

# Teenage Communication in the Instant Messaging Era

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## ABSTRACT

Since the mid-1990s, teenagers have migrated from email and chat rooms to instant messaging (IM). We observed this change in data from 60 interviews with teens and their families conducted from 1996 to 2002 and a national survey of teenagers in 2002. We examined the content of conversations, communication partners, and conversation multitasking. While using IM, teens mainly talk to friends from daily life and rarely with those they met online. In terms of both partners and content, IM conversations are more like face-to-face visits than email exchanges. Teens engage in IM to be “with” friends. Conversations often consist of inconsequential small talk, but can offer opportunities for more substantial social support. Despite these similarities, teens report they enjoy IM conversations far less than they enjoy face-to-face visits and phone conversations. We offer some design recommendations focused on the integration of IM-like interactions with other online and real world communication.

## Keywords

instant messaging, Internet, teenagers, multitasking, media switching, interpersonal communication

## INTRODUCTION

Instant messaging (IM) software allows people to have real time private text-based conversations on the Internet. While synchronous networked communication has a long history, modern IM software was introduced in 1996. Since that time, use of the medium has become increasingly widespread among teenagers. A study of teen use of the Internet conducted by the Pew Internet &

American Life Project [1] in 2001 states that 74% of teenagers who are online use IM and 69% of them use it at least several times a week.

With IM becoming integrated into the everyday life of American teenagers, it is important to examine what IM provides that teenagers cannot get from other communication media. Why have teens gravitated to IM so quickly in large numbers? How do teens incorporate this type of communication into their daily lives?

A picture of how and why IM is used is just developing. Several studies have examined the use of IM among adults in the workplace [2, 3, 4, 5]. However, these studies provide little insight into its dominant use, which is by teenagers use IM at home.

Two studies have begun to uncover why and how teens use IM, and what they talk about. In Grinter [7], teens stated that they liked IM because it supported multitasking, the communications held through IM were private and it was a relatively inexpensive way to communicate. In a study by Schiano and colleagues [6], seventh and twelfth grade American teens who used IM noted that IM was something to do when bored and saw it as a way to just hang out and connect with friends. Teens in this study also noted that IM conversations helped them overcome their shyness in discussing sensitive topics and in talking to the opposite sex. The girls in seventh grade used IM more than any other group in the study. Teenagers in twelfth grade used IM less than the seventh graders. The authors hypothesized that the seventh grade teens had more time on their hands and were not as mobile as the twelfth graders, and therefore, could spend more time using IM.

The possibility of carrying out multiple conversations while performing other tasks on the computer, such as doing homework and listening to music, makes IM especially attractive to teens [6, 7]. Schiano and colleagues [6] found that teens are carrying out as many

as 4 to 5 conversations at once, but usually no more than 1 to 2 conversations are common. How teenagers accomplish this multitasking has not been explored.

These studies [6, 7] show the main reasons why teenagers prefer IM to other media. However, it is still not clear why teens enjoy talking to several people at a time and knowing the whereabouts of their friends. To answer these questions we need to study the online communication behavior of teens: who teens talk to through IM, what they talk about, when they use IM and when would they prefer IM instead of email, the phone, or in-person communication.

In order to better understand the specific online communication behavior of teenage IM users, we analyzed interviews with 25 adolescents conducted by the HomeNet project from 2001 to 2002. We supplemented these interviews with 40 interviews the HomeNet project conducted from 1996 to 1999, in a pre-IM era. To put our interview findings into context, we also report results of quantitative data analyses of the HomeNet 2001-2002 national longitudinal survey.

## **METHOD**

### **Quantitative Data Analysis**

Within the HomeNet 2001-2002 national longitudinal survey, we study how adolescents use the Internet for real-time communication, and in particular IM. Data was collected in two waves 6 to 8 months apart.

#### *Sample*

Eight hundred sixty-seven individuals over 13-years-old completed either an online survey or a paper-and-pencil version in both waves of the study. One hundred seventy-eight (17.1%) of them are adolescents (between 13 and 19 years old); 48.4% male and 51.6% female. Of these teens, 84.38% are in middle school or high school. They come from households with an average of four family members and an average household income of \$40,000; 81.5% of them are Caucasian.

