

Satchell, Christine (2003) The Swarm: Facilitating Control and Fluidity in Young People's Use of Mobile Phones. In Proceedings OzCHI, Brisbane.

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The Swarm: Facilitating Fluidity and Control in Young People's Use of Mobile Phones

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Abstract

This paper is a work in progress. It presents the findings to date of a study into the day-to-day activities and cultural behaviors that underpin young people's use of mobile phones. Four main themes emerged from the study: they are the role that technology plays in the construction of identity, emerging archetypes of users, 'fluidity' as an ideal for the use of mobile technology in the spontaneous formation of social networks and finally, 'control' as an ideal in the use of mobile technology to maintain the boundaries of virtual space. The study indicates ways in which fluidity and control could be more easily achieved for the young user. This is communicated through the Swarm scenario which is a hybrid of narrative and prototyping. This use of a scenario tells a story that provides insights into the culture of a specific user group that can contribute to the early phases of the design process.

1. Introduction

Central to this paper is the qualitative study of 29 young people living in Melbourne, aged 17-27. The study consists of 14 in-depth, one-on-one interviews, 15 in-depth group interviews and grounded analysis of the data. It is important to note that all the participants in the study owned a mobile phone. This is not by design but suggests that there is high concentration of mobile phone ownership in this demographic.

The study is conducted for the User Centered Design (UCD) project of the Smart Internet Technology Cooperative Research Centre (SITCRC) which aims to establish "a user-focus in the discovery phase of the development phases of the design of technological innovation" (Singh et al, 2003).

The focus of the young people study is on culture first and technology second so that the gaps between what the users do, what they want to do and what the technology

allows them to do can be identified. By understanding the culture that underpins use a rich picture of the user group emerges.

These findings then form the basis for the development of a scenario. The scenario is consistent with Cooper's model in that archetype users are created that represent the findings (Cooper, 1999) and consistent with Carroll in that it provides a narrative which captures the intricacies of use (Carroll, 1995). However, the scenario that is presented in this paper, called The Swarm, is unique in that it presents a user interacting with an imagined mobile device to achieve day-to-day goals. The Swarm in this sense is a hybrid of a scenario and a prototype because it more design solution specific.

2. Findings

Four main themes emerged from the qualitative study: they are the role that technology plays in the construction of identity, emerging archetypes of users, fluidity in the use of technology for the spontaneous formation of social networks and control over the use of technology to maintain the boundaries of virtual space.

2.1 Identity

The young people in the study experience life through multiple identities, for example, part time worker, student, son or daughter, friend, girlfriend or boyfriend and member of a club or team. They use different technologies for different activities - text messages to organize to meet up with friends especially in noisy locations such as nightclubs, ICQ to catch up with overseas friends, mobile phone conversations for sensitive matters (facilitates privacy), land line conversations for parents and multiple email addresses for university, work and friends.

One user stated, "the way I use technology or bits of it is dictated by what and how I want to communicate things and how I want the message to get across." Another stated, "the type of message you send says as much as what's in the message." Young people use different technologies to

facilitate different activities and their choice of the technology is an expression of their identity.

On a practical level the mobile phone facilitates communication - however, for the young people in the study mobile phone ownership also provides a sense of social and cultural identity, connectivity being an integral part of what it is to be a social individual in the early 21st century. Of the 29 participants 26 see connectivity via their mobile phone as vital to the way they live their lives. "We are like bees who need to communicate. It is a defining part of what we are like. We need to communicate and will become even more like this as the technology improves." This idea is supported by Myerson who stated that, "the phone is an object and a technology. But it is also a part of a system of ideas, even a way of looking at everyday life" (Myerson, 2001).

2.2 Emerging User Archetypes

Distinct user archetypes emerged from the data. They are consistent with the type of users that were outlined in Myerson (2001) where even the most resistant young person is mobile and technically savvy.

2.2.1 Nomads

The first archetype that emerged was the nomad. This archetype represents 26 participants of the study. The nomad is characterised by always being on the move - between different groups of friends, one or more part time jobs, university, shopping, going to restaurants and bars, a boyfriend's or girlfriends house, a share house, parent's houses and activities such as participating in a sport. Furthermore, users in the study were nomadic in the sense that unlike previous generations they did not have centralised meeting places where they could get together such as the main street or the mall. Groups are formed spontaneously on a minute by minute basis. There is a sense that while they are disconnected physically they are connected virtually because their mobile phone allows them to move between a wide range of social groups and activities with ease and fluidity.

