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Capitalizing on the Internet
Social Contact, Civic Engagement, and Sense of Community

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Abstract

How does the Internet affect social capital in terms of social contact, civic engagement, and a sense of community? Does online involvement increase, decrease, or supplement the ways in which people engage? Our evidence comes from a 1998 survey of North American visitors to the National Geographic Society website, one of the first large-scale web surveys of the general public. We find that online social contact supplements the frequency of face-to-face and telephone contact. Online activity also supplements participation in voluntary organizations and politics. Frequent email users have a greater sense of online community, although their overall sense of community is similar to that of infrequent email users. The evidence suggests that as the Internet is incorporated into the routine practices of everyday life, social capital is becoming augmented and more geographically dispersed.

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DEBATING THE INTERNET'S EFFECTS ON SOCIAL CAPITAL

How the Internet affects social capital is neither a trivial nor an obscure question. Scholars, pundits, and policymakers have long worried that the Industrial Revolution – and more recently, the Information Revolution – have led to the decline of community (Wellman, 1999). Although different analysts focus on different causes – from industrialization and bureaucratization in the 1800s to television and the Internet – they all have feared:

(a) The weakening of private community: social contact with kin, friends, workmates, and neighbors.

(b) The decline of public community: gatherings in public places, involvement in voluntary organizations, civic concerns, and commitment to community.

(c) The disengagement from community: positive attitudes towards community life and willingness to contribute to the well being of the community.

Most recently, Robert Putnam (1996, 2000) has documented a decline since the 1960s in American private and public community. But what if Putnam is only measuring old forms of community and participation, while new forms of communication and organization underneath his radar are connecting people? Some evidence suggests that the observed decline has not led to social isolation, but to community becoming embedded in social networks rather than groups, and a movement of community relationships from easily observed public spaces to less-accessible private homes (Wuthnow, 1991, 1998; Guest & Wierzbicki, 1999; Wellman, 1999, 2001; Fischer, 2001; Lin, 2001). If people are tucked away in their homes rather than conversing in cafes, then they may be going online: chatting online one-to-one; exchanging email in duets or small groups; or schmoozing, ranting, and organizing in discussion groups such as "list serves" or "newsgroups" (Smith, 1999; Kraut, Patterson, Lundmark, Kiesler, Mukopadhay, & Scherlis, 1998; Matei and Ball-Rokeach, 2001).

The rapidly expanding Internet has infiltrated North American life. More than half of the North American population has been online, e-commerce is growing, and both the mass and the scholarly media are fascinated with the technological and social wiring of society (Horrigan, Lenard, & McGonegal, 2001). The Internet's ubiquity has raised questions about whether its use is increasing or decreasing social capital. Utopians claim that the Internet is providing new and better ways of engaging in community and finding information (e.g., De Kerckhove, 1997; Lévy, 1997). However, dystopians argue that the Internet lures people away from their in-person communities and informed discussions (e.g. Slouka, 1995; Stoll, 1995).

While the debate surrounding the influence of the Internet on social capital has been ongoing, systematic data has only recently come to replace hype, hopes, and fears. (In addition to the chapters in this book, see also the reviews in Wellman & Gulia, 1999; DiMaggio, Hargittai, Neumann & Robinson, 2001; Flanagan & Metzger, 2001). Analysts have moved from seeing the Internet as an external world to seeing how it becomes integrated into the complexity of everyday life (for example, compare the first and second editions of Rheingold, 1993, 2000).

We contribute to the debate by asking if the Internet increases, decreases, or supplements social capital? We examine people's use of the Internet within the broader context of their offline social interactions – face-to-face and by telephone – as well as their information seeking habits – reading newspapers and going to libraries. We look at three forms of social capital:

a) Network Capital: The frequency of social contact with friends, relatives, and workmates. This is the private side of community.

b) Civic Engagement: Participation in voluntary organizations and political activities affords opportunities for people to bond, create joint accomplishments, and collectively articulate their demands (Curtis, Baer & Grabb, 2001; Eckstein, 2001; Schofer & Fourcade-Gourinchas, 2001;

Tilly, 1984). Such civic engagement is the public side of community, enshrined in the American heritage by Tocqueville (1835) and given fresh life by Putnam (2000).

c) Sense of Community: Social capital consists of more than interpersonal interaction and civic engagement. When people have a strong attitude toward community – a motivated and responsible sense of belonging – they should mobilize their social capital more willingly and effectively (Tilly, 1984; Diani & McAdam, 2002). This is the attitudinal side of community.