#### *Method*

The respondents were asked to describe two communication events that occurred on the day before completing the survey. One was a conversation that occurred over the Internet (either an online chat/instant messaging session, if this occurred, or an email exchange). The other was a non-Internet communication (either a face-to-face visit or a phone conversation). Respondents were also asked to describe their communication with two communication partners (someone living near-by and someone living at least an hour away). For both descriptions of the conversational events and the conversational partners, respondents were asked whether each of 21 different topics characterized the conversations (see Table 1 for the list of topics), how they met their partner, and how frequently they

communicate with this particular partner in person, by telephone, by email, or by IM. They also described the age and the gender of their communication partner, the nature of their relationship with the partner, and how far away the partner lived (1=same building; 5=different state; 6=further away) When describing a communication event, they also described how long event lasted, how useful it was for getting work done, for sustaining the relationship and for exchanging information, and how much they enjoyed the conversation.

#### *Design*

A total of 178 teenagers answered questions about four communication sessions with a partner "yesterday": face-to-face or by phone and IM/chat or email at Time 1 and again 6 to 8 months later at Time 2. For the analyses, we used hierarchical linear model, with both time and communication modality treated as fixed factors, nested within respondent, a random factor. We tested for the impact of type of communication modality on contents of talk, on enjoying the communication, on usefulness of the communication session for the relationship, for exchange of information and for work. The analyses controlled for gender of respondent and gender of communication partner. Levels of significance reported in Tables 1 and 3 below are based on tests of whether each of the three other communication modalities (email, phone and face-to-face) differs from conversations conducted by IM. Differences in contents of the conversation were tested separately for each item as well as for the four scales elicited in the factor analyses: "small talk," "negative talk," "support talk" and "personal relationship talk." (See Table 1 for more details on items in each factor and wording of items.)

In addition, we did chi-square tests comparing patterns of relationship to communication partners across the four modalities and patterns of how they first met their communication partner.

### **Qualitative Data Analysis**

#### *Sample*

The HomeNet Project has been conducting interviews with families in the Pittsburgh, PA area since 1996. Between 1996 and 1999, 40 families were interviewed. Twenty additional families were interviewed in a four-month period from December 2001 to March 2002. Families were selected from the HomeNet survey sample if they met the following criteria: lived in the Pittsburgh metropolitan area, had access to the Internet at home and had adolescent live-in children.

Our study focuses on 2001-2002 interview data analyses, although we draw conclusions from data analyses of the previous interviews, too. Twenty-five (46.3%) of the people interviewed were teens ranging in age from 13 to 19. Fourteen (56%) of the interviewed adolescents were male and 11 (44%) female. The majority of the teens

interviewed were in high school. Four teens (16%) were in the 13 to 14 age range, 18 teens (72%) were in the 15 to 17 age range, and 3 teens (12%) in the 18 to 19 age range.

**Method**

Interviews were semi-structured. Each interview lasted about 3 hours and consisted of two parts: a family interview where all members of the family discussed their use of the home computer and Internet, and individual interviews with family members in front of the computer. The individual interviewee showed how they typically used the computer. All interviews were transcribed and analyzed, following standard guidelines for structured thematic analysis see e.g., Silverman [8]. Interviews were coded systematically using NVivo, qualitative data coding software packaged produced by QSR [9]. To ensure reliability, two people conducted coding of interviews and intercoder-reliability was high.

**RESULTS**

**Do teenagers migrate from chat rooms to IM?**

There is some evidence that, for the last 5 to 6 years, adolescents have been changing the pattern of their online communication, switching from using email and chat rooms to IM. Here we focus on the shift from chat to IM. As illustrated in Table 2, 26.9% of teens interviewed in the 1996 to 1998 time period used chat rooms and only 12.1% of teens in the 1999 to 2002 time period used chat. In 1996-1999, IM was just starting to emerge and teenagers had yet to start using IM as a communication medium. Since 1999, teens in our interviews sample started to gravitate to IM. As shown in Table 2, 87.9% of teens used some synchronous Internet communication in the 1999 to 2002 time period, with all using IM and a smaller proportion also frequenting chat rooms. In contrast, only 26.9% of the teens used any synchronous Internet communication in the 1996-1998 period.

