Gathering design requirements for a microcommunity –
the case of preschool parents and teachers
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ABSTRACT
A microcommunity for preschool is a community for parents, teachers and other people involved in a preschool child group. The community is a tool for distributing and exchanging information and complements the traditional face to face communication and paper notes in that it makes information available from other places than the home and the preschool facilities. We present a first design iteration for preschool microcommunities with parents and teachers. Teachers have worked with a prototype tool to create microcommunities that has been made available to parents. We present a set of design principles for preschool microcommunities and a new design of the tool.

Categories and Subject Descriptors
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms
Design, Human Factors.

Keywords
Preschool, community, microcommunity, mobile, cell phones, information exchange

1. INTRODUCTION
Social networking sites such as Facebook, MySpace, and Beehive has received a lot of attention both in media and in the research community the past few years (see for example [1-4]. The number of members on the sites has exploded and media has predicted that they soon will be more commonly used than email for communication, especially among young people (ref metro).

Facebook, MySpace, and Beehive are all large international communities that allow members to maintain a huge network of close and peripheral contacts, Facebook and MySpace mainly in the private area while Beehive is a professional community for IBM employees. Research has also shown that social networking sites are used to find information [5].

We are working with a different concept of community though, that of a microcommunity. We define that as a small group that share a common interest, share information needs, and need communication tools. In our case they are geographically close, such as sports teams and school classes. The information they need to share and communicate are local and/or personal and relevant only for a small number of directly involved people so there is no need for a huge community.

Preschool is a domain that has received little attention from the IT research community so far. However, it presents excellent examples of microcommunities with groups of children, their parents, and teachers, and they could greatly benefit from a community site as a tool. Preschool in Sweden is organized in groups of approximately 20 children which would correspond to a microcommunity of 40 parents, 3-5 teachers, and a few extra family members involved in picking up or dropping off children such as grand parents or nannies. We do not expect the children aged 1-5 years to participate as active members in the microcommunity. Members of the microcommunity have common interests: parents of children in one group share the kids’ schedule, events and other stuff, need to communicate with the same teachers, go to the same parent-teachers meetings and all of them want to follow how their children are doing and assure that preschool is working well. However, they do not always have other social connections besides that they often live relatively close to the preschool. Sometimes they have carefully chosen the preschool, sometimes it was assigned to them by default (based on where they lived) or because it had open places. It is important the communication and the exchange of information between parents and teachers work smoothly.

When creating a microcommunity for preschool it is important to consider the fact that children are involved. Information about activities and contact information must be handled carefully and not be available outside the community in any way. It is also crucial to keep in mind that bringing children to preschool is a daily activity that for most families goes on for several years. Therefore, no burdening routines around it can be introduced.

Previous work [6] has pointed out that the information exchange between preschool teachers and parents to a large extent relies on parents’ presence in preschool. Most of the information is exchanged in the premises of the school, either by face-to-face
communication or by the distribution of paper notes. This means that breakdowns occur when children are sick or the family is traveling since no one comes to preschool to get the information. The information also is bound to physical places such as the kitchen fridge or the notice board of the preschool which makes it inaccessible from other places (parents at work cannot check the fridge, parents at home with sick kids cannot check the notice board at preschool). A web based community with mobile access could be useful.

The preschool environment usually contains little technology, and there are huge differences in the technical education and experience of the teachers. This means that it is extremely important that any tool that is introduced is easy to use. Teachers also have little time for administrative work so everything needs to work efficiently and demand little maintenance not to introduce new burdens. Our goal with the preschool microcommunity is to complement the existing practices of face to face communication and paper notes, not to replace them in any way.

We decided to focus on the information exchange and the need for accessing information from other places than at home and in preschool. Together with the company Squace AB, we decided to use their general tool for creating mobile communities to create preschool microcommunities in close cooperation with preschool teachers, and then show them to parents to gather information on how to design for this kind of community. The tool that Squace provided was a fully functioning beta version that they were interested in targeting for the preschool domain which assured us their support during the project and gave us good opportunities to influence the design of the tool. The work presented here resulted in a new version of the tool specifically designed for the creation of preschool microcommunities.

