, as there was no financial incentive: the amount of money they would receive after tax was low compared to the other costs (cost of childcare, transport, etc.). As a result, our members did not see the advantage of working as making up the disadvantages (e.g., working long hours, being away from children, etc.).

In the “*logistics*” category, “childcare” occurred more often than “transport”. Parents found it hard to find good arrangements for their children while they were at work. We found that this was, in fact, the biggest barrier faced by our participants, as expressed through their posts. We had indeed observed during the topic identification process that a large number of discussions in the forum were about childcare availability, affordability, quality, cost, and flexibility. We note that this is consistent with other studies on barriers to work [43–45].

A significant number of parents talked about jobs availability (the “*job market*” category). Two major factors were mentioned here: the global financial crisis and the local job market in rural and regional areas. Well educated parents in rural and regional areas found it difficult to find jobs suited to their skills. Finally, the “*processes and policies*” category is fairly evenly split between the “lack of support from government hired providers” and the “lack of clarity in processes and accurate information”.

A close observation of discussions in the forum also revealed that there was hardly a single category responsible for creating hurdles for parents to enter the workforce. Most parents expressed a number of categories within a single post. We conducted a co-occurrence analysis to identify which set of barriers were mentioned together, and observed the following:

- “Ageism” appeared together with “job market” and “no recent experience”. We observed that many parents felt that there were no jobs for them. Members explicitly mentioned the age 45+ when they discussed ageism. As for work experience, members felt that they were discriminated in situations where jobs meeting their skills were advertised at a junior level; members felt that, in these situations, employers would not offer them the jobs, despite them having the right skills, because of their age—even though parents clearly indicated that they would be willing to take up the positions with a pay at the junior level.
- “Childcare/caring for children” occurred most times with “flexibility” and “no social/family support”. Members felt (or had the experience) that employers were not willing to offer flexible working hours to enable parents to provide

quality care to their children while working. They also mentioned that they would feel comfortable leaving their children under the supervision of family members while at work, but that they were away from their immediate family for a variety of reasons, and hence this option was not available to them.

- “Children with special needs” occurred more frequently with “education” and “no social/family support”. Some members told us that they had children with medical conditions, such as autism. These members expressed the hurdle of obtaining further education and training while looking after autistic children with no family support available.

5 Discussion

The goal of our community was to trial a new way of providing services and support to customers. We found that community members became actively involved—logging in regularly, commenting, asking questions and providing peer support. As with other communities, some members were very vocal (i.e., posting heavily on the forum), while others were more passively engaged (e.g., logging in frequently and reading the forum, thus indicating that what they were reading was useful to them, but not posting any messages).

Even if it was not explicitly acknowledged, the community became a hub for information. Often members would post their questions in the community before calling Human Services in the hope they could avoid the need to call. Some people mentioned they only had mobile phones and could not afford to call, others wanted to avoid the waiting times experienced at Human Services call centres. This indicates that our participants had a preference for getting information through a secure online community, as they could post their questions at a time that suited them and then go about their day, knowing it would be responded to promptly.

In addition, participants built a trust relationship with the moderators: they knew they would get relevant and accurate answers, as the moderators took the time to understand people’s circumstances and got to “know” them through the trial. Such a relationship is much harder to achieve through a phone call (or even a visit to an office), as one is unlikely to talk to the same person. In general, participants tended to verify in the community the information they had obtained via other means.

From the perspective of Human Services, the community enabled one-to-many targeted service delivery/information provision. As all community members were in similar situations, they often had the same questions or concerns. Moderators would answer questions individually, but these were visible to the whole community. It was evident through thumbs up ratings, multiple participants thanking moderators for answers, and people logging regularly to read the forum that answers benefited many members. Participants also mentioned relaying the information to others sites, other single parents and friends. Interestingly, as the community closed, some passive members (those who had never posted before) decided to comment in the community to say that they had visited it regularly to

get up-to-date and reliable information, but that they had never needed to ask a question as others always did this for them. This shows that online communities can be a valuable service delivery channel, providing tailored information to a broad audience, helping customers, sometimes before they even need to ask. On the negative side, however, some members found the site depressing, because of the numerous sad stories expressed. But while there were sad stories shared, there were also stories of hopes, humour and success.

We also discovered an interesting tension. Some people expressed doubts about the usefulness of such a forum “run by the government”, as it “meant they could not express themselves freely” (although, from what we observed, it seemed that people did not feel constrained in their posts, sometimes openly criticising Human services).¹⁸ However, one of the aspects of the community people found most useful was that it gave them prompt access to information, precisely because it was run by the government and moderated by government employees. Finally, we note that the community was thriving when we had to close it.