2.2.2 Iconic

The second archetype that emerged was the iconic user. For the iconic user the mobile phone has transcended its functionality as a communication device and has become a status symbol, hence the term 'iconic user'. This relates to identity and the way in which the mobile phone had become a free-floating signifier. The mobile phone no longer just represents communication rather it has become symbolic of the owner's status, social acceptance and popularity. The iconic user has a pre-occupation with having the latest phone, uses all or most of the functions

and customises their phone with ring tones, snap on covers and display screens. Every participant in the study was an iconic user to varying degrees

2.2.3 Updaters

Updaters represent 26 participants in the study. For this archetype mobile phone ownership goes hand in hand with a need to regularly update others of their actions, to document and circulate usually via text message as many experiences as possible.

2.2.4 Resistant

This archetype is the most resistant to mobile phone ownership yet still have one. They see technology as a necessary evil. This archetype only represented two participants in the study.

2.3 Fluidity: Spontaneous Formation of Social Networks

For the young people in the study technology and friendships are inseparable from each other and the main activity that the young people are using their mobile phones for is the formation and maintenance of social networks. As one participant commented, "Technology has increased my intimacy with my friends. It gives me the power to be part of the group whenever I want. I never turn my phone off". There is a sense that they are always connected with each other and are able to switch seamlessly between real and virtual environments. "I will usually send a text saying that I am on my way, even when my friends would know that. Often we start our conversation (via text) before we physically hook up."

2.4 Control: Maintaining Boundaries of Virtual Spaces

Creating and maintaining social networks and lifestyles are a priority for the young people in the study and mobile phones are an important mechanism for achieving this. However, the way in which a mobile device allows the user to be contacted at any time is a concern. Of the participants in the study, 26 were very careful about policing the boundaries of the social worlds that they created through mobile phones. Half of the participants would not answer a call if they did not recognize the caller despite the fact they would have to pay twice - once to retrieve the message and then again to call the person back. This was encapsulated by one participant who stated, "I will not answer a call unless I know who it is. I would rather let it go to message bank then call whoever it is back even though it means I have to pay twice, once for the message bank call and then again to call the person back." Furthermore, 23 of the participants said that there were

times when even if they recognized the caller they would rather let the phone deal with it. One participant stated that, “I have different ring tones for different people so I know without even looking at my phone - just by hearing it if I want to answer.” While another participant noted that “I love caller ID – I want talk to certain people at certain times. It does make me have better relationships. I can talk to people when I am in the mood to talk to them and I can give them my best.” Again, by looking at the culture behind the use it can be seen how the young people in the study want to be connected all the time but not necessarily contactable all the time.

3. Scenario Development

These findings from the study suggest two main areas where the design of future mobile technology could improve the lifestyles of the young people.

The first improvement is in relation to increasing the fluidity of social interaction. This concept of fluidity is a theme in the work of Kakihara, Sorenson and Wiberg (2002). There is an important distinction, however, in that Kakihara, Sorenson and Wiberg conceptualise fluidity in the work space while the participants in this study desire fluidity in a social context.

The second improvement is providing the user with a greater level of control over their virtual spaces. This tension between the desire for fluidity and the need for control will be explored in further research.

The challenge is then to communicate these two improvements to the computer scientists within the SIT CRC. In order to bring the findings to life a persona and scenario was developed that depict a user engaging with an imagined mobile device to co-ordinate meetings with various groups of friends and acting as the first point of contact for anyone trying to get in contact with them.

4. The Swarm Scenario

Jade is 23 years old. She lives with her parents, goes to university and has a part time job in a chemist. She has a boyfriend, a best friend Sarah as well as numerous groups of friends; university friends, old school friends and people she met through playing sport. She has a bunch of close and not so close relatives, some of whom she also sees on a social basis. She enjoys playing netball, shopping, and going to up-market bars and restaurants.

Jade is always on the move. She stays at her boyfriend's once or twice a week and at her best friend Sarah's apartment in the city after they go out which is at least once a week. Often, she has late lectures in which case she stays with one of her university friends.

Jade is not a planner. With the exception of university lectures and her Saturday job at the chemist her life is very unstructured. Furthermore, Jade's friends are not planners

either. They go about their lives in a way that may seem to previous generations to be totally unconnected from each other. They have no central meeting place where they hang out – like the mall, or the main street or a community centre or the family house. They rarely plan ahead to meet; rather, through the use of mobile phones arrangements are made on a minute by minute basis.

Because of her mobile technology Jade is able to move between groups of people and activities with ease and fluidity.

It's 4pm on a Friday afternoon. Jade has finished her last lecture for the day. She gets on the tram at Melbourne University and heads into the city. She gets her mobile device out of her bag and logs into her virtual her lounge room.

Her lounge room is a 'virtual home' that resides in the owner's mobile phone. It is always on. It serves as the first point of contact for anyone getting in touch with the owner of the phone.