2. PRESCHOOL IN SWEDEN

In Sweden, 80% of children aged 1-5 attended preschool in 2007. At the age of six, they start in “preschool class” which is a preparatory year between preschool and school. In average, children are 18 months old when they start preschool.

Preschools are organized around groups of children, usually based on age with children aged 1-3 in a younger group and an older group for those aged 3-5. The size of the groups is usually 15-16 children in the younger groups and 18-20 in the older groups. Each group is attended to by three teachers.

Two main professional groups work in preschool, preschool teachers and child care assistants. The preschool teachers have 3.5 years of university education in pedagogy, and children’s development and learning, combined with a variety of specializations such as music, drama, science for children etc. The child care assistant education is given within high school. Formally, preschool teachers have the pedagogic responsibility while the child care assistants are in charge of the practical issues of taking care of children. In this paper, we will refer to both groups as teachers.

Parents pay a fee for their children to go to preschool. The fee is 3% of the parent’s income with a ceiling of 1260 SEK/month for 2008. If a family has more than one child in preschool the fee for the second and third child is reduced. Children aged 4 and 5 have a right to 15 hours a week of preschool without charge. There are public preschools, private preschools and preschools run by parents, but they all operate with the same fees.

When it comes to technology and its use, the differences between various preschools are huge. The migration from paper to digital information in the administration work is basically completed by now, but many preschools have old computers, extremely slow Internet connections, no digital cameras or other technology. The differences are also large in how the existing technology is used in the pedagogic work with the children. Some preschools use digital cameras and camcorders to document the activities and let children watch and manipulate the pictures using the computers. Drawing software and games are also used with the children. The use of technology with the children of course depend on what kind of technology the preschool have access to, but also how comfortable teachers are with using it.

Here we do not focus on the specific organization of preschools or how the pedagogic activities are carried out, but on the information exchange between teachers and parents that are necessary to make everything work. The daily communication between parents and teachers about a child and the activities of the day, as well as the information about events, things to bring, meetings and other issues are present in all kinds of child care in many cultures. We therefore believe that the issues that we discuss in this paper are not only relevant for the case of Swedish preschools but also for a larger cultural context.

3. RELATED WORK

Social networking sites or community sites have received a lot of attention lately with Facebook perhaps being the one most in focus. The large community sites offer members to stay in touch with close and distant friends [7], promote themselves [8], and find and spread information [5] among other activities. In professional contexts such as IBM’s employee community Beehive, it is possible to create professional contacts and improve your career opportunities [3].

The microcommunity as we see it focuses to some extent on similar aspects as the large, international communities. In our work we concentrate on the distribution and exchange of information, and to some extent on keeping in touch. Since we
work with communities that are small and fairly closed (new members only enter once or twice a year when preschools accept new children) the need, and the possibility for, finding new contacts is small.

Our preschool communities are comparable to the small web communities that are offered to sports teams in Sweden by sites like www.sportnik.com and www.klubbsnack.se where teams can set up their web site and keep calendars, results, pictures and other information about the team. However, the possibilities of making those team sites available from cell phones are limited.

4. PILOT STUDY
The routines for information exchange between parents and preschool teachers have been examined through interviews in a pilot study [6]. Four individual interviews have been conducted with parents of children attending preschool and one interview has been conducted with a preschool teacher. The interviews focused on how teachers work to inform parents, how parents inform teachers, and where the break-downs occur. The interviews lasted for 30-60 minutes and were recorded.

The routines of spreading necessary information both to parents and to teachers rely heavily on physical presence in the facilities. In many cases this works well since parents drop off and pick up their children every day, which allow them to both get information from and give information to the teachers. However, if a child is absent due to illness there is a problem. Very little information gets through if you are not coming to the school. The interviewed parents reported that they sometimes call the preschool or other parents to check if something has come up while they have been at home with sick children. The other central information place is the home. Most of the interviewed families had a wall calendar in the kitchen and a message board for notes. This information is accessible even when children are staying at home sick, but when the family is traveling or the parents go to work they lose access to the information. Picking up children in the after-noon is for example an activity that does not start from home. Parents go from work to the preschool to pick the children up which means that they cannot check the kitchen calendar during the day to see if there is something special to adapt to.

