

If We Build it, Will They Come? Designing a Community-Based Online Site for Parents

Sarita Yardi Schoenebeck
University of Michigan¹
yardi@umich.edu

Amy Bruckman
Georgia Institute of Technology
asb@cc.gatech.edu

Abstract

Parents are busy people. Designing social software for parents requires understanding the particular needs and constraints governing their lives. In this paper, we present a study of a community-based site called ParentNet. Based on prior formative work, ParentNet was designed to support parents in keeping up with their children's social media use. With 10 months of deployment and 133 participants, ParentNet was successful in some regards and unsuccessful in others. Drawing from log data and focus groups, we arrive at three findings. First, parents may not easily switch from existing school communication platforms that they are already familiar with. Second, school support was critical for promoting adoption. Third, parents felt like they had too much technology in their lives and were not looking for more platforms to keep up with. We conclude with lessons for designing for parents and a discussion of technology overuse as a design constraint.

Keywords: parents, design, social media, youth, schools

Introduction

If we build it, will they come? Designers of social systems ask themselves this question regularly. We operate on the belief that a well-designed, functional system that should be adopted by users. Yet, this is not usually the case. For every successful deployment, hundreds and thousands go by barely noticed. Others experience momentary peaks of interest, then abrupt decline. A small number, like Outlook and Thunderbird, or Facebook and Twitter, or AOL and Skype maintain popularity long enough to leave a lasting impact on individuals and society. These services change the way people interact, communicate, and find information. For some people, especially youth, it's hard to imagine what life was like before communication technologies. For parents as well, cell phones and laptops have dramatically changed social life in the home.

Yet, there are also growing concerns about multi-tasking, addiction, lack of physical movement, poor relational development, and underdeveloped communication skills in people's technology use (Carr, 2010; Ophir, Nass, & Wagner, 2009; Sisson et al., 2009). These contribute to a generally shared sentiment that some amount of respite from technology is needed (Woodruff, Augustin, & Foucault, 2007). Parents struggle with questions about whether their family is using too much technology. They also have questions about whether or not to monitor their children and how much to do so (Boyd, Hargittai, Schultz, & Palfrey, 2011; Byrne & Lee, 2011; Rode, 2009). Our formative work observed that parents are challenged to know *how* to keep up with their children, especially parents who aren't comfortable with technology (Yardi & Bruckman, 2011).

In this paper, we describe the design and deployment of ParentNet, an online social network for middle school parents to help them keep up with their children's social media use. ParentNet was the result of over three years of collaboration with a K-12 private school. It was designed after a fairly extensive amount of fieldwork was conducted with that school which revealed questions and challenges parents faced around managing technology use. ParentNet was intended to give parents a place to keep

¹ Research was conducted while the first author was a graduate student at Georgia Tech.

up with changes in social media and a platform to try out services like chatrooms. Yet, parents engaged with ParentNet and the research team differently than the results of the fieldwork might have predicted.

We present three findings from this research: 1) Parents adopted ParentNet like a mailing list, a communication culture that they they were already accustomed to; 2) School support was helpful, and maybe even critical, for adoption of ParentNet; 3) Parents were inundated with technology and weren't looking for more platforms to have to attend to. Results 1 and 2 extend prior work on deploying systems and motivating adoption but with a new user demographic: parents. Result 3 was a new finding that speaks to a growing movement around technology overuse and refusal. This is the first study we are aware of that focuses on designing a community-based site for parents to manage technology use. We believe the primary contribution of this work provides insights into designing social systems for parents, a very large but potentially unique and understudied demographic of technology users.

Related Work

We focus on two areas of related work. We first review prior work on what motivates people to participate online. This lays the groundwork for understanding challenges in deploying successful online sites. Then, we describe approaches to parenting and consider these approaches as they relate to technology use. We provide this background to explain why we designed ParentNet and also to set the stage for explore how parents engage with a new online site in our research.

Participation in Online Communities

Motivations for participating online have been studied by computer and social scientists for over 20 years. Following Ostrom's groundbreaking *Governing the Commons*, a rich new body of research arose that explored challenges in promoting participation and cooperation online (P Kollock & Smith P., 1999; Peter Kollock & Herring, 1996; Wellman & Gulia, 1999). Researchers have drawn on social science theories to understand these motivations and to help designers and developers to understand the successes and failures of systems (Grudin, 1989). Motivations for participating online range from self-interest to altruism (P Kollock & Smith P., 1999). One kind of self-interest is reciprocity, where a person is motivated to contribute in anticipation of future return. Such self-interest can offer benefits to the group which relies on a network of credits and checks. Another example of self-interest is sense of efficacy that helps a person believe she has an impact on the group. Preece and Shneiderman propose a transformation of participation framework called "reader-to-leader" which suggests that successful levels of social participation will involve users moving from reader to contributor to collaborator to leader (Preece & Shneiderman, 2009).