The evidence for our analysis comes from a large web survey of North American visitors to the National Geographic Society website in the fall of 1998. This chapter builds on an earlier, preliminary analysis of these same data (Wellman, Quan y Haase, Witte, & Hampton, 2001). We expand the preliminary analysis in several ways by: describing in more detail the users of the Internet; using more specific measures of email and web use; comparing online and offline contact; including information seeking in our analyses; and providing corrected and revised analyses of having a sense of community.

Does the Internet Increase Social Capital?

Early – and continuing – excitement about the Internet saw it as stimulating positive change in people's lives by creating new forms of online interaction and enhancing offline relationships. The Internet would restore community by providing a meeting space for people with shared interests that would overcome the limitations of space and time (Sproull & Kiesler, 1991; Baym, 1997; Wellman, 2001). Online communities would promote open, democratic discourse (Sproull, 1991), allow for multiple perspectives (Kapor, 1993), and mobilize collective action (Schwartz, 1996; Tarrow, 1999).

Although early accounts focused on the formation of online "virtual" communities (e.g., Rheingold, 1993), it has become clear that most relationships formed in cyberspace continue in physical space, leading to new forms of community characterized by a mixture of online and

offline interactions (e.g., Rheingold, 2000; Müller, 1999; Matei & Ball-Rokeach, 2001). Online interactions fill communication gaps between face-to-face meetings and make nonlocal ties more viable. Nonlocal community has been flourishing well before the advent of the Internet as people move frequently and sometimes far away. Cars, planes, trains, and phones maintain ties with family and friends; former neighbors and workmates become separated; immigrants keep contact with friends and relatives in their homelands (Wellman, 1999).

The possibilities of the Internet lie beyond their facilitation of interaction, for one of its most used features is the provision of information: easily, wide-ranging, up-to-date, and at low cost. Public debate becomes more broadly accessible as the digital divide narrows and most North Americans have some Internet access (Katz, this volume; NTIA, 2000; Reddick, 2000; Fong, et al., 2001). Governmental, non-governmental, and corporate organizations have made it their mandate to have a strong web presence that informs Internet users of their agendas (DiMaggio, et al., 2001). People can have a public voice by creating a website, discussing current issues on list serves, and expressing opinions through polls (Sunstein, 2001).

Putnam (2000) argues that the decline in social capital has not been a general decline in the American population as a whole but is a decline specific to younger generations. Yet, it is younger generations who have been the most active on the Internet even as they have eschewed traditional forms of community. They have gone online at a younger age, may have more years of experience than older generations, and are often savvier. Hence, the Internet has the potential to reverse the decline in social capital by providing a medium for younger generations to increase their social contacts, civic engagement, and sense of community. *If the Internet increases social capital, high Internet use should be accompanied by more offline social contact, civic engagement, and sense of community.*

Does the Internet Decrease Social Capital?

Dystopians argue that the Internet is fostering a decline in social capital and an increase in interpersonal alienation. For example, a longitudinal study of "newbies" (newcomers) to the Internet found that high Internet use was associated with lower social contact offline, and higher depression and loneliness. Although the Internet enhanced weak online ties, it simultaneously decreased stronger offline interactions (Kraut, et al., 1998; but see LaRose, Eastin, & Gregg, 2001).

The Internet may compete with other activities for time in an inelastic 24-hour day. There are discrepant findings about whether or not online time-sinks pull people away from other interactions inside and outside the household (Nie, 2001; Nie, Hillygus, & Erbring this volume say they do; Gershuny, 2001; Anderson & Tracy, this volume say they do not). Some researchers see a parallel in the impact of the Internet with the way that television has had an absorptive effect that reduced social interaction in the home (Steiner, 1963; Nie & Sackman, 1970; Wei & Leung, 2001). Yet, one-way broadcast television is quite different from socially interactive email and chatting online.