Variable	IM/Chat		Email		Phone		Visit	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
<i>Small talk scale</i>	0.58	0.27	0.40**	0.30	0.50	0.28	0.57	0.23
small talk	0.87	0.34	0.57**	0.51	0.79	0.41	0.81	0.40
joke	0.82	0.39	0.43**	0.51	0.57	0.50	0.88	0.33
reminisce	0.24	0.43	0.26	0.45	0.22	0.42	0.36	0.48
catch up	0.60	0.49	0.39	0.50	0.51	0.51	0.47	0.50
share experiences	0.47	0.50	0.48	0.51	0.49	0.51	0.50	0.50
discuss interest/hobbies	0.47	0.50	0.35	0.49	0.30*	0.46	0.50	0.50
recap day	0.62	0.49	0.30**	0.47	0.60	0.50	0.45	0.50
<i>Negative talk scale</i>	0.27	0.29	0.04**	0.12	0.19	0.25	0.22	0.25
complain	0.38	0.49	0.04**	0.21	0.30	0.46	0.31	0.47
persuade	0.25	0.44	0.04	0.21	0.21	0.41	0.17	0.38
disagree/argue	0.20	0.40	0.00	0.00	0.15	0.36	0.21	0.41
ask favor	0.25	0.44	0.09*	0.29	0.11	0.31	0.17	0.38
<i>Support talk scale</i>	0.47	0.41	0.38	0.38	0.36	0.39	0.43	0.38
get/give support	0.42	0.50	0.35	0.49	0.30	0.46	0.34	0.48
give/get advice	0.56	0.50	0.48	0.51	0.36*	0.49	0.53	0.50
problem talk	0.42	0.50	0.30	0.47	0.43	0.50	0.40	0.49
<i>Personal relationship talk scale</i>	0.25	0.32	0.14	0.24	0.16	0.24	0.19	0.29
relationship talk	0.29	0.46	0.17	0.39	0.32	0.47	0.19	0.40
get to know	0.27	0.45	0.26	0.45	0.13	0.34	0.31	0.47
romantic talk	0.18	0.39	0.00*	0.00	0.02**	0.15	0.07	0.26
<i>Other topics</i>								
work/school	0.56	0.50	0.30*	0.47	0.57	0.50	0.57	0.50
gossip	0.47	0.50	0.13*	0.34	0.49	0.51	0.43	0.50
make plans	0.62	0.49	0.61	0.50	0.70	0.46	0.60	0.49
kill time	0.65	0.48	0.09***	0.29	0.38*	0.49	0.50	0.50

**Table 1. Conversational topics by communication modality**

Note: Cells refer to the probability that topic appeared in a conversation. IM N = 55, email N = 23, phone N = 47, visit N = 58 P-values compare Instant Messaging to the other modalities; \* p<.05; \*\* p<.01; \*\*\* p<.001.

	Year Range	
	1996-1998	1999-2002
Chat	26.9%	12.1%
IM	0%	87.9%
Total Interactive Communication	26.9%	87.9%
Sample Size	26	33

**Table 2. Change in IM and chat room use over time**

The interview data are consistent with national statistics. In our 2001-2002 national survey sample, 76% of all adolescents and 80.7% of those who use Internet report using IM, while in an earlier national sample, the Pew Internet and American Life Project report 69% of online teens surveyed in 2001 used IM [1].

Compared to other modes of communication, time spent using IM seems to range between face-to-face and phone. In our survey data, teens reported spending more time in face-to-face communication than on IM; and they spent less time communicating by phone or email than by IM. (See Table 3.)

### What do teenagers like about IM?

Interview data analyses show that adolescents find IM especially useful for chatting with others while doing something else (i.e., multitasking.) Eight of our teen interviewees (32%) stated that they liked the ability to talk to more than one person through IM. Only one interviewee said that he had never had multiple IM conversations. Three participants (12%) mentioned that they found the phone limiting, because they could talk to only one person at a time, while they could spend a given amount of time talking to many people by IM. One teenager describes the appeal of multiple conversations through IM this way:

“Amelia: Personally I like talking to a lot of people at a time. It kind of keeps you busy... You get to find out like more things about your friends and everything. It's kind of boring just talking to one person cause then like... you can't talk to anyone else.”

Another highly desirable feature of IM is the presence information it provides about a potential conversation

partner. Several of the teens emphasized that it is possible to see when a communication partner is away (because the partner leaves an away message). This information makes it easier to know when a person will be available to talk. Other communication modalities, such as the phone and email, do not give this type of information readily.

“Amelia: Okay. A lot of my friends have away messages on - they're not really like here - they're probably somewhere else... Usually if you find... If they're not away they usually have the yellow paper outside their name and that means they're somewhere. If you click on their name and then get info like it will say where they're at. Like for this line like, he says I'm not available. It says he's not available because he's playing a computer game that takes up the whole screen so there's different ways you can find out where they're at.”