An example of where the information practices fall short is when the preschool closes early (happens one day a month). These dates are announced in a special note that is distributed in the beginning of the semester, it is mentioned in the monthly letter and it is posted on the front door on the actual day. Parents reported carefully noting these dates since they need to depart from their established routine of picking up their children. However, staff reported that in average one family per occasion were late to pick up their children the day when they close early, and needed a reminder by phone. A probable reason for this is of course that deviations from routines are always difficult [9]. But moreover, it is very common that one parent drops the kids off and the other parent picks them up which breaks the principle of presence. The parent that sees the reminder in the morning is not the one that needs to come early in the afternoon. For some families, nannies and/or grandparents are also involved in picking children up from day care. The usual case is also that the parent picking up the children comes directly from work which means that they do not have access to the family’s central kitchen calendar. Mobile access to the information in these cases would be helpful.

It was obvious from the interviews that there is a discrepancy between how information technology is used in the preschool and how the interviewed parents used it in other parts of their lives. Information technology has only to a small extent entered the preschool while the parents were frequent users of for example email and the Web.

Another need that came up in the pilot study was that of communicating contact information to parents, both to other parents and to the preschool. The interviewed teacher reported that they now had posted phone numbers to all parents on the wall because it took too much of the teacher’s time to go into the office and find parent’s phone numbers when other parents needed to contact them. Parents also reported that they call other families when they have not been at the preschool for some time, to check if there is something they need to know when they get back.

5. METHOD
5.1 Our case - preschool
We are working with six different preschools in the Stockholm area, located close to each other and forming an administrative unit. They have about 300 children from 220 families divided into 18 groups to take care of and 60 teachers to do the job.

We have decided to use the child group as basic unit for the microcommunity, not the entire preschool. We believe that the child group will work better since that is a basic organizational unit for the preschool. Teachers only work in one child group and most of the activities take place within the group. Using the group as the unit for the microcommunity will also create a size that is easy to keep track of, between 40 and 50 people counting teachers and parents.

5.2 Users – teachers and parents
The average age of the teachers is 39.6 years and 12 experience working in preschool. We met all teachers at the beginning of the project and distributed a small survey about their mobile phone use to get a picture of their habits and experience and found out that all of them had a cell phone and used it for calls, and more than 90% of them used the phone for text messages. About 35% of them used their phone to surf the web, however very few of them did that on a daily basis. The results are displayed in table 1.

<table>
<thead>
<tr>
<th></th>
<th>daily</th>
<th>occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call</td>
<td>84.62%</td>
<td>15.38%</td>
<td>0%</td>
</tr>
<tr>
<td>Send text messages</td>
<td>59.62%</td>
<td>32.69%</td>
<td>7.69%</td>
</tr>
<tr>
<td>Surf the web</td>
<td>3.85%</td>
<td>30.77%</td>
<td>65.38%</td>
</tr>
</tbody>
</table>

Technical experience of teachers: large variations between individuals, those that finished their education fairly recently have had the option to include information technology classes such as web design, image processing in their teacher degree. The young ones have used computers all through school and are very comfortable with both computers and cell phones

The residential area in which the preschools are located is an upper middle class suburb of Stockholm populated with highly
educated, predominantly white people with high income. The parents that attended the parents-teachers meeting for their preschool took the same survey as the teachers. Average age for the parents were 37.1 years and each family had in average 1.4 children in preschool. Details are displayed in table 2.

Table 2. Cell phone usage of preschool parents.

<table>
<thead>
<tr>
<th>I use my phone to</th>
<th>Daily</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call</td>
<td>96.82%</td>
<td>3.18%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Send text messages</td>
<td>76.43%</td>
<td>23.57%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Surf the web</td>
<td>21.02%</td>
<td>33.12%</td>
<td>45.86%</td>
</tr>
</tbody>
</table>

We could see differences between men and women in the web surfing habits on the cell phone: 24% of the men used their phone to access the Internet daily, while only 7% of the women surfed daily from the phone. Also, 51% of the men stated that they used their phone to surf the web occasionally while only 33% of the women did that.

