ABSTRACT
This chapter looks back on and reflects over the mobile use of an online community for Swedish teenagers, an early social media, and discusses its relationship to current social media. Analysis of two months of log data and 100 surveys on teenagers’ phone use showed that the phone use mostly took place during times of the day when teenagers had social time and was not influenced by the availability of a computer. The phone made the community access more private compared to the computer, but teens did share the use when they wanted to. The cell phone bridged the online and offline social communities and allowed teens to participate in both at the same time. The online community was not only a place for social activity online, it was also a social activity offline that was carried out face-to-face with friends.

Keywords: Internet Use, Cell Phones, Social Media, Log Data, Online Community, Rhythm, Third Places, Teenagers.

INTRODUCTION
Social media have become some of the most used digital services of our time, with Facebook and Twitter as perhaps the most iconic examples used daily from mobile devices by hundreds of millions of users. It is sometimes difficult to believe that that this has not always been the case. Just a few years ago we did not Facebook or Instagram all our social events. Since the first analysis of our data there has been a tremendous development of social media and mobile phone handsets. Therefore, we believe that the strongest contribution of this chapter is the perspective of how early social media was used on the mobile phones of the time, how quickly things have moved forward since, and that we can see the beginning of many trends when we look back. Looking at our results with the perspective of today, we would argue that it maybe tells us even more about its time today than what it did when we collected the data and analyzed it. Now it is much more obvious that this pointed in the direction where social media and current smart phones took us. To a frequent use of social services from mobile devices, to long periods of fiddling with our mobile phones on the couch, oblivious to our surrounding. We had no idea this would come when we started analyzing our data in 2009, but in retrospect the material show where the development was headed. Teenagers have often been early adopters of mobile technology, and many research studies have focused on their use of voice calls and text messaging, for example, (Grinter & Eldridge, 2001; Weilenmann & Larsson, 2001). The mobile phone has been shown to support teenagers’ privacy (Ling & Yttri, 2005) and to provide a means for absent teens to participate in social gatherings with friends (Ito, 2003). In 2008, we wanted to complement this body of research on teenagers’ cell phone use with a study of their mobile use of an online community. The purpose of this work was to inform design of future mobile services through the study of a large user population and a frequently used service. At the time, Facebook was in its infancy and not open to users from Sweden and the iPhone had just barely come out and started to transform our understandings of what the mobile phone would become. Cell phone penetration in Sweden was 100% in almost all age groups, but mobile internet use was not frequent, especially not among teenagers.

We set out to study the mobile use of Playahead, an online community for Swedish teenagers. Playahead was chosen since it was an established community that had provided mobile access for more than five years and thus had a large community of experienced mobile users. Two months of log data from 2008 and 2009 was analysed with regard to the use rhythm; and 100 surveys collected to gather information on use situations.

The use rhythm served as a foundation for exploring the relationship between Internet access from cell phones and location, computer access, and privacy. Here, the rhythm of user actions not only reveals the temporal pattern of teenagers’ Playahead use, but also informs us on their social and spatial context.

Our findings from log data show that the cell phone use rhythm reflected the day with low activity during the night, a rise in the morning and during the day, and a distinct peak in the evening. Week days and weekends differed from each other. Surveys show that Playahead users often accessed Playahead from the phone together with friends. The cell phone allowed them to participate and be active at an online third place at the same time as they were active in an offline third place. Thus,
accessing Playahead from the cell phone was not only a way to get access to the online third place, it was also a social activity carried out face-to-face with friends.

**PLAYAHEAD**

Playahead was an online community with mostly teenagers as users. The community was available as a regular web page and as a small Java application for cell phones. We chose Playahead for this study since its mobile solution supported most phone models available at the time of the data collection and thus made it available for its whole user population. The other large online community for Swedish teenagers at the time, Lunarstorm, had less support for the variety of phones and was therefore not included in the study.