6 Conclusions

In this work, we investigated whether an online community run by a government agency could be used to support specific target groups, in particular welfare recipients. We designed and deployed an online community whose aim was to provide informational and emotional support to its members. Our analysis of how participants used the forum and what posts they wrote leads us to believe that the community achieved its purpose, also providing a welcome voice to its participants who wanted to be heard by the government. Based on our experience, we believe a community might be an effective way to provide support to specific target groups. We observed that the moderators played a crucial role in engaging the participants, supporting them, and helping them support each other. They also were key to trust forming in the community, by always providing prompt and accurate information and by showing understanding, concern and compassion. Finally, we note that providing information through social media (as in an online community) can be a very effective way to provide information, as it is a one-to-many channel, as opposed to a one-to-one, as in call centres or office visits.

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¹⁸It is also worth mentioning that the moderators did not censor any posts. The only constraint placed on participants (explained in the Terms and Conditions) was not to be abusive towards anyone in the community (a participant or a moderator).

References

1. Sensis. (2015). Available: https://www.sensis.com.au/content/dam/sas/PDFdirectory/Sensis_Social_Media_Report_2015.pdf
2. Palen, L., Hiltz, S. R., & Liu, S. B. (2007). Online forums supporting grassroots participation in emergency preparedness and response. *Communications of the ACM*, 50, 54–58.
3. AGIMO. (2008). *Consulting with Government—Online*. Australian Government, Department of Finance and Deregulation.
4. Bødker, S., Colineau, N., Gandrup Borchorst, N., Korn, M., & Paris, C. (2011). International Reports on Socio-Informatics (IRSI) (Vol. 8). *Proceedings of the 2011 Community and Technology (C&T 2011) Workshop on Government and Citizen Engagement*. IISI—International Institute for Socio-Informatics Brisbane.
5. Granoveter, M. S. (1983). The strength of weak ties: A network theory re-visited. *Sociological Theory*, 1, 201–233.
6. Skeels, M. M., Unruh, K. T., Powell, C., & Pratt, W. (2010). Catalyzing social support for breast cancer patients. In *28th International Conference on Human Factors in Computing Systems*. Atlanta, Georgia, USA, pp. 173–182.
7. Ma, M., & Agarwal, R. (2006, 18th July). *With a little help from strangers: Social support and smoking cessation in online communities*. Available: <http://www.rhsmith.umd.edu/news/releases/2006/120406.aspx>
8. Sweetser, K. D., & Lariscy, W. (2008). Candidates make good friends: An analysis of candidates' uses of facebook. *International Journal of Strategic Communication*, 2, 175–198.
9. Vargas, J. A. (2008, Septembre 17th). *Obama raised half a billion online*. Available: <http://voices.washingtonpost.com/44/2008/11/obama-raised-half-a-billion-on.html>
10. Williams, C., & Gulati, G. J. (2009). Facebook grows up: An empirical assessment of its role in the 2008 congressional elections. In *Midwest Political Science Association*, Chicago.
11. Mascaro, C. M., & Goggins, S. P. (2011). Challenges for national civic engagement in the United States. *International Reports on Socio-Informatics (IRSI)* (Vol. 8). Proceedings of the 2011 Community and Technology (C&T 2011) Workshop on Government and Citizen Engagement. Bodker et al. (Eds).
12. Muhamad, R. (2011). Political blogging and the public sphere in Malaysia. *International Reports on Socio-Informatics (IRSI)* (Vol. 8). Proceedings of the 2011 Community and Technology (C&T 2011) Workshop on Government and Citizen Engagement. Bodker et al. (Eds).
13. Toland, J. (2011). E-petitions in local government: The case of Wellington City Council. *International Reports on Socio-Informatics (IRSI)* (Vol. 8). Proceedings of the 2011 Community and Technology (C&T 2011) Workshop on Government and Citizen Engagement. Bodker et al. (Eds).15–22.
14. Cohen, S. (2004). Social relationship and health. *The American Psychologist*, 59, 676–684.
15. Maloney-Krichmar, D., & Preece, J. (2005). A multilevel analysis of sociability, usability, and community dynamics in an online health community. *ACM Transactions on Computer-Human Interaction*, 12, 201–232.
16. Shirky, C. (2008). *Here comes health*. Presented at the Health 2.0 Conference: User-Generated Healthcare, San Francisco, CA, USA.
17. Smith, K. P., & Christakis, N. A. (2008). Social networks and health. *Annual Review of Sociology*, 34, 405–429.
18. Welbourne, J. L., Blanchard, A. L., & Boughton, M. D. (2009). Supportive communication, sense of virtual community and health outcomes in online infertility groups. In *International Conference on Communities and Technologies (C&T'09)*, University Park, Pennsylvania, USA, pp. 31–38.
19. Baroni, A. (2011). Deliberation and empowerment in Rio de Janeiro's favelas. *International Reports on Socio-Informatics (IRSI)* (Vol. 8). Proceedings of the 2011 Community and