Both parents and teachers seem to surf more from their phones than the Swedish population in average. According to Statisticks Sweden, 12% used GPRS and 9% used 3G 2007 [10]. World Internet Institute report that 18% of cell phone owners (94% of Swedes have cell phones) use the phone for Internet in 2008 [11].

5.3 Introduction process

We put a lot of effort into presenting the project and our work to preschool teachers and parents to assure that everyone knew the purpose of the project and were aware of what was going on. We chose to introduce teachers to the project before we involved parents, partly due to how the opportunities presented themselves and partly because it is important to have the support of the teachers when introducing something to the parents. The teachers had conferences at the start of the semester which were good opportunities to present the project while parent-teacher meetings occurred mid-semester.

5.3.1 Introducing the teachers

The teachers were the first group to be introduced to the concept of building a microcommunity for each group of preschool children. The introduction was carried out in three steps, a short presentation of the project at the teachers startup conference, a longer presentation at each preschool when teachers had a planning meeting, and three workshops where one teacher per preschool created the microcommunity sites.

We introduced the teachers first since they “own” much of the information that need to be communicated, and because no system ever gets accepted if the staff is against it. In our case, the teachers were also the group that had the least experience with technology and needed more time and support to get started. Our parents in general were very familiar with computers and cell phone technology.

The first introduction of the project was a 10 minutes presentation at a teacher’s conference to all teachers from the six preschools. Approximately 60 teachers were present, as well as the two administrative managers. We focused on the goal of the project, to improve the information exchange between teachers and parents, and the organization of the project, division of responsibilities and funding.

The second part of the introduction was carried out at each preschool when the teachers had a planning meeting. We made a 15 minutes presentation of the background of the project, its goal, and its organization, and then demonstrated the tool we were going to use and a microcommunity site for a fictive preschool. Teachers asked questions and also provided their first opinions about the functionality of the microcommunity.

5.3.2 Introducing the parents

The first introduction of the preschool microcommunities to parents was made at a meeting where the administrative managers of the six preschools met with a parent representative from each preschool. The goal of the project was presented and a microcommunity for a fictive preschool was demonstrated.

The second part of the introduction to the parents took place at the parent-teacher meetings. Each preschool invited all parents to a meeting in their premises to inform them about the activities. We got the opportunity give a 15 minutes presentation and then demonstrate the prototype microcommunities for their own preschool. Parents could ask questions and suggest functionality that they would like the microcommunity to provide.
A follow up from the parent-teacher meetings were held at a series of meetings at the different preschools where preschool teachers and the administrative manager met with parent representatives from each child group. We gave an update on the project activities and parent representatives got the opportunity to communicate questions or concerns that had surfaced after the parent-teacher meetings.

5.4 Workshops
The microcommunities for the 18 child groups that were launched to parents were created by preschool teachers during three workshops where one teacher from each preschool participated. They were presented with the tool and templates for creating a mobile microcommunity for each group in their own preschool. The template contained suggestions on what information to enter but everyone was free to make their own design choices. Two extra sessions were held with teachers that could not attend the third workshop due to illness.

The workshops were chosen as a method since many of our teachers had little technical background and little or no experience of the mobile Web. To be able to give us design input they needed to understand how we intended them to work with a microcommunity once it was up and running, and they also needed to have a thorough understanding of how such a community would work when it was launched. First workshop mainly covered installation of necessary software on computers (java) and cell phones (microcommunity java client), creation of accounts, and testing that everyone had working access to the tool. The second and third workshops were focused on the creation of microcommunities based on a template we provided them with.

It was also important for everyone involved, teachers and parents, that it would work immediately. Teachers have little room for testing and experimenting on their working time, and parents have no time to look at a service that does not provide value. The workshops gave teachers three afternoons of paid working time while a temp took their place with the children, to learn and experiment with the creation of a micro community. After the workshops we had fully functional prototypes that we could demonstrate at the meetings with the parents and then open up for parents to start using them immediately after the meetings.