Although quite a lot is known about what motivates people to participate online, translating this knowledge into design decisions has proved to be more challenging. Beenen et al. conducted four experiments to explore whether the uniqueness of one's contributions might motivate participation and to what extent persuasive messages might do so (Gerard Beenen, Kimberly Ling, Xiaoqing Wang, Klarissa Chang, Dan Frankowski, Paul Resnick, 2004). They found that uniqueness was a motivating factor but most other predictors were disconfirmed. It has also been shown that design decisions might differ based on a user's attachment to the group versus attachment to the individual (Yuking Ren, Kraut, & Kiesler, 2007). However, invitation styles appear to have little impact on people's decisions to join a site (Violi, Shneiderman, Hanson, & Rey, 2011). In addition, for those who do choose to join a site, they may continue to participate for different reasons than those that originally led them to the site (Lampe, Wash, Velasquez, & Ozkaya, 2010). In this case, participation between users is usually socially motivated whereas participation to the community is information oriented (Lampe et al., 2010). Designing online communities is too large a body of work to cover here; for a comprehensive study see (Kraut & Resnick, 2012).

To the best of our knowledge, there is no prior work exploring the design of an online site for parents. Though the platform ParentNet is built on is an online social network, the difference is largely a semantic one for our purposes. Our interest is in exploring how to design for a socially and digitally connected set of parents. In the next section, we consider parenting approaches, anxieties, and technology. We do this both to contextualize the goals of ParentNet, and to set the stage for the results and discussion.

Parenting Approaches

Attitudes towards parenting began to shift in the early to mid-1900s up to the 1960's (Nelson, 2010; Pollock, 1983; Stewart & Bond, 2002). Before that change, parents often sought advice from elders in their community, like their own parents or elders at church. They also looked to clergymen for advice on child-rearing. As attitudes and beliefs began to shift, parents began to look to a professional class of experts like doctors and psychologists for parenting advice. With this change came an apparent increase in fear and anxiety among parents, even in cases where there wasn't strong evidence showing correlation. For example, it has been suggested that fears about not breastfeeding, posture, neighborhoods, exposure to germs, food choices, and a number of other modern features of everyday life related to advice that was coming from this new professional class of experts (Nelson, 2010; Stearns, 2004). Stearns (2004) attributes anxious parenting to a greater sense of vulnerability and frailty in the past century: "Some of our most striking practices, from grade inflation to worries about children's boredom, result from the intersection of beliefs in vulnerability and the influence of wider social institutions" (Stearns, 2004). At the same time that this culture of anxious parenting grew, there was also a growing movement towards children's rights and encouraging children to develop and express their own feelings (Hefner, 1998). Thus, parents faced an often confusing range of desires to protect their children from disease and sickness while letting them roam freely to explore and learn.

The convergence of the culture of anxious parenting in the past century (Stearns, 2004) with a culture of uncertainty around technology (Borgmann, 1987; Carr, 2010; Lanier, 2010; Nelson, 2010; Turkle, 2011) has led to a complex landscape where parents are both eager advocates of technology in their children's lives but simultaneously fearful of its effects. The culture of anxious parenting is transferred—and for some parents, magnified—in the technological realm. Nelson (2010) describes a tension in parents' attitudes towards privacy and surveillance with respect to their children. Specifically, parents, especially middle and upper class parents, suggest they are morally opposed to spying on their children through technological means (drug testing, GPS tracking, spyware), but also acknowledge they would do so if they felt their child was in trouble. Indeed, a complicated menu of options is available for technology use. Consider the following examples from in the context of technology use and whether or not an 11 year old child can join Facebook:

- Strict parent: Gets angry and responds that the child cannot join any social networking sites until they say he can.
- Permissive parent: Says it is fine by them if the child joins Facebook.
- Uninvolved parent: Says they don't care if the child joins Facebook or not.
- Authoritative parent: Asks what the child would like to do on Facebook and agrees to work with the child to use it in appropriate ways.