Insert figure 1 here

**Figure 1: Screenshot of a personal profile for the desktop web page of Playahead**

The regular web site provided standard functionality such as personal presentation, guestbook, buddy list, search functions, discussion forums, blogs, and chat rooms (see figure 1). Users could upload photos and videos to their profile and even add background music. They could also post short messages that were displayed to all logged in users as small banners at the top of the site. Awareness support was provided such as lists of logged in users that could be filtered, highlighting of logged in friends in the buddy list, and indications on users that were logged in from cell phones. It was even possible to see what other logged in members were doing. By putting the mouse over their user name a pop up message would reveal what they were doing, for example, “xyz is reading her guest book”. The mobile application provided a subset of the web site functionality: a personal presentation, guestbook, messaging, buddy list, and a search function (see figure 2). Users could read and post to guest books, chat, and look at profiles but not edit their own profile from the cell phone. Data intensive features such as photo albums and video clips were not available through the phone client. The phone application provided audio notification when messages arrived if users were logged in.

The web based site was founded 1998 in Helsingborg, Sweden, and rapidly became very popular. Playahead got its primary revenues through advertisement on the site. Basic membership was free, though different add-ons were sold, so-called VIP-membership.

Insert figure 2 here.

**Figure 2: Screen shots of a Playahead guest book (left) and a chat room for a phone (right)**

**RELATED WORK**

Teenagers’ cell phone use has been the focus of many research studies, for example, (Boase & Kobayashi, 2008; Grinter & Eldridge, 2001, 2003; Jung, Persson, & Blom, 2005; Kasesniemi & Rautiainen, 2002; Ling & Yttri, 2005; Miyaki, 2005; Weilenmann & Larsson, 2001). The mobile phone has been shown to give teens privacy by allowing them to communicate with friends without having to go through parents and the family landline (Ito, 2003) as well as a possibility to get around family rules by communicate with friends in secret after bed time (Ling & Yttri, 2005). Weilenmann and Larsson (2001) showed that teens’ phone use is highly social and that phones are shared. Text messaging allows absent teens to participate in social gatherings with friends, called augmented flesh meets (Ito, 2003). Our study adds to this research body on teenagers’ cell phone use by investigating their mobile use of a social networking site. Teenagers are frequent users of social networking sites (Husson, 2007; Quinn & Oldmeadow, 2013) but little is known about their mobile use of such sites. We believe this could also contribute to the general research body on social networking sites which has mostly focused on adult users and stationary use settings (e.g., Burke, Kraut, & Marlow, 2011; DiMicco et al., 2008; Joinson, 2008; Lampe, Ellison, & Steinfield, 2008; Semaan & Mark, 2012; Zhao & Rosson, 2009).
The cell phone penetration in Sweden was very high already in 2009, 96% of the population had a cell phone (.SE Internetstatistik, 2009). In the age group 9-14, 95% had a cell phone, and in the age group 15-24, 100% had one (.SE Internetstatistik, 2009). However, contrary to the use of text messages, where Swedish teenagers were early adopters, Internet from the cell phone was not immediately embraced by the teenagers to the same extent as text messaging. Among teenagers, less than 10% used their phone for Internet in 2010 (Findahl, 2010) which was slightly after this data was collected. This has changed dramatically since then. In 2014, 80% of Swedish teenagers accessed the Internet from a smartphone on a daily basis and more than 60% used social media frequently (Findahl, 2014).

It has been argued that third places, places outside home and work where people meet and socialize such as cafés and bars, can exist online (Steinkuehler & Williams, 2006). Third places were described by Oldenburg (1997) who defined eight criteria for them:

- neutral ground - people are allowed to come and go as they please to a third place, no invitation is required,
- leveller – people’s outside social or professional status is of no importance in the third place,
- conversation is the main activity in the third place,
- accessibility – friends or acquaintances can always be found in the third place,
- regulars – the third place have regular visitors that contribute to the ambiance,
- low profile – the physical space is not the focus of attention, usually a third place does not have spectacular decoration but rather a worn down profile,
- playful mood – most conversation concern light topics and other activities are for entertainment,
- home away from home – third places provide a home away from home.