In addition, six of our interviewees said that that IM is a “faster communication.” Apparently, IM allows teens to be able to talk to others online and get almost instantaneous responses. Teens also feel that IM is “faster” because they can have immediate information about the availability of the people on their buddy list (as mentioned above.)

Although teens in our interview sample report that IM is useful in a variety of ways when communicating with friends and others, the national survey data suggest that in general they consider it less enjoyable and useful than the more traditional communication modalities. In the national survey, teens evaluated specific communication episodes that occurred “yesterday”. They described their IM conversations as substantially less enjoyable than face-to-face visits or phone calls, but no different than email messages. (See Table 3.) They judged their IM conversations as less useful than email and phone calls for exchanging information and than email for exchanging information. However, the modalities did not differ in their value for maintaining relationships.

Variable	IM/Chat		Email		Phone		Visit	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
enjoy conversation	1.67	0.75	1.48	0.73	4.04***	0.86	4.48***	0.70
usefulness of event for relationship	3.85	1.06	4.13	1.01	3.92	1.12	4.19	0.73
usefulness of event for info	4.27	0.97	4.83*	0.39	4.50	0.81	4.25	0.86
usefulness of event for work	3.40	1.24	4.00*	1.35	3.34	1.36	3.50	1.37
length of communication event	4.16	1.34	2.65***	1.07	3.48***	1.47	5.14**	1.17
age of partner	18.02	7.79	31.05	14.02	28.98***	19.66	21.28	13.83

**Table 3. Characteristics of conversation event and partner**

Note: Cells refer to the probability that topic appeared in a conversation. IM N = 55, email N = 23, phone N = 47, visit N = 58 P-values compare Instant Messaging to the other modalities\*

### Who do teenagers talk to through IM?

Teens in our interview sample reported communicating through IM most often with people they know offline. Very few of them mentioned communicating by IM with strangers. Most teens seemed to understand their parents' concerns about talking to strangers through IM. One teen describes her parents concerns this way:

“Pam: Yeah my dad the other day... After that girl got kidnapped he was like, you better not be talking to people you don't know on the Internet and giving them your personal information. I'm like, I'm not stupid...”

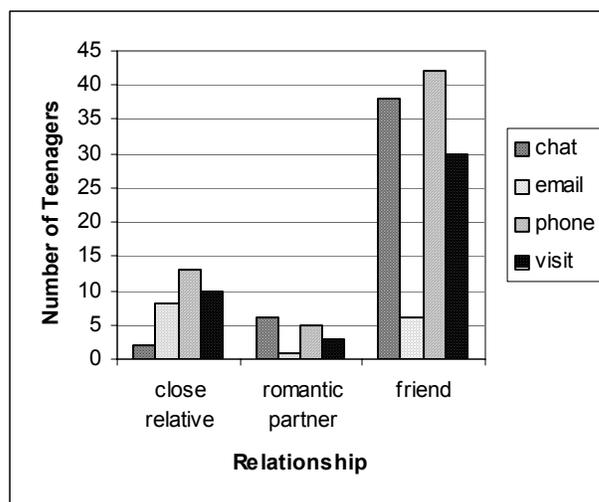
Most often teens said they communicated with their friends whom they see in school every day. Twenty-one out of 25 (84%) teens mentioned talking to friends from school through IM. Eleven (44%) teens mentioned using IM to communicate with family members such as cousins and siblings away at college.

Adolescents in our interviews seemed to mostly communicate by IM with friends who live nearby. Fourteen teens (56%) remarked that they used IM to speak to people in the same town. IM also allowed them to talk to other people who they did not see on a regular basis, such as friends from previous school, friends from summer camp or friends from church. These are friendships that would have been more difficult for these teenagers to maintain if it were not for IM.

“Edward: Yeah. I have lots of friends at my church, because that's where I hang out. That's like the place to be. So lots of them live all over the place so that's how... [using IM]... that's really my only way of communicating with them because the phone bill, if I would call them all, would be outrageous.”

The survey data show a significant negative correlation between frequency of using IM with a communication partner and distance from the partner ( $r=-.22$ ;  $p<.05$ ). Also, there is a positive correlation between frequency of using IM and in-person communication with partner ( $r=.42$ ;  $p<.001$ ). This indicates that the closer the respondent lives to a person, the more she or he uses IM to communicate with that person; and the more they see each other, the more they communicate by IM.