Authoritative parenting has been accepted by many as the recommended parenting style (Clarke-stewart, 1998; Fagan, 2000; Maccoby, 1992; Steinberg, Darling, & Fletcher, 1995). However, critics have argued that this style was based on studies of White, middle class families and does not take into consideration different cultures, values, and approaches to families (Barber, 1996; Julian, McKenry, & McKelvey, 1994; Rodriguez, Donovan, & Crowley, 2009). Taken together, the parenting landscape is complex, and parents are tasked with the ongoing challenge of setting rules and managing how their children use social media. This challenge has been addressed by a small and growing community of researchers (Boyd et al., 2011; Byrne & Lee, 2011; Lenhart, 2010; Rode, 2009; Yardi & Bruckman, 2011),

but a lot of work remains to be done. This section contextualizes our motivations for designing ParentNet, and sheds light on the complexities facing parents raising children in a digital age.

Methods

Participants

We maintained a partnership with a private school in a large urban city in the U.S. for over three years during this project. The school had implemented a one-to-one laptop program (where each student is loaned a laptop from the school for the academic year) among its middle school students (grades 6-8) and was interested in ways of further supporting parents. They were also located near our university and appreciated having a university partnership. Participants were mostly middle to upper class. In general, parents did not suggest that they were early adopters (e.g. waiting in line to buy an iPad) but they were economically able to buy new technologies. Our formative studies showed the ways that parents develop attitudes towards their children's technology use (Yardi & Bruckman, 2011). In that work, the sample we interviewed was a self-selected convenience sample, chosen as a sample of parents to design ParentNet for.

ParentNet Design

ParentNet was designed to support parents in keeping up with their children's social media and technology use. It supported these goals by providing up-to-date resources and information about social media and by giving parents a platform to try out services like chat and discuss issues on their mind. We implemented ParentNet building off an out of the box social network platform called Ning² with JavaScript, PHP, and mySql extensions (see Figure 1). Some ParentNet features mirror those of well-known social networking services like Facebook. We added custom features like grade-level privacy, school feeds, and back-end analytics for the research team. The left column contained private groups for class of 2015, 2016, and 2017 parents (parents of 6th, 7th, and 8th graders during the 2010-2011 academic year). Below the Groups section was a Members section showing a subset of the network members. Content of the network included updates on new social sites and uses that were coming out (e.g. Google Buzz, Google+, Formspring), updates on technology policy and meetings from the school administrators, and discussions on social media use in the news. A blast notification email was sent to all network members every 1-2 weeks containing a summary of new content.

During the 2009-2010 school year we conducted a pilot study where 6th grade parents were invited to join ParentNet. This pilot was exploratory and experimental, meaning that it was seen as a trial year before we would be able to gain fuller support of the school. We organized chat help-sessions, provided resources, and observed participation. The goal was to develop a set of design principles around which to redesign the network for the following year. Based on interactions with parents, teachers, and administrators, and observation of use, we redesigned ParentNet for the 2010-2011 year.

We deployed ParentNet again in August 2010. This time the network was seeded with a team of resources, including middle school administration, school IT and technology administrators, and four students from the student "tech team." We recruited parents by speaking at the school's opening parent night and one to one laptop information session. The middle school principal also emailed the middle school-wide parent email list inviting parents to join the network. After three months, the parent network had 133 members, 5 of whom were students from the upper school (grades 9-12) "tech team," 5 of whom were school administrators, and 2 from the research team.

² www.ning.com



Figure 1. ParentNet screenshot (anonymized).

ParentNet Evaluation

To evaluate attitudes towards ParentNet, we conducted four focus groups with parents at the conclusion of the school year (May 2011, one week before the end of the semester). Parents were recruited through emails to the middle and upper school parent mailing lists from the school administration. Two focus groups were conducted with 5-7th grade parents and two with 8-10th grade parents (parents with children in both grade groups were invited to join either group). A total of 28 parents participated. Focus groups were conducted at the school on weekday mornings at different times to align with child drop-offs. The focus groups were structured to complement the network, with a focus on what worked for them and what did not. We combined ParentNet use with focus group data in the analysis below to show how parents navigate the complexities of social media management. We used a thematic analysis approach to organize focus group transcripts into categories (Boyatzis, 1998). We selected the most commonly recurring themes around ParentNet use and technology attitudes. We then returned to the transcripts and refined the themes.

Results

We begin by describing ParentNet participation and engagement drawing from log data. Then, we draw on focus group data to describe reasons for adoption and non-adoption. Finally, we describe the role of the school in promoting ParentNet and access to participants. In the discussion we reflect on lessons that we can draw from these results.

ParentNet Participation and Engagement

In total, 119 parents joined ParentNet, representing about 30% of the middle school parents at the school. The distribution was skewed towards parents of younger students, particularly parents of 6th graders. This group was new to the middle school, new to the one-to-one laptop program, and likely to be starting to think about buying their children technology like cell phones. Most parents joined the network within the first few weeks of its announcement. The network contained a welcome message at the top for the first month.