These criteria from Oldenburg were defined before social networking sites became a strong influence in our daily lives. In addition, maybe these criteria to some extent reflect a nostalgic view of past times, where people lived in small communities and gathered at the local café or pub in the evening. A local café would indeed provide neutral ground, where the main activity is conversation, there are regular guests, and the mood is playful. It would probably also have a low profile and provide a home away from home. However, even if anyone were allowed to come and go as they please, it seems a bit utopian to believe that social or professional status were completely irrelevant even in such a setting (at any point in history), and most cafés have opening hours that restrict the accessibility of “always” finding friends or acquaintances there. For teenagers, other typical third places would be parts of school where after school activities takes place or community centres rather than bars.

Many online worlds and communities do fulfil some of these criteria, and sometimes even better than traditional, physical third places. For teenagers, online third places might be more accessible than physical ones since teens often are required to be home at certain hours and in general have parental restrictions on their whereabouts. Playahead and other online communities can offer available friends or acquaintances at any time of the day since they usually draw participants from a much wider area than local physical communities and are open 24/7, and the communication or other traces of participants are persistent so that people who log in can see what has happened when they were offline. A vivid conversation can take place even if all participants are not logged in at the same time. This persistence also gives regulars even more opportunities to put their mark on the place. Thus online communities as third places can be said to have higher accessibility than physical third places.

When it comes to social and professional status, online communities are not a better leveller than physical third places. In its infancy, the Internet was said to treat everyone equal and provide a place where social status was not important. However, this has changed since Internet now is a tool for building reputation, marketing, and many other purposes. The ability to post pictures and video clips means that we online are judged not only by what we say but as much by our appearance and image, much as in the physical world. Moreover, online communities might offer their participants more
freedom in presenting themselves, and sometimes deceiving their online surrounding. People do lie online (Hancock, Toma, & Ellison, 2007) just as they do offline, but as online and offline networks become more and more overlapping the risk of lies getting exposed increases. Online communities also deviate from the definition of physical third places on some points. For example they cannot offer a home away from home in a physical sense, only a mental refuge which might be important in many cases. Moreover, Steinkuehler and Williams (2006) have shown that online games to a large extent fulfil the criteria of third places but deviates heavily in their visual profile. There is nothing low profile in the design of many online game worlds.

**METHOD**

We have mined log data of the mobile use of a teenage online community in this study. This gives us the opportunity to study a large user population and see stable patterns in the use. However, logs give no information about users’ motivation for using a service, how they experience it, or what benefits they get out of using it. To complement log data with some subjective and contextual information we conducted a survey.

**Users**

Playahead users were predominantly in their lower teens, 78.5% aged 13-16, 15.7% aged 17-19, and 5.5% older than 20. The gender distribution is fairly even with 52% female users and 48% male users on the web site. This gender distribution was supported by our logs from the mobile use where 51.9% of the users were female and 48.1% male.

**Data**

Playahead provided us with two months of log data of the mobile use of the site, September 2008 and January 2009. The material contained more than 13 million user actions on the mobile site generated by more than 10000 unique users (Playahead has asked us not to disclose exact numbers). We also received profile data for the users of the mobile site. The logs contained time stamp, user id, and activity name. User profiles contained user id, age, gender, place of residence, and number of friends. We did not get users’ profile names which meant that the authors could not match log data to actual users or any other information users chose to add to their profile such as pictures or presentation text. The material contained 23 different logged activities in the September log, and 28 activities in the January log. Only the 23 activities present in both data sets were considered for this paper of which two activities were triggered by the system. This left more than ten million logged instances for analysis. Figure 3 shows the use frequency of the 21 user triggered activities. The activity generated by automatic test users used by the support staff was discarded to avoid bias in the analysis.