- Technology (C&T 2011) Workshop on Government and Citizen Engagement. Bodker et al. (Eds).
20. Sawyer, H. (2006). One fundamental value: Work for the dole participants' views about work and mutual obligation. In *Proceedings of the Road to Where? The Politics and Practice of Welfare to Work Conference*, School of Social Work and Applied Human Sciences, University of Queensland, Brisbane.
 21. Cameron, H. (2006). Single parent family under welfare-to-work. In *Proceedings of the Road to Where? The Politics and Practice of Welfare to Work Conference*, School of Social Work and Applied Human Sciences, University of Queensland, Brisbane.
 22. Cox, E., & Priest, T. (2008, Dec 15, 2010). *Welfare to work: At what cost to parenting?* Report available at: http://www.women.nsw.gov.au/women_and_work/partnership_projects/welfare_to_work
 23. Cohen, S., & Hoberman, H. M. (1983). Positive events and social supports as buffers of life change stress1. *Journal of Applied Social Psychology*, 13, 99–125.
 24. Ganster, D. C., Fusilier, M. R., & Mayes, B. T. (1986). Role of social support in the experience of stress at work. *Journal of Applied Psychology*, 71, 102–110.
 25. Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behavior*, 35, 53–79.
 26. Dormann, C., & Zapf, D. (1999). Social support, social stressors at work, and depressive symptoms: Testing for main and moderating effects with structural equations in a three-wave longitudinal study. *Journal of Applied Psychology*, 84, 874–884.
 27. Colineau, N., Paris, C., & Dennett, A. (2011). Exploring the use of an online community in welfare transition programs. In *25th BCS Conference on Human-Computer Interaction*, Newcastle-upon-Tyne, United Kingdom, pp. 455–460.
 28. Colineau, N., Paris, C., & Dennett, A. (2011). Capitalising on the potential of online communities to help welfare recipients. In *International Reports on Socio-Informatics (IRSI)* (Vol. 8). Proceedings of the 2011 Community and Technology (C&T 2011) Workshop on Government and Citizen Engagement. Bodker et al. (Eds). pp. 59–65.
 29. Bista, S. K., Colineau, N., Nepal, S., & Paris, C. (2012). The design of an online community for welfare recipients. In *Proceedings of the 24th Australian Computer-Human Interaction Conference*, Melbourne, Australia, pp. 38–41.
 30. Colineau, N., Paris, C., & Nepal, S. (2013). Providing support through reflection and collaboration in online communities. In *Proceedings of the 16th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW)*, San Antonio, Texas, pp. 471–476.
 31. Paris, C., Colineau, N., Nepal, S., Bista, S. K., & Beschorner, G. (2013). Ethical considerations in an online community: The balancing act. *Ethics in Information Technology, Special Issue on Ethics of Social Networks for Special Needs Users*, 15, 301–316.
 32. Terveen, L., & McDonald, D. W. (2005). Social matching: A framework and research agenda. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 12, 401–434.
 33. Colineau, N. (2012). A buddy matching program to help build an online support network. In *OzCHI'12 Proceedings of the 24th Australian Computer-Human Interaction Conference* Melbourne, pp. 85–88.
 34. McPherson, M., Lovin, L., & Cook, J. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415–444.
 35. Nepal, S., Paris, C., Pour, P. A., Freyne, J., & Bista, S. K. (2015). Interaction based recommendations for online communities. *ACM Transaction on Internet Technology (TOIT)*. 15 (2), article 6. June 2015.
 36. Colineau, N., Paris, C., & Nepal, S. (2013). Designing for reflection and collaboration to support a transition from welfare to work. In *Proceedings of the 2013 conference on Computer Supported Cooperative Work (CSCW)*, San Antonio, Texas, pp. 471–476.
 37. Bunchball. (2010). *Gamification 101: An introduction to the use of game dynamics to influence behaviour*. Available: <http://www.bunchball.com/gamification101>
 38. Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). Gamification: Using game-design elements in non-gaming contexts. In *PART 2 Proceedings of the 2011*

- Annual Conference on Human Factors in Computing Systems*, Vancouver, BC, Canada, pp. 2425–2428.
39. Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. Canada: O'Reilly.
 40. Schein, A. I., Popescul, A., Ungar, L. H., & Pennock, D. M. (2002). Methods and metrics for cold-start recommendations. In *Proceedings of the 25th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, Tampere, Finland, pp. 253–260.
 41. Storm, C., & Storm, T. (1987). A taxonomic study of the vocabulary of emotions. *Journal of Personality and Social Psychology*, 53, 805–816.
 42. Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *Public Opinion Quarterly*.
 43. Brooks, M. G., & Buckner, J. C. (1996). Work and welfare: Job histories, barriers to employment, and predictors of work among low-income single mothers. *American Journal of Orthopsychiatry*, 66, 526.
 44. Oanziger, S., Corcoran, M., Danziger, S., Heflin, C., Kalil, A., Levine, J., Rosen, D., Seefeldt, K., Siefert, K., & Tolman, R. (2000). Barriers to the employment of welfare recipients. *Prosperity for all?: The economic boom and African Americans*, 245.
 45. Meyers, M. K., Heintze, T., & Wolf, D. A. (2002). Child care subsidies and the employment of welfare recipients. *Demography*, 39, 165–179.