5.5 Technical challenges
The computers that the preschools had at their disposal when the project started were old and slow, but all preschools had laptop computers that the teachers could bring to the workshops. We had project funding to buy new computers so that each child group would get a new machine, laptop or desktop, whichever suited their needs the best. However, the administrative process to get them ordered and installed took so long that we had to carry out all three workshops with the old computers.

The project also bought cell phones for each child group. Previously, each preschool had a cell phone but since most activities where they leave the premises take place within the child groups the phone was rarely used. A phone for each group makes it possible to benefit from a cell phone in a natural way.

In the meetings with parents we have encountered problems with installing the java client for the microcommunity on the cell phone. Usually we could help them, but since we do not have any control over which phones the parents have, problems can occur.

6. USER FEEDBACK
We have received user feedback from both our user groups, preschool teachers and parents.

6.1 Common issues
One of the first questions about functionality both from teachers and parents concerned reminders. Teachers wanted to know if it would be possible to give parents notification via audio, text message, email or other means for example when a new message was added to the notice board or when something out of the ordinary was about to happen. Parents wanted to know if they could get a reminder for example when preschool closed early and they had to pick up their children earlier than usual (happens once a month). Both teachers and parents thought that prompting would be more efficient than relying on people remembering to check the microcommunity calendar or noticeboard.

Another issue that was brought up both by teachers and parents concerned privacy and the protection of personal information such as telephone numbers and home addresses. Teachers valued the opportunity for parents to be able to find each other’s contact information in the microcommunity since they spend a lot of time in the afternoons helping parents that ask for other parent’s phone numbers. On the other hand they were highly aware of the regulations that apply to personal information on the Internet. By Swedish law, it is not allowed to make personal information public on the internet without consent, and the preschools have routines for how they handle contact information.

6.2 Teacher feedback
The tool creates a tab-based user interface and the provided template contained six pre-specified tabs named notice board, schedule, children, menu, and information. The notice board tab would allow both teachers and parents to post notes, the schedule tab would contain information about the daily activities, the children’s tab would contain a list of the children possibly with contact information to parents, the menu tab would contain the menu of the week, and the information tab would contain contact information to the preschool and to the teachers. Teachers were free to change or remove tabs from the template, as well as adding any number of new tabs.

Teachers had many suggestions on other types of content that would be useful to add to the microcommunity. For example they added new tabs for projects, a calendar with important dates, the monthly letter to the parents, and the parent-teacher council.

A concern that was frequently expressed by the teachers was that they had trouble understanding how the microcommunity would look when parents logged in, and how it would look in the cell phone. The teachers worked in an administrator user interface where they had access to functionality for updating the content and changing the structure of the microcommunity. Parents would log in as regular users and not have access to the admin functionality. This caused some problems for the teachers in the beginning. A frequent question was “what will the parents see?”.

Teachers also gave us invaluable information about how working with the tool would fit into their normal workday. The prototype tool for creating the microcommunities sometimes run slowly on the teacher’s fairly old laptop computers, and it occasionally kicked them out forcing them to log back in, and at times it crashed. Teachers told us that in an ordinary work day they might
have ten minutes to update the information in the community. If
the tool is not working smoothly those ten minutes are gone and
will not come back maybe until next week. There is no time for
technical failure in their busy work day.

6.3 Parent feedback
Parents also brought up concerns about having their contact
information posted in association with their children. However,
they liked the idea of having access to other parent’s contact
information and suggested several ways of doing this while
minimizing the exposure of their children. For example, they
suggested only putting the first name of the children in the
children’s list, only putting phone number as contact information
and not the home address, and only adding first names of the
parents. All this to allow families to contact each other while
avoiding that non authorized persons could find them.

In this context various kinds of log in procedures were of course
discussed with their pros and cons. Many parents strongly
advocated password protection while others found logging in
tedious and slow especially on the cell phone. Needless to say,
parents need to opt in to be a part of the microcommunity. No one
will be included in the community without prior consent.

Many parents wanted to know if the calendar of the
microcommunity could be synchronized with the calendar in their
cell phone, or with the calendar application that they run on their
PC.