We did not receive log data for the activity on the regular Playahead web page and will therefore not be able to compare the user activities of the web with those of the mobile client here. Moreover, our data did not contain the “content” of user actions such as the text of their messages, and not the recipients. Finally, we do not have any information about the cell phone models of users so we cannot draw any conclusions about how their phones might have affected their behaviour.

Insert figure 3 here

*Figure 3. Activity frequencies for user triggered activities*

**Survey**

An online survey was distributed to complement the logs with some user data. Mobile users were contacted through the internal email on the Playahead web site and received a link to the survey. 100 users took the survey, 60% females and 40% males with the average age 15 (min 11, max 24). The questions in the survey covered location, computer access, to what extent users access Playahead together with friends, and what type of cell phone subscription users had.

**ANALYSIS OF LOG DATA**

The concept of rhythm has previously been used both to understand user needs and as a basis for system design since it provides information on social practice, routines, and context. For example, Reddy and Dourish (2002) showed that the different work rhythms in a hospital supported the staff in finding the information they needed, Johnson-Lenz and Johnson-Lenz (1991) used the various
rhythms of a group to inform design of groupware, while Begole, Tang and Hill (2003) used the work rhythm of workers to predict their availability to remote colleagues. Here, the mobile use rhythm of Playahead will serve as a tool to characterise the use and inform us about use context. The daily rhythm of the mobile use of Playahead has been calculated for the total number of user actions. Figure 4 shows the percentage of activity that took place during each hour of the day, e.g., 6.2% of all the user actions in our log material took place between 12am and 1am on weekdays. The daily rhythm is computed from user actions only. Automatic system updates were removed since we wanted to know when users actually interacted with Playahead using their phones. The general rhythm of the user action maps well to the daily social rhythm with low activity during the night, a rise in activity in the morning, stable activity during the day, a slight increase in the late afternoon and early evening, and a peak in the late evening. This is similar to the message rhythm of the DeDe (Jung et al., 2005) system, which is interesting even though their user group was much smaller than ours. Böhmer, Hecht, Schöning, Krüger, & Bauer (2011) also found a similar pattern for social apps with a peak in the evening. Since our log material only contains user activity from cell phones and not the regular web site, we were surprised to see that the rhythm did not reflect the time of day when users lacked access to a computer. To investigate this further we split the data into logs for week days and logs for weekends.

Figure 4. User activity on week days and weekends

The Rhythm of Weekends and Weekdays
In separating the data in logs from weekends and logs from week days, we removed a few week days in the beginning of January since they were school holidays for some parts of Sweden and regular school days for other parts. To be sure that all weekdays in the material were school days, weekdays between 1 and 12 January were removed. Weekends and bank holidays during that period were kept. This left us with data from 37 week days and 19 weekend days or holidays in total. In figure 4, we can see that the rhythm of the user activity of weekends is similar to that of the week day activity. However, the graphs are slightly shifted in time. In weekends, user activity started later in the morning, the evening rise of activity started later, and the evening peak occurred later. This is easily explained by teenagers, as well as adults, getting up later in the morning and going to bed later in the evening in weekends that in week days. The weekends show higher activity during the morning and mid-day, when teenagers have fewer restrictions in their activities compared to school days. Moreover, the evening activity starts earlier on weekdays, probably due to an increased social activity after the school day. The morning rise could be due to travel to school and work, using Playahead from the phone to kill time, but a large part of the evening peak probably took place at home. The rhythm can be interpreted as if Playahead users did not only use their cell phones to access the community in situations where they had no access computers available. This will be further elaborated on below.

ANALYSIS OF SURVEY DATA
The rhythm of the mobile use provides a good start for a discussion about where users were and if they had computer access when they logged into Playahead from the phone. Since the log data does not give any indications about that, we used the survey to inform our analysis.

Location for the phone use
In the survey, we asked in what locations respondents used Playahead from the cell phone.