Figure 2. ParentNet Traffic for two month period.

A blast notification email was sent to all network members every 1-2 weeks containing a summary of new content. The spikes in Figure 2 show network read patterns as a result of those blasts. In general, parents treated the network like a mailing list with a social presence rather than a social network. That is, they joined, friended other parents, created profile photos, but read content without contributing much of their own. Instead they often shared feedback to the research team in face to face meetings and through the school staff. This indicates that they transferred existing behaviors—email lists from the parent groups at school—to the use of this new platform. We return to this in the discussion. Just under 40% of parents joined ParentNet of the total possible number of parents in the middle school (though for most families, one parent in the family joined which makes the participation rate/family closer to 70%) (see Table 1). As mentioned earlier, ParentNet was advertised by school administration and we believe high join rates were due to school support as well as general interest in the topic of social media. After joining, just over 80% of parents returned to the site at least once and about 30% returned weekly, usually after the weekly blasts were sent out.

Table 1
ParentNet Participation. What Participants Liked on ParentNet (N=28).

Joined	38% of total number of parents
Read	81% of parents who joined
Contributed	29% of parents who joined

Reasons for Adoption and Non-Adoption

During the focus groups, we asked parents about what they liked and didn't like about ParentNet and what they might want to be different (Tables 2-4). Parents liked its main purpose of helping them keep up with social media that their children were using. They also liked the sense of community that it was designed to promote, bringing together various members of the school community that otherwise would not exist in a single space. One key aspect of this was being able to keep up with school technology policies and updates, which changed frequently. Finally, they generally liked the attention being given to technology in their children's lives by the school and researchers.

However, parents still did not contribute heavily to ParentNet. When asked what they did not like about it, their responses centered on three interrelated issues: simply not having enough time, having too much communication and coordination in their lives already, and trying to spend less time with technology rather than more. A smaller number said they preferred face to face interaction (talking) or that it was unclear what the benefits were for them.

When asked what could be different or what they wanted, many emphasized that they didn't necessarily want to discuss what was going on with their children's technology use. They wanted instructions for how to manage technology use rather than discussing and reflecting on use only (for

example, they wanted to know what age their children should be allowed to get on Facebook). However, they also wanted the ability to override any advice that was given to them. What we learned was that they already talked a lot about social media face to face among themselves. They weren't necessarily looking for more discussion but for firm and tractable advice about what they should do. They also wondered what the short or long-term effects of technology use was and frequently asked us our opinions and for advice (questions that there are unfortunately not many answers for yet).

Some parents wanted the school to help them bear some of the burden of keeping up with technology changes. They wanted the school to make decisions about what children should or should not be doing, but wanted themselves to have full authority to accept or veto such decisions. For example, the school might say students should not be on Google Buzz until a certain age, the way this particular school openly asserted about Facebook use. This way parents were equipped with a line of arguments such as "school rules say no Buzz until age 14." Parents thus did not have to explain why the rule is what it is, just that the school says so, (but importantly, parents still had the right to overrule when they want to). Much of the aversion to their children's use of technology was because parents had a sense that their children—and themselves—were connecting to and through technology too much. For example, most told us they thought their teenagers texted too much, but they did not keep track of how many texts were sent each month from the phone bill. Parents told us that they felt they did not have the energy and resources to figure out what was going on. Some were concerned about what they would have to give up in order to spend more time understanding technology. This category of participants felt that parents who spent a lot of time on Facebook were making the wrong choice—sacrificing other priorities in order to be spending time online. Thus, we observed that ParentNet was successful in giving credence to the issues parents faced, but it was not successful at giving them readily accessible solutions to these issues. ParentNet was useful for gathering multiple stakeholders online in one place who otherwise wouldn't have been, such as the school administrators, parents, teachers, and researchers. We report on the role of the school in the next section.

Table 2
What Participants Liked on ParentNet (N=28).

Keep up with changes in social media	24
Keep up with school technology policy and updates	22
Community Engagement	18
Attention being given to the role of technology	16

Table 3
What Participants Did Not Like on ParentNet (N=28).

Trying to spend less time with technology, not more	25
Not enough time	23
Too many platforms, hard to keep up	16
Prefer to talk face-to-face	8
Unclear what benefits are	5

Table 4
What Participants Want (N=28).

Someone else to establish rules about technology use	20
Effects of technology use (and overuse) to be more clear	17
Easier way to access information on ParentNet	13

Deploying ParentNet in a School Setting

We present two results here that we think will be valuable to future research. First, working with a school broadened access to participants in ways that a non-school technology deployment would likely not have. Second, ParentNet became a technology probe through which to learn about technology use among schools and families more closely.