7. PRINCIPLES
Based on the user feedback from workshops and meetings with
parents, we distilled a set of principles that we used during the
design work that followed.

**Design specifically for the domain** – our experience was that
general purpose tools did not work very well for our users. They
needed guidance and support rather than expressive power and
flexibility. Having a template to start from was of essence even
though most teachers became comfortable with adding or
removing things from the template during the three workshops.
We decided to create a tool specifically targeted for preschool
microcommunities to minimize sources or confusion and errors.

**Low thresholds** – The fact that teachers in general have very little
time for administrative tasks, in combination with the fact that
many of them have little technical experience makes it extremely
important that it is easy to get started with the microcommunity
and that the maintenance works smoothly without technical
problems. Parents do not have a lot of time either and it was
obvious that both our user groups had little interest in the
experimenting part of our project. To engage them in trying out
the microcommunity it was essential to have a fully working
prototype very early in the project. Neither parents nor teachers
were willing to invest time in trying out something that they did
not find useful from the beginning.

**Low intensity** – for both teachers that are updating the
information in the microcommunity and for parents who are
consuming it. We decided to consider the microcommunity as a
source for information that is relatively stable, for example
changing on a weekly basis such as the menu. Information that is urgent, such as a child that is sick and needs to be picked up by a parent, will be communicated through other channels such as telephone or face to face communication. This was decided since we did not want to burden teachers with too frequent updates or the parents with too frequent lookups. If users find the microcommunity to be useful for more volatile information, that kind of functionality can be added later.

**It is personal** – it does not get more personal than your children. Even though both parents and teachers have been positive to the concept of a microcommunity for preschool, privacy and the security of contact information has been a frequently raised concern. In all settings that involve children it is extra important to assure that no information end up in the wrong hands. Preschool have routines for handling personal information about the children in a secure way and those principles will be applied to the microcommunity. No information about any child will be published in the community without the consent of the parents.

**Bridging the technical gap** – there are huge differences in how our users use technology in their lives. Even though there are large variations within each group, our initial surveys and the pilot study suggest that the parents are using more information technology than the teachers. It is important that the microcommunity works for all types of users, in that it is easy to use for novices and still is advanced enough to provide useful information for the whole user group.

**8. NEW DESIGN OF THE TOOL**

Based on the feedback from workshops with teachers and meetings with parents and the principles we distilled from that process, we designed a new version of the tool for creating microcommunities.

The new version was designed specifically for the creation of preschool microcommunities and provides a default template with few options to make it as easy as possible to create a new community. The tool provides a user interface with six pre-specified tabs for a regular web-based community and a mobile community site. The standard tabs are notice board, schedule, calendar, children and contact information, menu, and information about the preschool. It also provides possibilities to specify two extra tabs for whatever users want. The tool automatically generates a mobile version of the community. By creating a dedicated tool for preschool microcommunities we eliminate choices that are possible sources for errors, such as finding and choosing a template for preschool among other templates.

To keep maintenance as simple as possible, the tools offer teachers to add information in advance. For example the tool always shows the menu of the current week, but menus for coming weeks can be added in advance and will then be shown on the right week. Events that have passed is automatically removed from the calendar to avoid cluttering and to make it clear which events that needs attention at the moment. Parents are responsible for entering and updating their own contact information so that teachers do not have to focus on that (see below for more details on contact information). The tool also provide possibilities to have several schedules and switch between them. For example in cases where preschools have a two week cycle for their activities they can have two different week schedules and switch between them instead of changing it every week.

The microcommunity is password protected by default, both on the regular web and on the phone. Parents have individual accounts and passwords. Teachers can also mark tabs in the user interface as private, which means that they are not searchable outside the microcommunity. The individual accounts allow parents to keep the responsibility for their own contact information. They choose themselves what personal information they want to enter and make accessible to teachers and other parents. That way they can choose how available they want to be, and also relieves teachers from the work with updating contact information.