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transportation</td>
<td>81%</td>
</tr>
<tr>
<td>School</td>
<td>79%</td>
</tr>
<tr>
<td>Outdoors</td>
<td>76%</td>
</tr>
</tbody>
</table>
Table 1 shows the survey result for locations. Two of the top locations, public transportation (81%) and outdoors (76%), can be considered as traditional contexts for using cell phones for access. In school (79%), teenagers had access to computers but limited possibilities to use them for private purposes such as Playahead which made it natural for them to use the phone for access. On the fourth place, 66% responded that they used the phone to access Playahead when they were at home. We believe that this number could be considered as a conservative estimate since people often are not aware that they use their phone for Internet at home or in other situations where they have computer access (Nylander, Lundquist, & Brännström, 2009).

Using mobile devices to access the Internet or watch media content at home is not uncommon, as shown by Nylander et al. (2009) and O’Hara, Slayden Mitchell, and Vorbau et al. (2007) respectively. Nylander et al. (2009) found that their participants often found it easier and quicker to use the cell phone to check email or news even when they were at home and had a computer available. They usually had the phone nearby, it was always connected, and frequently had bookmarks and shortcuts that took them to the preferred content with a single click. O’Hara et al. (2007) found that the mobile device made it possible for users to watch video and still participate in the social situations at home, for example, when younger siblings were watching TV. In the same way, we believe that the cell phone allows teenagers to keep track of what is going on at Playahead and still participate in family activities at home or activities with friends.

The rhythm diagrams provide support to the survey data on cell phone access to Playahead at home by showing that a large part of the user activity takes place in the evening. In weekdays, the activity peaked between 10pm and 11pm, and in weekends it peaked between midnight and 1am. This can be interpreted as if a lot of cell phone use of Playahead took place at home, since 78% of the users are younger than 16 and can be expected to be at home after 10pm on a school night.

The use of the cell phone in the home, as described in previous work and suggested by our data, shows that the phone is not only a complement to the computer that is used in situations without computer access. Rather, the phone opens up new possibilities and new forms of use. We will elaborate on this in the following sections on computer access and privacy.

**Computer access and phone use**

Since we have good reason to believe that a substantial part of the cell phone use of Playahead took place at home, and a majority of Swedish teenagers have Internet access at home with 61% of the 9-16 year-olds having their own computer in their room (Medierådet, 2010), we found it interesting to investigate the relationship between cell phone use and computer access through the survey. Among our survey respondents, 98% had access to a networked computer at home, and 60% had their own computer.

Table 2. Reasons for choosing the phone to access Playahead when a computer is available (multiple answers allowed)

<table>
<thead>
<tr>
<th>Reason for not choosing the computer</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Someone else using the computer</td>
<td>61%</td>
</tr>
<tr>
<td>Too lazy to start the computer</td>
<td>53%</td>
</tr>
<tr>
<td>Cell phone was closer</td>
<td>46%</td>
</tr>
<tr>
<td>Always use the computer</td>
<td>19%</td>
</tr>
<tr>
<td>No one can watch me on the phone</td>
<td>15%</td>
</tr>
<tr>
<td>Not allowed to use PA, phone gets around that</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
</tbody>
</table>

In the survey, we asked in what situations respondents chose the phone for accessing Playahead even though they had access to a computer. Table 2 shows the results. The top reason was someone else.
was using the computer (61%), which means that in practice they did not have the possibility to choose the computer as device of access. The two following reasons are connected to convenience, too lazy to turn the computer on (53%), and the phone was closer (46%). Comments in the survey emphasized that respondents wanted continuous access to Playahead and that they phone suited their purposes for this.