The Internet may foster contact with weak ties of acquaintanceship at the expense of socially-close ties. Weak ties provide new information and access to diverse networks while strong ties provide commitment, friendship, and supportiveness (Granovetter, 1973; Wellman & Wortley, 1990). However, not all uses of the Internet are social; much activity is *a*social, such as seeking information or engaging in solitary recreations. Obtaining political and organizational information from the Internet is affordable and convenient. Nevertheless, such Internet features as customization and personalization can narrow the spectrum of information obtained online (Sunstein, 2001). This can decrease the potential for serendipitous information retrieval, limit multiple perspectives, and create a false sense of unanimity. *If the Internet decreases social*

capital, high Internet use should be accompanied by less offline social contact, civic engagement, and sense of community.

Does the Internet Supplement Social Capital?

Where the Increase and Decrease arguments privilege the Internet by seeing it as radically changing how people interact offline, the Supplement argument gives this new technology less of a central role in shaping social trends. It treats the Internet as integrated into rhythms of daily life, with life online being an extension of offline activities. This suggests that the Internet's effects on society will be similar to the telephone: important and pervasive but evolutionary (Pool, 1977; Fischer, 1992). For example, British time-use data suggests that the Internet both helps arrange get-togethers and replaces them. There is a small positive association between increased Internet use and going out to socialize, but also a smaller negative association between Internet use and private socializing (Gershuny, 2001).

The Internet may be more useful for maintaining existing ties than for creating new ones (Koku, Nazer & Wellman, 2001; Koku & Wellman, 2002). It provides a convenient, affordable, and powerful supplement to telephone and face-to-face contact. For example, one study finds the Internet to be "a multidimensional technology used in a manner similar to other, more traditional technologies" (Flanagan & Metzger, 2001, p. 153). Face-to-face and telephone contact continue, complemented by the Internet's ease in connecting geographically dispersed people and organizations who are bonded by shared interests.[1]

The Internet may also provide a supplementary source of information for those interested in public affairs and governmental decision-making (Horrigan, Lenard, & McGonegal, 2001). Yet,

no radical shift of a person's habits may accompany Internet use (Howcroft, 1999). Nor might the Internet lead to organizational and political participation if users have no interest in such matters. Some evidence shows that it is the politically involved that uses the Internet for enhanced political participation (Johnson & Kay, 1999). For example, wiring Blacksburg Electronic Village did not produce major changes in interpersonal contact and community involvement (Kavanaugh & Patterson this volume; see also Uslaner, 2000). Similarly, organizations have often absorbed new information and communication systems without marked changes in their organizational communication structures and other forms of behavior (Orlikowski & Barley, 2001). *If the Internet supplements social capital, Internet use should add on to social contact, not affect civic engagement, and increase a sense of community. Thus, the level of Internet involvement will not be associated with either more or less offline activity.*

AN EXPEDITION TO STUDY USERS OF THE INTERNET

The National Geographic "Survey 2000"

The National Geographic Society "Survey 2000" was available to visitors to the Society's website, September-November 1998. It was publicized through the widely distributed, monthly *National Geographic* magazine, a prominent notice on the Society's homepage, and multiple public information sources. Although people around the world participated in the web-survey, we focus on the 20,075 North American adult participants who completed all of the questions we analyze here: 17,711 Americans (88 percent) and 2,364 Canadians (12 percent).[2] Even though

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[1] Our data and others (e.g., Wellman, Carrington, & Hall, 1988) show that other than ritual greeting cards, people rarely send letters through the traditional post anymore, even as the Internet itself boosts the sheer volume of written communication. It would be interesting to compare the effects of the Internet to that of the introduction of the telephone as a complement to and replacement for face-to-face and postal communication. For the beginnings of such analysis, see Fischer (1992); Wellman & Tindall (1993).