Access to Participants

Though these stakeholders shared the goal of educating children, many took ideologically varied approaches to doing so in terms of pedagogy and values. For example, some wanted their children to make mistakes and learn from them—“teachable moments.” Others did not want their children to make such mistakes nor be exposed to factors that could lead to them. Working closely with a school lent us access to this ecosystem and to the many participants involved in it.

In our research the school had numerous stakeholders, including parents, teachers, administrators, technology coordinators, and of course, students. The school provided a central location around which to meet with participants and access to a broad range of parents. When we entered this research we planned to design ParentNet for high school students. After early formative research, we realized that by then technology had already permeated teenager’s lives. Our early interviews with students and parents revealed to us that that the kinds of oversight parents wanted were dramatically different for 10 year old children versus 16 year old children (Yardi & Bruckman, 2011). We found that middle school was the main period of concern for parents. Parents whose children were not yet in middle school (5th grade and younger) said their children simply were not using technology all that much yet. Parents of 10th-12th graders generally conceded independence and autonomy to their children (and we observed that they were more focused on college applications, drinking, and dating at that point). Our formative work with the school—and the school’s own needs—led us to focus on parents of middle school aged children, for whom technology access and use was new and rampant. Easy access to participants enabled us to iterate on our own design and research questions.

Technology Probe

Running a deployment meant there was little control over external variables and we observed many such deviations in our field work. We went into this research taking an action research-like approach, wanting to understand what parents were dealing with and to help make their lives a bit easier with respect to technology in their family’s lives. During the year that ParentNet was deployed, there were serious issues relating to sexting and online predators at the school (we learned that these issues seem to be happening at many schools but are rarely publicized in order to protect the school and individuals). As such, parents’ attitudes about Internet use varied dramatically depending on how close or far their child might be to these kinds of incidents and simply depending on when during the year we talked to them. As we continued through the complexities of working with parents, understanding school agendas and policies, and the scope of technology use in youths’ lives, our intervention became a “technology probe” (Hutchinson et al., 2003) as much as an agent for change. By technology probe, we mean that it was a tool through which to gain more insight into the community and its workings than we would have otherwise. Specifically, it became an artifact through which to understand the differences between what parents said and what they did—an ongoing challenge in designing social systems. We discuss these results in the next section.

Discussion

We find that designing social platforms for parents carries some intriguing challenges. Parents joined ParentNet enthusiastically, but did not participate heavily or continuously over time. We presented three reasons for this. First, school support was useful in gaining adoption for new sites. Second, parents

had become familiar with existing tools—especially ones that they associate with the school context—and did not easily switch to new tools. Finally, and perhaps most interestingly, parents were busy and felt they had too much technology in their lives already, what we're calling "technology overuse." We focus our discussion on lessons for deploying parent sites and reflections on technology overuse and parenting.

Lessons for Deploying Community-Based Parent Sites

Use of ParentNet mirrored familiar patterns of participation online where a few parents contributed the most, many read but didn't post frequently, and some joined and did not return (Guzdial & Turns, 2000; Lampe & Roth, 2012; Lampe et al., 2010; Nonnecke & Preece, 2000). The "1% rule," also known as the 90-9-1 principle, asserts that 1% of people will create content, 9% will contribute, and 90% will lurk (though this omits people who join and rarely or never return). This pattern is seen on popular sites like Twitter where somewhere around 60% of users are estimated to join and then not return; MySpace and Facebook have somewhere around 40% who don't return (Cashmore, 2009). Coordinating multiple stakeholders who are distributed across different locations can result in barriers in use (Lampe & Roth, 2012). Schools, in particular, are complex social institutions. One of the lessons we learned is that we should have done more to change the culture among parents and to better set their expectations for how ParentNet might be used. These kinds of design reflections might be coupled together under the label of "misinformed implementation." That is, the design specifications we derived from formative work did not easily translate to the best possible design. Beenen et al. speculated this outcome in their own system implementation, suggesting that poor wording, new contexts, and feelings of psychological reactance might have all deterred users from engaging with their system (Gerard Beenen, Kimberly Ling, Xiaoqing Wang, Klarissa Chang, Dan Frankowski, Paul Resnick, 2004). It is also possible that parents prefer different software platforms, based on the quality and usability of the system. We are currently designing new technical approaches to supporting parents and children and plan to make the following changes, and offer them here for other researchers looking to do similar kinds of deployments.