“I’m really addicted to Playahead in the phone, you can’t really carry a computer around all day, right?” (survey comment)

This shows quite clearly that teenagers did not resort to the phone for accessing Playahead only when they had no other option. To them, the phone was one way of accessing their community with advantages and disadvantages just as any other way. The phone had its own role in the use of Playahead and was not a backup solution for the computer. This is in line with previous research on adult users’ web access from phones. Nylander et al. (2009) showed that the phone was often chosen over a computer since it was a quick and simple way to get online being always on and usually kept nearby.

One factor in this could be the payment models for internet use on the phone. Ninety-eight percent of the survey respondent reported having free internet access on their phones, which mean that cost was not an issue when choosing the phone. Moreover, in the case of teenagers and Playahead the phone also offers a degree of privacy that the computer cannot give. It is easy to hide a phone, and from the survey results it seemed like the phone was not subject to parental control to the same extent as computers. This will be discussed further in the next section.

Privacy

It is more private to use a service on the phone compared to the computer in general. The phone is personal to a higher degree than a computer, and not many Swedish teenagers share their phone with other family members. Moreover, the screen size of the phone makes it difficult for bystanders to see what is going on and it is fairly easy to conceal a phone. In our survey, 15% of the respondents report that they sometimes used the phone when they had computer access because no one could see what they were doing.

The cell phone can also offer a degree of secrecy, in that teenagers can use services on the phone that parents do not allow them to use on the computer. In the survey, 6% report that they were not allowed to use Playahead but with the phone they could get around those restrictions. One respondent claimed that he really liked to use Playahead from the phone because his parents did not allow him to use it. Since he had free Internet access on his phone, they did not notice.

“I like PA in the phone, especially when I’m not allowed to use it at home, and it’s free, so my parents don’t notice that I’ve used it.” (survey comment)

These survey results, in combination with the log data which show that Playahead was used a lot in late evenings, suggest that the cell phone offers more privacy, and sometimes even secrecy, than the computer. Ling and Yttri (2005) and Grinter and Eldridge (2001) studied Norwegian and British teens respectively, and found that the teenagers created extra time to talk on the phone or send text messages to friends by using the cell phone in bed after bed time without their parents’ knowledge. Our data show that online communities are used for the same purposes. The fact that a majority of our respondents had free internet access on their phone subscriptions helped to conceal their use of Playahead, since ever so frequent use would not influence the cost and thus not draw parental attention.

An online third place and a social activity

Our results confirm that participants did not only access Playahead when they were with friends, they were sharing Playahead with their friends. In the survey, 25% responded they often invite their friends to look at Playahead on the cell phone together with them, and 50% responded they sometimes do this. This adds to previous research on other types of cell phone applications where Weilenmann and Larsson (2001) have shown the highly social use of text messaging among Swedish teenagers, who often looked at each other’s phones, composed messages together and even borrowed each other’s phones to send messages. Olsson, Soronen, & Väänänen-Vainio-Mattila (2008) found similar behaviour for pictures taken with cell phones. In our survey, 32% responded that they sometimes borrowed a friend’s phone to access Playahead. The cell phone is a personal device in the sense that
most Swedish teenagers have their own phone, but sharing of the phone is common in the situation of the use.

Playahead fills many of the criteria for third places, as many online communities do. For example, it is clear from the user actions (see figure 3) that the main activity on Playahead is conversation in different forms. Phone access might even be more centred on conversation since the regular web page offers other, non-conversational activities such as photo albums, radio channels and games which are not present in the phone user interface. The activities on Playahead are continually ongoing, which is a strong motivation for users to come back. Something new could happen anytime, which means that it can be worth logging in again even if the last login was only minutes ago Nylander et al. (2009).

Online and offline third places are not separated from each other. Castronova (2005) argued that actions in virtual worlds such as massively multiplayer online games are connected to the real world and affect it, for example, economically through the sale of virtual objects and avatars. In the case of Playahead, it is easy to see actions in the online community causing social effects in the real world. Even though users might not have their full name as user names, they mostly act as themselves in the community and often interact with people they frequently see in real life. Writing interesting gossip online will most certainly spark offline discussions and misunderstandings or offending comments will affect offline relationships. As the events go on in parallel in the online and offline world, none of them taking a break when users check in to the other, teenagers try to combine them. The cell phone becomes a tool for participating in the online and offline world at the same time. This has strong support from the use rhythm, which shows that online conversation happens in the parts of the day where offline conversation is likely to occur.