In our survey data, 69.1% of those who teenagers communicate with by IM are their close friends or friends, 10.9% are their boyfriends/girlfriends, and 3.6% are close relatives (see Graph 1.) Chi-square tests indicated that teens' patterns of relationships differ for different communication modalities. Teens use IM, along with phone and visits to communicate with friends and romantic partners, and rarely use IM to communicate with



**Graph 1. Relationship to partner by communication type**

close relative. In contrast email is used comparatively frequently to communicate with close relatives. Most teens first met of their IM communication partners from common activities (72.7%) and very few met them online (3.6%).

Teens typically manage the people they speak to through IM through their Buddy List. The size of the buddy lists is bimodally distributed. Some teens seem have relatively few people on their buddy list (less than 50) while others have a much larger number (over 100). (See Graph 2 for an illustration of the distribution of the numbers of people on the buddy lists.) Those who had a large amount of people on their buddy list mentioned that they only talked to a smaller group of them

“Chuck: Whoever I talk to at school is on here. Actually, out of all these people I've probably talked to like 15. [...] That's how all my friends are - they have... like 100 buddies and talk to like 15. That's just the way it is, I don't know.”

Teens also organize their buddy list into groups. Teens that have a smaller number of people in their buddy list seem to leave the defaults of grouping provided by the IM software (in the case of AIM- Friends, Family and Co-Workers.) Teens that have a larger number of people in their buddy list are more likely to arrange their lists into their own groups. These groups seem to be separated by closeness of the relationship and by gender.

“Pam: Yeah “cool people.” Those are people I mainly hang out with and that I talk to a long time like on the phone and stuff - and like “males and females” - it's just people that I talk to sometimes at school like... I don't know, like hi, how are you kind of thing.”

Several parents reported being less concerned with their child's use of IM to talk to other people online, compared to other social activities on the Internet, because IM users have a buddy list. One parent explains how she feels about her child's use of IM compared to chat rooms:

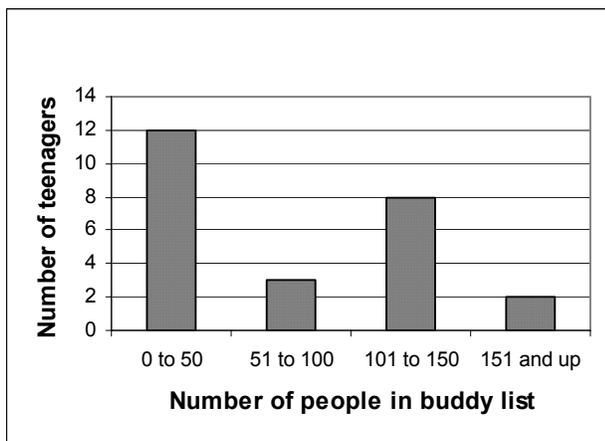
“But that's why she's not in the chat room ever - because at least with instant messenger you have more of a comfort knowing there's only a certain number of people who have...You have the buddy list or whatever- have her screen name. But we don't worry about that so...”

### What do adolescents talk about in IM conversations?

Our interview analyses showed that IM conversations typically consist of “chit chat.” Seventeen (68%) teens mentioned they use IM mostly for “chit chat.” Four (16%) teens mentioned that IM is good for making social plans with friends and 4 (16%) teens mention they use it for homework. One teen summarizes the main conversations held through IM this way.

“Joe: Mostly just... kind of like... just kind of BS and... just talk about, you know, what you been up to - just kind of silly stuff like... you know, just to pass the time. Asking... like I said ask them what they're up to - just kind of chitchat - nothing real important.”

Analysis of video tapes taken while interviewees were online shows that IM conversations consist of shorthand language and usually have a set beginning, middle part, and an end. The conversations start with general phrases such as “hey” and “whats up.” The middle portion of the conversation consists of the general “chit chat” that teens describe. The end of the conversations consists of phrases such as “g2g” (“got to go”) and “cya” (“see you.”) A sample of typical, but short IM conversation follows.



Graph 2. Buddy list size

abc123: hey  
 pgh1: hey  
 abc123: what r u doin today?  
 pgh1: nothin u  
 abc123: u wanna come over to watch the game [...]  
 pgh1: ya probably  
 abc123: alrite, see ya round 6 then  
 pgh1: k  
 abc123: cya

Teens mainly use IM for small talk. What follows is a sample conversation between friends about football.

footballfan1: ello  
 footballfan2: hey neil  
 footballfan2: whats up?  
 footballfan1: nothing much  
 can't wait for the game tonight  
 footballfan2: lol...who u rootin for?  
 footballfan1: probably New England  
 footballfan2: GO RAMS!!!!