We also decided not to implement anything in the new tool that depended on java. Our experience is that the computers in preschool rarely have java installed, teachers not always have the administrative rights to install software on the computers, and they do not always feel comfortable doing it. Installing software on the computers can also create conflicts between teachers and computer support staff that have been known to withdraw support if new software has been installed.

We did not have time to implement automatic reminders in the new version of the tool, but to meet the requests for reminders from parents and teachers we made manual trials with email reminders to demonstrate how reminder functionality could work. Two trials were made in November 2008, one reminder for a day when preschool were closed because teachers were on education, and one reminder for the monthly early closing due to planning. The reminders were designed as if they were automatic reminders from the microcommunity. The one about the education day were sent three days in advance and the one about early closing were sent one day in advance. Due to the tight schedule we cannot report any formal evaluation of the manual reminders here but the feedback from parents and teachers have been positive.

**9. FUTURE WORK**

Future work in the project with microcommunities for preschool will contain both technical activities to further develop the tool, and evaluation activities to follow the launch and use of the community by teachers and by parents.

The first activity of our technical future work with microcommunities for preschool will be to implement the automatic reminders that all users have requested. It should be fairly straight forward once parents have access to the community and can provide contact information. We will start with email reminders since they are not associated with any cost, and then continue with text message reminders which in general are more direct and reach people in other situation than when they are by a computer. The best option would be if the java client for the microcommunities could generate a sound but due to technical variations between cell phone brands and models, that will not be possible within this project.

We will also look at ways of sharing parts of microcommunities between child groups. Since the groups at a single preschool have some information in common we will investigate structures for allowing them to share those parts to avoid that they must be added and updated in three or four different communities. That
creates unnecessary work and introduces risks for inconsistent information. The sharing of information between communities need to be coupled with mechanisms for assigning, or sharing, responsibility for updating. We will keep the child group the basic unit for the microcommunity though.

The new version of the tool was released to teachers in November 2008, and during the following months we will focus on supporting them in their use of the new tool. The need some time and help to adjust to the new design and new functionality, but also to find routines for the regular update of community information. A trial period is needed to assess how much time they need to assign to this task, and to find sustainable ways to fit that into their daily or weekly work. Initial findings suggest that a weekly update might be sufficient and teachers have suggested that they could fit that into their weekly personal planning time at work.

During spring 2009 we will also conduct an evaluation of the microcommunities with parents and teachers. We will use log data to monitor how parents access the microcommunities and complement that data with interviews to get their feedback on the utility and usability of the microcommunities, as well as their general feelings about the concept. Further workshops will be held with teachers to get their continual feedback on the tool, but also to gather the feedback that teachers receive from parents about the microcommunity. We are of course also very interested in what impact teachers perceive the microcommunity to have on their own work, reducing work, creating work, improving the contact with parents etc.

The concept of microcommunities for exchanging information has been introduced in preschool as described above, and the next step is to expand it also to embrace school. Initial contacts have been taken with a school south of Stockholm to identify their needs and map them to the tool designed for preschool. Introducing microcommunities in school brings a new user group into play as the children concerned are getting old enough to participate. Creating a community for children, parents, and teachers presents an interesting challenge.

10. CONCLUSIONS

We have worked with preschool teachers and parents to create a first version of microcommunities for preschool. Through workshops with teachers, and meetings with parents we have gathered input on what kind of information that would be useful to incorporate in a preschool microcommunity and how a tool for creating and maintaining such a community should work. Our experience is that although there are large individual variation, preschool teachers have little education and experience with information technology. They need tools that are very easy to use and that are robust since they have little time to deal with technological failure. Parents are more used to technology.

Based on those experiences we designed a tool specifically to create microcommunities for preschool. That way we can provide teachers with a standard design for a preschool community. They can easily get started and even though they have some opportunities to customize their site there are few choices to make. The content in the standard design are heavily based on the input we got from teachers and parents on what they would like to find in the microcommunity. We have also made manual experiments with email reminders since reminders in general were the most required functionality both from teachers and parents. We did not have time to fully implement reminder functionality but did the manual trials to demonstrate as quickly as possible how it could work.

11. ACKNOWLEDGMENTS

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12. REFERENCES