[2] "Survey2000" is available at *http://survey2000.nationalgeographic.com.* The community section was a module not presented to all respondents, thereby reducing our sample size. As we are interested in Internet users, and not of the general population, we do not report on 365 extreme newbies who encountered the Internet for the first time when completing the survey. The questions on personal visits with friends were given only to a sub-sample of 12,490

we do not have a random sample of the North American Internet-using population, comparisons with the 1993 and 1996 U.S. General Social Survey suggest that self-selection bias does not greatly distort estimates. However, the 1998 date of data collection calls for some caution in making inferences to current situations, for the percentage of North American adults has grown since 1998 and its demographic characteristics have changed.

National Geographic survey participants are rarely newbies. At the time of the survey, they have been on the Internet for a median of 36 months since fall 1995. More than three quarters (81 percent) had been online for at least one year when they took the survey, while only ten percent had been online for six months or less.

Survey participants report that the Internet is an important, but not dominant, means of communication for contact with socially-close friends and relatives. They use the telephone most often (an estimated 41 percent of all communications), followed by email (33 percent), face-to-face visits (22 percent), and more rarely, postal letter writing and greeting cards (4 percent).[3] Even among relatively heavy email users, those using it daily, email comprises less than half of their contacts with friends and kin (39 percent). Compared to the pre-Internet situation of thirty years ago, telephone use is higher now and face-to-face contact lower. As in pre-Internet days, people communicate almost as much with socially-close kin (45 percent of all reported informal

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respondents (62 percent of the total sample). Our research group collaborated in preparing the survey. We realize that the large sample size and non-random sample selection methods preclude any discussion of statistical significance. Nevertheless, we flag significant coefficients in the tables to provide a rough indicator of the magnitude of observed effects relative to variance found in our sampleSupplementary tables are available at www.chass.utoronto.ca/~wellman/publications. For other descriptions of these data, Witte, Amoroso, & Howard (2000); Chmielewski and Wellman (1999); Wellman, et al. (2001). Chen, Boase, and Wellman (this volume) analyze the worldwide sample.

communications) as they do with socially-close friends (55 percent), even though they have fewer kin in their lives than friends and acquaintances (Wellman, 1979; Fischer, 1982; Wellman, Carrington, & Hall, 1988).

What Do Internet Users Do Online?

Although dystopians fear the Internet will be socially alienating, the most frequent Internet activity is socially integrating: sending and receiving emails. National Geographic participants exchange emails more than five days per week, a mean rate of 278 days per year. Web surfing (163 days/year) is the second most frequent activity. As email and web surfing are by far the predominant activities on the Internet, this chapter focuses on them. However, Internet users engage in other activities on the Internet including:

- Real-time chatting without a time delay, such as Internet Relay Chat (IRC) or instant messaging (mean rate = 25 days/year);
- Playing multi-user online games, such as Doom and Quake (11 days/year);
- Visiting MUDs (multi-user dimensions), MOOs (multi-user object oriented environments), or other online role-playing environments (7 days/year).

Email is more widely used than chatting. It is longer established, and people can communicate without being online simultaneously. Game playing and participating in multi-user environments are immersive activities, appealing to specialized tastes and requiring more time and involvement than emailing, web surfing, and chatting.

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[3] Survey participants were asked: "How often do you have social contact with friends [relatives] who live more [less] than 30 miles (50 kilometers)" via four types of media (face-to-face contact, telephone, letter writing, and email). For each item, participants could answer: “Never”, “Rarely”, “Several Times a Year”, “About Monthly”, “About Weekly”, and “Daily”. We recoded these responses into days/year equivalents Overall sociability was obtained by adding all 16 items and counting each person’s reported contact with friends and kin, within and beyond 30 miles (50 km), and doing this separately for face-to-face, telephone, letter, and email contact. In some analyses, we combine face-to-face, phone and letter contact into a single “offline communication” variable.