We also found some evidence that teens turn to IM for social support, too. Teenagers do not seem to go to IM with the specific intention of seeking support from a friend, but could get emotional support spontaneously in an IM conversation. An example of such a conversation where a friend consoles another friend about breaking up with a boyfriend is shown below.

friend123: hey  
 friend123: sup  
 girl1: nm u  
 friend123: n2m chillin  
 girl1: kewl  
 girl1: how r things with u and jimmy r u ok?  
 friend123: were friends but he was up his camp this weekend so I haven't talked to him since late friday night  
 girl1: oo ic  
 girl1: well do u think things r gonna be ok?  
 friend123: like were ok... but he said he waats to try being friends but he dont think its gonna work

HomeNet survey data analyses supply additional insights comparing type of talk by IM with type of talk using other modes of communication. Teens used IM for “small talk” similarly to phone and face-to-face communication, but used email less for “small talk.” (See Table 1.) In particular, adolescents used IM more than email for chit-chat, joking or recapitulating the day, while there was no difference in using IM, phone, and face-to-face communication in either of these types of conversations.

When they discussed hobbies, they seemed to equally use IM, email or face-to-face, but hobbies were less discussed over the phone than by IM.

Adolescents reported using IM equally to telephone and face-to-face communication for “negative talk,” and especially, to complain or to ask for favors. (See Table 1.) When it comes to getting advice, IM was used more than the phone. Although there were no differences between using IM and the other three communication modalities in discussing relationships topics overall, romantic talk was preferably done by IM followed by face-to-face, while significantly less by phone and never by email.

Of the items that are not part of a scale, adolescents reported using IM more than email to gossip. When they wanted to “kill some time,” they were mostly using IM, while email was considered least suitable for “killing time.” (See Table 1.)

### **How do teenagers manage their online behavior?**

Teens tend to log in to IM when they expect their friends to be online and arrange their use of the computer accordingly. One teenager describes why she logs in at a particular time of night:

“Rachel: Mostly at night, around... I usually get home late because of things I do after school. But uh... So I usually use it at night around 9, 9:30 - cause, that's... Not only is that the time that I have time but also because that's when most of my friends are on, so I get to talk to them.”

Teens seem to follow a sequence for opening three applications (music, IM and email) when they log on the computer, as we found several very similar teenage online behavioral patterns in the videotaped interviews. 16% of the interviewees reported this as what they typically do when they go to the computer: after logging in, they start their music, quickly check their email account, and immediately switch to IM. Four teens (16%) remarked they started their music first (either through the Internet or through a CD) and 4 (16%) teens remarked they started IM first. Four teens remarked they started IM after starting another application, such as email and playing music.

Multitasking is another typical pattern of teen online behavior. Ten teens (40%) reported conducting an IM conversation while doing other activities on the computer. In addition to having multiple IM conversations, four teens (16%) mention playing music while instant messaging and a few teens mentioned doing their homework or checking their email at the same time.

“Sheila: I usually have like tons of windows open and doing like ten different things at least... A lot of them are at school and so they always have

like away messages because they're either not at their computer because they leave it on all the time or... um...”

Seven teens (28%) reported conducting several IM conversations while doing other activities on the computer. Teens reported conducting from 2 to 3 to up to 16 conversations at a time and 2 of the interviewees even reported talking on the phone while chatting on IM.

Analyses of the videotaped interviews indicated that teens work out certain strategies for managing several conversations at a time. For example, one teen minimized all windows but the active one and used flashing in the toolbar at the bottom of the computer screen as an indicator of someone having sent a message.

“Neil: I'm talking to this person, this person, this person... I type something to them and when they have something to say to me the uh, little button down here - the icon - it turns... flashes blue so I know that they responded and I just click on their uh, icon and talk and then click off and then... search some more.”

The interview video and text analyses also show that teens seem to rank their active IM conversations by importance, based on the contents (those conversation topics that are more important to the teen) and on the relationship with the person (closer friends are placed in a higher spot in the hierarchy.) For example, an IM conversation with a best friend talking about a breakup with her boyfriend would be more important than an IM conversation with a classmate about homework. These hierarchies seem to be constantly changing throughout an IM session, with friends logging on and off IM and the IM conversation topics continuously changing.