Seeing Playahead both as a place and an activity makes the parallelism easier to handle. The use rhythm described above shows that participants often accessed Playahead during times of day when it is likely that they were together with friends or family. The survey results confirm this: 31% respondents often used Playahead when they were with friends and 64% sometimes used Playahead with friends. This leads us to believe that Playahead is not only a third place, a place for socializing; its mobile use is also a social activity that teenagers do when they meet face-to-face. Comments from the survey respondents support this. For example, one respondent reported that she used the phone to stay in constant contact with people logged into the phone chat rooms.

“I’m in to stay in contact with the people logged into the chat rooms” (survey comment)

The fact that Playahead is not only an online place for social activity but a social activity among friends that meet face-to-face suggests a strong connection between the online and offline activity.

**DISCUSSION**

Playahead offered an online third place where teens can socialize with in real life friends and online friends. The activity on Playahead is parallel to the activity in offline third places, and the cell phone offers a means to combine online and offline. Recent studies have showed that the phone is still playing a role in connecting the online and the offline (Brown, McGregor, & Laurier, 2013; Brown, McGregor, & McMillan, 2014).

The cell phone also turns Playahead into an activity in offline third places, something friends do together when they meet. This has been shown to hold also for other activities such as mobile search, which through the phone becomes a part of the offline activities (Pielot, Church, & de Oliveira, 2012). The possibility to combine online and offline third places of course has both pros and cons. The online world can enrich the offline world by allowing teenagers to keep a large circle of friends and by bridging the limits of time and distance. However, the asymmetry in social norms between online third places and offline third places can be problematic. People are often less inhibited online, thus online actions can cause conflicts or bad feelings that would not occur in offline interaction and that can be difficult to handle. If someone gets offended online, it is easier to be rude in return online, than demanding an apology in a face-to-face situation. The combination of online and offline third places could also create more social control and provide an efficient area for bullying.

As in other third places, the main activity on Playahead is conversation, even though it is a text-based conversation and in our case mediated by the cell phone. We believe that teenagers’ experience from text messaging help them make an easy transition to a service such as Playahead. They are very experienced texters, we already know that a majority of Swedish teenagers send text messages daily, and to them Playahead is a natural extension to text messaging. This is well reflected in our material.
However, in the Playahead data we not only see the asynchronous text communication, at Playahead represented by the guestbook entries and the email messages, but also synchronous communication in the chat rooms. Sending a chat message from the phone was the second most common user action and constituted 13.46% of the total user activity. Obviously, the teens felt comfortable enough with text input to use it in a real time chat that is more time critic than the traditional phone text messages. Almost a third of the users, 29.8%, had sent at least one chat message. Writing in the guestbook was only number twelve in the list of user actions and constituted 2.14% of the total user actions. This still meant that more than 100,000 guestbook entries were written during our data collection period and 49.2% of the phone users wrote at least one entry. We conclude that the Swedish teenage user group has no problem with text input on cell phones, and that even such input heavy functionality such as real-time chat works fine on cell phones for them. This is interesting since recent results reveal input as an important source for frustration for information workers with high end smart phones (Karlson et al., 2010). Input is considered differently in various user groups.