Email. The most popular Internet activity, email, does not require much technical skill and fills communication gaps (Sproull & Kiesler, 1991; Wellman, 2001). Survey participants report that their email comprises 28 percent of their contacts with relatives and 37 percent of their contacts with friends. This compares with telephoning – 46 percent of their contacts with relatives and 35 percent of their contacts with friends – and face-to-face encounters – 21 percent of their contacts with relatives and 24 percent of their contacts with friends. Email has multiplier effects that telephone calls and face-to-face contacts rarely have: Broadcasting the same message to many people increases traffic because it often leads to multiple responses that spark responses back. Use leads to more use, although at some point, the sheer volume of traffic overloads the length (and probably the thoughtfulness) of messages (Jones, Ravid, & Rafaeili, 2002).

The number of months that people have been using the Internet is a strong – and the only meaningful – predictor of the amount of email they send and receive (ß=.34; Table 1; see also in this volume: Howard, Rainie, & Jones; Kavanaugh, & Patterson). The relationship is positive and linear (Figure 1), with email use increasing 13 percent for every year online. By contrast, demographic characteristics, such as age and education, are not appreciably associated with the frequency of email contact (although other studies show that socioeconomic status continues to predict to whether people use the Internet at all, see Fong, et al., 2001; DiMaggio, et al., 2001; see Chen, Boase, & Wellman's chapter).

> Table 1 about here: Effect of Demographic Characteristics on Internet Activities <

> Figure 1 here: Number of Months on the Internet by Frequency of Internet Use <

At least three reasons account for the association between the number of months online and the frequency of Internet use:

- Those who have been online for a long time may be more likely to be Internet enthusiasts. Veteran users are not only more likely to be online on a typical day, but to

engage in a greater variety of Internet activities (see the chapters in this volume by Howard, et al.; Nie, et al.).

- Experience makes veteran Internet users more savvy and more likely to use the technology to communicate.
- Veteran Internet users are more apt to have friends who are also active Internet users and hence, available to exchange email messages, play online games, and chat. As the Internet is a social technology, there is a network effect: The more people available for online interaction, the more the Internet is used (Rogers, 1983; Valente, 1995; Shapiro & Varian, 1998).

Web Surfing. Web surfing is the only Internet activity with appreciable differences. Men surf more frequently (β=.20): a mean of 190 days per year as contrasted with women's 137 (see also Singh, 2001). As is the case with email, no other personal characteristic is appreciably associated with the frequency of surfing the web.

As with email, the number of months using the Internet is associated with the frequency of web surfing (β=.18). However, the relationship between the number of months online and web surfing is different from email. It is weaker and, based on the descriptive results in Figure 1, is probably less linear. Web use is one of the first things that most people do. Newbies use it as often as email (Figure 1). Unlike email, web use does not increase with more Internet experience until people have been online for two years (see also Howard, et. al, this volume). The cross-sectional nature of the data do not allow us to investigate whether the relationship between the number of months online and web use is because (a) early adopters are a special population who surf the web often, or (b) more online experience leads to more web-surfing. Experience may make people more curious and adept at finding information online.

Chat, Games, and Role-Playing. Neither demographic characteristics nor the number of months online is associated with how often people engage in other social Internet activities: chats, online games, and multi-user role-playing environments. The only exception is that those without a university degree are more likely to engage in chat and play multiuser games (see also the chapters by Katz & Rice; Howard, et al.).

NETWORK CAPITAL

Communication with Far Away Kin and Friends

Email is useful for communicating with people who are far away because its costs do not increase with distance and its asynchronousness makes it easy to contact people living in other time zones. Do these characteristics enable the Internet to fulfill the utopian dream of compressing the map of the world so that communication with those who are far away is as frequent as with those who are nearby? The more refined sample and measures used here to answer these questions differ to some extent from the preliminary analysis reported in Wellman, et al. (2001) which suggested that the frequency of email contact is independent of the frequency of face-to-face and phone contact.

Even in the Internet era, distance still constrains communication (see also Hampton & Wellman, this volume). Only a minority of contact (30 percent) is with friends and relatives living "far-away": beyond 30 miles/50 kilometers. Email is the most frequently used communication medium for distant relationships. It is used for 59 percent of all distant social contacts: in particular, 49 percent of all social contact with far-away kin and 62 percent of all social contact with far-away friends (Figure 2). The telephone is the second most used communication medium for distant social contact (24 percent), used for 35 percent of all social contacts with far-away kin and 22 percent with far-away friends. Face-to-face contact is rare (9 percent): 8 percent of all social contact with far-away kin and 9 percent with far-away friends.