- 1) Design systems for mobile devices. Most parents have cell phones in the U.S. and many have smartphones. Parents are often on the go, picking up children after school and after activities, and we observed those were times that checked their mobile devices frequently.
- 2) Build plug-ins to existing platforms that parents use. Reduce the number of logins and services that need to be remembered.
- 3) Leverage an existing community of parents, like a school or other organization. Support from administrators and key leaders help gain buy-in and adoption.
- 4) Don't expect to change local culture with just different or newer technology. Parents were accustomed to face to face conversations and school mailing lists and continued to rely on these communication styles.

These are some of the design takeaways that emerged from our research. Many of these speak to broader social issues that we see pervading technology use among parents and children. In the next section we reflect on these issues as they might relate to future design and research opportunities.

Technology Overuse and the Evolving Landscape of Parenting

Prior work has shed light on the kinds of worries parents harbor—that their children are circumventing rules about technology use, that they should be monitoring their children's Internet use more than they do, and that they need to be keeping up with new social media trends (Boyd et al., 2011; Byrne & Lee, 2011; Rode, 2009). But why do these worries surface, especially among families who haven't experienced anything to worry about beyond normal child development (making friends, school, etc.)? Latour proposed the idea of *instant revisionism* to explain how we develop theories about the ways of the world (Latour, 2004). Problematically, he says, as soon as something surprising or dangerous happens, we look for a quick explanation. We found that some parents strongly disliked FormSpring, Google Buzz, Skype, and other social software for exactly this reason—if they heard about problematic uses of these sites, they immediately worried about their own children's uses. Thus, decades of theories

about children, relationships, and parenting are quickly revised into instant theories about a particular service or platform and its negative effects. Mainstream media is also sensationalist, serving harbingers like the “dark side of Facebook” (Pearse, 2012). Monitoring children is a contentious topic, and suggests helicopter parenting, overparenting, and other kinds of anxious parenting (Stearns, 2004). This seems problematic. Parents need a language and framework to think about their children's technology use that doesn't immediately position them as either negligent or hyperparent (see parenting styles in (Baumrind, 1966)). Instead, new theoretical frameworks are needed to talk about how parents can keep up with their children's technology use while supporting children's growing autonomy and independence.

The idea of technology overuse and the attention economy is not surprising in today's culture. Technology ownership is pervasive in the U.S. and in many developed countries. We believe that technology overuse will increasingly have to be a constraint in the design process. Little is understood about how to design for overuse, but two strands from other research might be useful here. The first is the need to design less. That is, to discover when “not to design” (Baumer, 2011). In this approach, researchers are encouraged to reimagine technology not as a solution to a problem, but as complex reconfiguration of a particular setting. Sometimes, designing less or nothing at all might be the best design (Densmore, 2012; Wyche, Tech, & Grinter, 2012). The second factor is what to do when there is “lagging adoption” (Satchell & Dourish, 2009) or when design “goes bad” (Gaver, Bowers, Kerridge, Boucher, & Jarvis, 2009). That is, when a design fails, did designers fail to determine appropriate design guidelines or was a design failure simply unpredictable? What happens next in that situation? Both of these conditions surface a broader set of design constraints than those we discussed in the related work section. For parents—and perhaps for many demographics right now—technology overuse has become an important constraint in the design process. Future research agendas should consider both the social implications of technology overuse, as well as design implications for supporting parents in managing technology use in their lives.

Limitations

Schools are rich and complex ecosystems. We chose not to write about or expose the details of major conflicts we observed related to the school or technology use. Our results are focused on our deployment and evaluation but it is important to remember that this is only one piece of a complex puzzle. This work is also the result of a case study—we deployed ParentNet with a particular demographic of parents at a particular school. We anticipate that strong school support enabled the research we did and that working in other schools might deem more challenging. This is the first study we know of in an area that we hope generates more interest and research.

Conclusion and Future Work

In this paper we have surfaced areas where designing for parents becomes challenging or bears unique characteristics to social software design. We find that working with schools can help with recruiting and adoption but also requires understanding an existing culture and way of doing things. Most technology research in schools has been related to pedagogy or to student-oriented efforts like encouraging physical activity (Poole et al., 2011). With the increasing pervasiveness of technology across settings—home, school, and work—we think there is much work to be done to better understand how we might design new sites across these settings. Designing technology for parents also needs to address the growing tension in technology use and overuse among families. Our results also lay the groundwork for future work focusing on social media use among parents. We think designing for parents is an area of important future work and hope this work enables a new genre of parent-focused design research.

Acknowledgements

We thank the parents for their time and in particular, the school for their support in conducting this work. The phrase “if you build it, they will come” is a variation of a quote from (Robinson, 1989).