One reason for the large amount of text communication on Playahead could be that a majority of our survey respondents reported having cell phone subscriptions where the Internet use is free. In the survey, 98% reported that their Internet use on the phone was free. This means that chat messages and guestbook entries could be a way to communicate with friends without charge, since most subscriptions charge for text messages (though, in Sweden only the sender is charged, not the recipient). Mobile devices have not only made it possible to access the Internet in places previously inaccessible by computers, they have made Internet more convenient and private Nylander et al. (2009) and provided a tool to better combine online and offline worlds. Payment models are important factors for user behavior and could be one reason for the slow uptake of mobile internet use among Swedish teenagers and why it is not on the rise. Today, most phone subscriptions offer variations of flat rate on data traffic which means that the cost is predictable. The switch in payment models from paying for the amount of transferred data, to a flat rate has made it much easier for users to predict their phone costs, and thus for parents to control their teenagers phone costs. It is likely that more teenagers have got internet access from their phones through this.

**DESIGN IMPLICATIONS**

A number of design implications for the mobile phone use of social networking sites can be derived from the analysis of log data and survey data presented above.

First, the use of a mobile device does not necessarily imply a mobile situation of use in the traditional sense where users are on the move, have their attention directed to their environment, their hands occupied, etc. (Gorlenko & Merrick, 2003). Moreover, our data show that the cell phone is used in social situations, together with friends or in school which are not typical situations for mobile use. This means that the phone is often used in settings where the phone applications have the user’s full attention and the user can focus on the application for longer stretches of time. It is highly possible to design for stationary use on the phone.

Second, and related, our results make it clear that the phone is not a backup solution for situations when users have no computer access. The phone is a device that is preferred in many situations, for example, since it is more discrete than a computer. We therefore believe that online communities for mobile phone access should not be designed with the bare minimum of functionality to achieve easy navigation or a thin client. The full capability of the device should be explored, and as much desktop functionality as possible should be offered from the mobile terminals to give users the best possible experience. This is even truer now than when our data was collected, since the capabilities of handsets have only increased since.

Third, we found that Playahead is something teenagers do together face-to-face. We believe that social networking sites should be designed to support shared and collaborative use in the offline world. This could be achieved by allowing for easy switching between user accounts to make it possible to show friends what is going on in a quick way, or even allowing for a shared user interface where more than one user is logged in at a time. Group functions such as the ability to create flexible chat sessions for present and absent friends would also support the offline activity of sharing a social network site with friends.

**FUTURE RESEARCH DIRECTIONS**
Since the first analysis of our data, there has been a tremendous development of social media and mobile phone handsets. Therefore, we believe that the future research directions here are perhaps not in further analysis of our data, or a follow up study of current social media. The most interesting results presented above, in a current perspective, are the reflection on early mobile social media use, how quickly things have moved forward since, and how clear the trends seem when we look back. This points to the value of studying services in early stages of maturity, both to inform future design and to allow us to look back. For us, Playahead represent an early generation of social media that was followed by MySpace, Facebook, Twitter, Pintrest and many others. Finding such early generations for other domains would be our suggested future research directions.

CONCLUSION

Looking back gives a perspective both on the past and on the present. The results presented above points out how quickly things have changed, given that only in 2008 we had almost none of the social media that so many people are using daily today. We did not understand the magnitude of what was coming in social media when we started analyze our data in 2009, but the teens showed that the social motivation can be so strong that they used social media at the time in ways very similar to what we do today, and with much less sophisticated phones. The past few years we have also learned about how things can go wrong in social media. Sharing too much is becoming a frequent problem (Sleeper et al., 2013; Wang et al., 2011), and the pressure of always paying attention to messages and notification can be stressful (Oulasvirta, Rattenbury, Ma, & Raita, 2012; Pielot et al., 2014). We have even started to see over use, or addiction, to social media (Balakrishnan & Shamim, 2013; Baumer et al., 2013). All these things could probably have been investigated in our material since we had a large group of very frequent users. However, social media as a concept was not mature enough for us to pursue these questions. Fortunately, others did that in the years that came.

REFERENCES


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KEY TERMS AND DEFINITIONS
Social media: Forms of electronic communication (as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos).
Third places: Places outside home and work where people meet and socialize such as cafés and bars.
Figure 3

Activity frequency

Figure 4

Weekly vs. weekends