The first thing Jade sees is that a note has been left by her best friend Sarah who must have visited the space while Jade was in a lecture. Sarah would have been met by an avatar of Jade sitting in a lecture theatre. Jade clicks on the note and an avatar of Sarah in a business suit pops up. Just by looking at the avatar Jade is able to determine that Sarah must still be at work. However, Sarah's avatar advises her that she is finishing work early and wants to catch up with Jade in the city. Jade, who is about to get off the tram at Collins St., clicks on her avatar menu and selects one that depicts her carrying boutique shopping bags. She attaches a voice tag “In Collins St, meet you here as soon as you can get away from work.”

She instructs her 'shopping' avatar to notify Sarah of her activity and the avatar of Jade with Boutique shopping bags appears in Sarah's virtual lounge room. Meanwhile, not wanting to be disturbed by anyone else while she is shopping, nor alert her boyfriend and parents to the fact that she is out spending money, she decides to leave her 'in a lecture avatar' activated for everyone else but Sarah. She instructs her mobile device to screen all calls according to the avatar profiles she has set up, puts the mobile device back in her bag, gets off the tram and heads for the stores.

The virtual lounge room supports multiple avatars that represent the users multiple identities. They do not have to represent what the user is doing but rather what the user wants others to think they are doing.

Twenty minutes later she is in a shoe shop and her phone rings. She knows that unless it an emergency in which case avatar profiles can be overridden it must be Sarah as every other visitor would be subjected to the 'in a

lecture' scenario and diverted to her virtual lounge room. Sarah is two minutes away and they meet up and spend a happy, uninterrupted hour shopping. Sarah, who has left work early, has left her avatar on 'in a meeting mode' so she is not disturbed by calls either.

Note that the ability to not be contacted is as important as the ability to be contacted. This level of control over virtual space is at the center of this technology.

At six-o'clock the two friends go to an up-market bar for a drink. Both girls take their mobile devices out of their bags and log into their respective virtual lounge rooms. Jade sees that while she has been shopping or rather 'in a lecture' three friends have visited her. The have all left notes which she clicks on and their avatars appear. The friends are happy that it is Friday and want to catch up. She quickly goes to her avatar menu and selects one of her with a martini glass. She makes this her universal avatar so that everyone that comes to her virtual lounge will see this scenario.

The label 'avatar' is a term that is embedded in gaming culture and one that pops up frequently in popular culture. Avatars are not taken literally but rather allow for an iconic representation of what the user is doing at the time. For example, the use of the martini glass to indicate that one is 'out on the town'.

She also notifies specific friends who she really wants to see by sending the avatar of her with a martini glass to their virtual lounge rooms. She attaches the voice tag "At Amber Lounge with Sarah. Here until about ten. Come down."

The use of avatars can be proactive and when the owner of the phone wants to actively engage a person or group of people they can choose the appropriate avatar from their avatar menu list and send it to wait in the relevant persons' virtual lounge rooms. The avatars serve as notifications. The virtual world controls the real world.

Both girls order a snack and a drink and leave their mobile devices on in front of them on the table. Not only are they engrossed in a conversation with each other but also are aware of the comings and goings in their virtual lounge rooms. Assorted friends drop in both in real life and virtually. Jade has a quick video conversation with a group of friends in London and touches base virtually with her parents. She meets her boyfriend in his virtual café and they exchange virtual kisses. In real life he is still at work

This phone facilitates both real life and virtual contact amongst friends and supports the seamless transition between the two.

Jade uses the picture and video options on her phone to put 'up to the minute pictures' on the 'walls' of her virtual lounge room.

The owner of the phone is able to customise the look of their virtual lounge room and make it reflect a continual digital representation of the user's real life. This can act as an incentive for those not there to join her (or perhaps to not join her) or to allow those who cannot be there to 'get the picture'

And so the night continues.....

5. Conclusion

The users in the young people study identified the fluidity of the formation of social networks and the control over the boundaries of virtual space as the two areas where current mobile phone technology could be improved. The Swarm scenario communicates this by depicting an archetypical user engaging with an imagined 'ideal' technology that facilitates control and fluidity.

This scenario, which is being used for a virtual café project in the SITCRC, provides the technologists with a new paradigm. The virtual café for young people was originally conceived by the SITCRC technologists as a device that would reside on a desk top computer; however, the Swarm scenario told a different story. It presented the idea of a virtual lounge room that was mobile, always active and that facilitated fluidity and control.

Finally, in the analysis of the scenarios involving the User-Centred Design team and the technologists it was agreed that the Swarm had a sense of utility and trustworthiness because of its grounding in in-depth analysis of everyday activities and culture.

6. References

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