References

- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development*, 67(6), 3296–3319.
- Baumer, E. P. S. (2011). When the Implication Is Not to Design (Technology). In *Proc. CHI '11* (pp. 2271-2274). New York, NY, USA: ACM.
- Baumrind, D. (1966). Effects Of Authoritative Parental Control On Child Behavior. *Child Development*, 37(4), 887–907.
- Borgmann, A. (1987). *Technology and the character of contemporary life: A philosophical inquiry*. University of Chicago Press.
- Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. Sage Publications.
- Boyd, D., Hargittai, E., Schultz, J., & Palfrey, J. (2011). Why parents help their children lie to Facebook about age: Unintended consequences of the “Children’s Online Privacy Protection Act”. *First Monday*, 16(11).
- Byrne, S., & Lee, T. (2011). Toward predicting youth resistance to internet risk prevention strategies. *Journal of Broadcasting and Electronic Media*, 55(1).
- Carr, N. (2010). *The Shallows: What the Internet Is Doing to Our Brains*. WW Norton.
- Cashmore, P. (2009). 60% of twitter users quit within the first month. *Mashable*. Retrieved from <http://mashable.com/2009/04/28/twitter-quitters/>.
- Clarke-stewart, K. A. (1998). Historical shifts and underlying themes in ideas about rearing young children in the United States: Where have we been? Where are you going? *Early Development and Parenting*, 117(February), 101–117.
- Densmore, M. (2012). Claim mobile: when to fail a technology. In *Proc. CHI '12* (pp. 1833–1842). New York, NY, USA: ACM.
- Fagan, J. (2000). African American and Puerto Rican American parenting styles, parental involvement, and Head Start children’s social competence. *Merrill - Palmer Quarterly*, 46, 592–612.
- Gaver, W., Bowers, J., Kerridge, T., Boucher, A., & Jarvis, N. (2009). Anatomy of a failure: how we knew when our design went wrong, and what we learned from it. In *Proc. CHI '09* (pp 2213–2222). New York, NY, USA: ACM.
- Gerard Beenen, Kimberly Ling, Xiaoqing Wang, Klarissa Chang, Dan Frankowski, Paul Resnick, and R. E. K. (2004). Using social psychology to motivate contributions to online communities. In *Proc. CSCW '04* (pp. 212-221). New York, NY, USA: ACM.
- Grudin, J. (1989). Why groupware applications fail: Problems in design and evaluation. *Office Technology and People*, 4(3), 245–264.
- Guzdial, M., & Turns, J. (2000). Effective Discussion Through a Computer-Mediated Anchored Forum. *The Journal of the Learning Sciences*, 9(4), 437–469.
- Hefner, K. (1998). Youth rights. *Social Policy*, 28(3), 60–63.
- Hutchinson, H., Mackay, W., Westerlund, B., Bederson, B., Druin, A., Plaisant, C., Beaudouin-Lafon, M., et al. (2003). Technology probes: inspiring design for and with families. In *Proc. CHI '03* (pp. 17-24). New York, NY, USA: ACM.
- Julian, T. W., McKenry, P. C., & McKelvey, M. W. (1994). Cultural Variations in Parenting: Perceptions of Caucasian, African-American, Hispanic, and Asian-American Parents. *Family Relations*, 43(1), 30–37.
- Kollock, P., & Smith P., M. and K. (1999). *The Economies of Online Cooperation: Gifts and Public Goods in Cyberspace* (pp. 220–239). New York: Routledge.
- Kollock, P., & Smith, M. (1996). Managing the virtual commons. *Computer-mediated communication: Linguistic, social, and cross-cultural perspectives*, 109-128.
- Kraut, R., & Resnick, P. (2012). *Building Successful Online Communities: Evidence-Based Social Design*. The MIT Press.
- Lampe, C., & Roth, R. (2012). Implementing Social Media in Public Sector Organizations. In *Proc. iConference '12* (191-198). ACM, New York, NY, USA.
- Lampe, C., Wash, R., Velasquez, A., & Ozkaya, E. (2010). Motivations to participate in online communities. In *Proc. CHI '10* (1297-1936). ACM, New York, NY, USA.
- Lanier, J. (2010). *You Are Not a Gadget: A Manifesto*. Deckerle.