### **DESIGN SUGGESTIONS**

This paper provides a picture of how teens use instant messaging and how this use fits into teens daily lives. Teens intertwine IM conversations tightly with many parts of their lives that they carry out online--doing homework, checking up on friends, planning excursions, exchanging advice, and so forth. Applications that support this integration of online activity would be valuable for teenagers. One idea would be to have IM emulate more of the "hanging out" structure found in face-to-face communication. This emulation should be different from that found in public or private chat rooms that teens tend not to like. For example, a "virtual mall" could be created online in IM text format that resembles shopping malls where how hang out with their friends. IM now lets teens know who is online, but does not show them who is talking with whom. Such a feature would support breaking into casual conversations with other friends in the "virtual mall." When creating such applications, care should be taken to preserve the

flexibility, privacy, and presence information that teen's value in IM.

Multitasking is another IM phenomenon important to teens. Creating applications that support the multitasking that IM allows could be valuable for teens. Applications that take advantage of the multitasking strategies that teens develop to manage multiple IM conversations (i.e. flashing toolbar buttons, conversation hierarchies) and multiple computer tasks could be created to make switching between tasks easier for IM users.

## CONCLUSION

Our study confirms previous findings that teenagers are drawn to IM for many different reasons, the most important being the ability to carry on simultaneous conversations with several friends at a time and to talk with friends almost instantaneously while they are online. We further explored the mechanism of communication through instant messaging, comparing it to three other modes of communication (in-person, by phone and email).

Teens, we found, typically speak to people in their age group whom they also know offline. Most of the people they speak with through IM are friends who live in the same geographic area. Teens know when to expect their friends to be online and schedule their use of the computer accordingly.

IM conversations are usually seen as "chit chat" by teens. Most of their conversations center on topics such as what happened in school that day, mutual interests and hobbies and social invitations. A typical IM conversation has a clear beginning, middle, and end, and uses an abbreviated language. Multitasking with conversations and computer tasks is very common in teen IM use. Teens use a variety of strategies for managing multiple IM conversations.

When teens need to get advice, they often turn to IM. Romantic talk is as frequent in IM as it is in person, and much more than in email. IM is the preferred medium for gossip, too, followed by email.

Although our qualitative data findings are not generalizable-they are based on a sample from the Pittsburgh area, our survey data are from a national random sample and therefore can be generalized with more confidence. These data confirm that IM is a "killer ap" for teens. Our research points to ways that the

researchers and practitioners can build on IM to make it even more useful to them.

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## REFERENCES

1. Lenhart, A., Rainie, L., & Lewis, O. (2001). *Teenage life online: the rise of the instant-message generation and the Internet's impact on friendships and family relationships*. Pew Internet and American Life Project, [www.pewinternet.org](http://www.pewinternet.org).
2. Issacs, E., Walendowski, A., Whittaker, S., Schiano, D., & Kamm, C. (2002). The character, functions, and styles of instant messaging in the workplace. To appear in *Proceedings of CSCW*, New Orleans, LA.
3. Nardi, B., Whittaker, S., & Bradner, E. (2000). Interaction and outeraction: instant messaging in action. In *Proceedings of CSCW*, Philadelphia, PA, 79-88.
4. Volda, A., Newstetter, W., & Mynatt, E. (2002). When conventions collide: the tensions of instant messaging attributed. In *CHI 2002*, Minneapolis, MN, 187-194.
5. Herbsleb, J., Atkins, D., Boyer, D., Handel, M., & Finhold, T. (2002). Introducing instant messaging and chat in the workplace. In *CHI 2002*, Minneapolis, MN, 171-178.
6. Schiano, D., Chen, C., Ginsberg, J., Gretarsdottir, U., Huddleston, M., & Issacs, E. (2002). Teen use of messaging media. In *CHI 2002*, Minneapolis, MN, 594-595.
7. Grinter, R. (2001). "Hanging out with computers:" the role of IM in teenage communication. *Human Computer Interaction Consortium 2002*.
8. Silverman, D. (2000). Analyzing talk and text. In N. K. Denzin, & Y. S. Lincoln (Eds.). *Handbook of qualitative research*. Thousand Oaks, Calif. : Sage Publications.
9. QSR International Pty. Ltd. (1999-2001). QSR NVivo.