- Latour, B. (2004). Why Has Critique Run Out of Steam? *Critical Inquiry*, 30(2), 225–248.
- Lenhart, A. (2010). *Is the age at which kids get cell phones getting younger?* Pew Internet & American Life Project.
- Maccoby, E. E. (1992). The role of parents in the socialization of children: An historical overview. *Developmental Psychology*, 28, 1006–1017.
- Nelson, M. K. (2010). *Parenting Out of Control: Anxious Parents in Uncertain Times*. NYU Press.
- Nonnecke, B., & Preece, J. (2000). Lurker demographics: counting the silent. In *Proc. CHI '00* (pp. 73–80). New York, NY, USA: ACM.
- Ophir, E., Nass, C., & Wagner, A. D. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences of the United States of America*, 106(37), 15583–15587.
- Pearse, D. (2012, March 17). Facebook's "dark side": study finds link to socially aggressive narcissism. *Guardian*. Retrieved from <http://www.guardian.co.uk/technology/2012/mar/17/facebook-dark-side-study-aggressive-narcissism>
- Pollock, L. (1983). *Forgotten children: parent-child relations from 1500-1900*. Cambridge: Cambridge University Press.
- Poole, E. S., Miller, A., Xu, Y., Eiriksdottir, E., Catrambone, R., & Mynatt, E. (2011). The Place for Ubiquitous Computing in Schools: Lessons Learned from a School-Based Intervention for Youth Physical Activity. In *Proc. UbiComp* (pp. 395-404). New York, NY, USA: ACM.
- Preece, J., & Shneiderman, B. (2009). The Reader-to-Leader Framework: Motivating Technology-Mediated Social Participation. *AIS Transactions on Human-Computer Interaction*, 1(1), 13–32.
- Ren, Yuqing, Kraut, R., & Kiesler, S. (2007). Applying Common Identity and Bond Theory to Design of Online Communities. *Organization Studies*, 28(3), 377–408.
- Robinson, P. A. (1989). *Field of Dreams*. Universal Distributors.
- Rode, J. A. (2009). Digital Parenting: Designing Children's Safety. *British Computer Society - People and Computers*, 244–251.
- Rodriguez, M., Donovan, M., & Crowley, S. (2009). Parenting Styles in a Cultural Context: Observations of "Protective Parenting" in First-Generation Latinos. *Family Process*, 48(2), 195–210.
- Satchell, C., & Dourish, P. (2009). Beyond The User : Use And Non-Use in HCI. *Human-Computer Interaction* (Vol. 366, pp. 9–16). ACM.
- Sisson, S. B., Church, T. S., Martin, C. K., Tudor-Locke, C., Smith, S. R., Bouchard, C., Earnest, C. P., et al. (2009). Profiles of sedentary behavior in children and adolescents: The US National Health and Nutrition Examination Survey, 2001–2006. *International Journal of Pediatric Obesity*, 4(4), 353–359.
- Stearns, P. N. (2004). *Anxious Parents: A History of Modern Childrearing in America* (p. 263). NYU Press.
- Steinberg, L., Darling, N., & Fletcher, A. C. (1995). Authoritative parenting and adolescent adjustment: An ecological journey. In P. Moen, G. H. Elder Jr., & K. Luscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 423–466).
- Stewart, S. M., & Bond, M. H. (2002). A critical look at parenting research from the mainstream: Problems uncovered while adapting Western research to non-Western cultures. *British Journal of Developmental Psychology*, 20, 379–392.
- Turkle, S. (2011). *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books.
- Violi, N., Shneiderman, B., Hanson, A., & Rey, P. Motivation for Participation in Online Neighborhood Watch Communities: An Empirical Study Involving Invitation Letters. In *IEEE Third Intl Conference on Privacy Security Risk and Trust*.
- Wellman, B., & Gulia, M. (1999). Virtual Communities are Communities: Web Surfers Don't Ride Alone. In M. A. Smith & P. Kollock (Eds.), (pp. 167–194). Routledge.
- Woodruff, A., Augustin, S., & Foucault, B. (2007). Sabbath Day Home Automation: "It's Like Mixing Technology and Religion". In *Proc. CHI '07* (pp. 527-536). New York, NY, USA: ACM.
- Wyche, S. P., Tech, V., & Grinter, R. E. (2012). Using Sketching to Support Design Research in New Ways. In *Proc. iConference '12* (pp. 63–71). New York, NY, USA: ACM.
- Yardi, S., & Bruckman, A. (2011). Social and Technical Challenges in Parenting Teens' Social Media Use. In *Proc. CHI '11* (pp. 3237-3246). New York, NY, USA: ACM.

Acknowledgement[s]: [research funding agency, grant number, etc. and/or thank you to individuals.
Last Name, Initial, Last Name, Initial, & Last Name, Initial. (2013). If we Build it, Will They Come? Designing a Community-Based
Online Site for Parents. *iConference 2013 Proceedings* (pp. ___ - ___). DOI: _____ [editor will insert final page
numbers and DOI number]
Copyright is held by the author/owner(s).