> Figures 2-5:Social Contact with Kin and Friends Living Far-Away and Nearby By Medium Used and Frequency of Email Use<

Communication with Nearby Kin and Friends

Is email only used for communicating with the distant reaches of the global village and not for local contact? The evidence is mixed. Unlike the situation for distant friends and relatives, the telephone (45 per cent) – and not email (24 per cent) – is the most used medium for contact with network members living "nearby": within 30 miles/50 kilometers. The telephone is used for 53 percent of all contact with nearby kin and 39 percent for all contact with nearby friends (Figure 2).

On the other hand, email is widely used for nearby contact. Email comprises 29 percent of all contact with nearby friends while face-to-face encounters comprise a similar 29 percent. Email comprises 17 percent of all contact with nearby kin while face-to-face encounters comprise 27 percent. Nearby friends are contacted three times as often as those further away (ratio=2.9); nearby kin are contacted twice as often as those further away (ratio=1.9).[4]

People have more email contact with nearby friends (58 per cent) than with distant ones (42 per cent) because people have more friends living nearby than far away. By contrast, they have less email contact with nearby relatives (40 per cent) than with distant relatives (60 per cent). Daily users of email use the medium most frequently to communicate with nearby friends (120 days per year), followed by distant friends (86 days per year), distant kin (71 days per year), and the less numerous nearby kin (49 days per year). For daily users of email, three-fifths (58

[4] We produced these ratios by calculating the proportion of frequency of one relationship by another. Thus, the ratio "nearby friend /distant friend" for contact via email is 86/62 days per year=1.39:1. In this example, the mean annual communication via email with nearby friends is divided by the mean annual communication with distant friends.

percent) of their email contact with friends is with those living nearby, as is two-fifths (41 percent) of their email contact with kin (Figure 2).

More friendship contact than kinship contact is local. Personal visits occur 9.8 times more often with nearby friends than with distant ones, and telephone contact occurs 5.2 times more often with nearby friends than with distant ones. Kinship relations are less local, with the ratios between distant and nearby social contacts with kin smaller: personal visits occur 6.7 times more often with nearby kin than with distant ones, and telephone contact occurs only 2.9 times more often with nearby kin than with distant kin. As kinship relations are usually more densely-knit than friendship, kinship systems are better at fostering frequent contact than are friendship ties. Hence, distance does not reduce social contact to the extent it does in friendship relations.

Who Uses the Internet for Social Contact?

The number of months that people have been online is related to their overall use of the Internet (Wellman, et al., 2001). As email is the most common Internet activity, it is not surprising that the longer people have been online, the more they use email to communicate with friends far away (β=.11) and nearby (β=.15; Table 2). However, the number of months people have been online is only slightly related to email communication with kin, both far away (β=.07) and nearby (β=.06). This suggests the possibility that kinship continues to be the relatively stable core of man people's personal communities (as Wellman & Wortley showed for pre-Internet days, 1989, 1990), while online contact with friends increases over time.

As friends are more numerous than kin and more variable in their contact, email is especially useful for increasing network capital. However, the lack of associations between the number of months people have been online and the extent of their face-to-face and telephone social contact suggests that the Internet neither increases nor decreases other forms of social contact.

The data give some hope that higher Internet use by younger generations may eventually bolster community. Younger adults (18-29) have higher levels of social contact (ß=.10). Single participants socialize more with friends, both by email and offline, in comparison with married participants and those living non-maritally with a partner.

> Table 2 about here: Effects of Demographic Characteristics, Seeking Information, and Number of Months Online on Online and Offline Social Contact <

Online and Offline Contact

Does email increase, decrease, or supplement in-person and telephone interactions? In the information age, where speed plays a crucial role, email could become the communication medium of choice. Not only does it overcome time and space constraints, email is cheap, ubiquitous, and convenient. On the other hand, email's lack of social presence may hinder rich, fulfilling interactions (Daft & Lengel, 1986).

The data are complex, showing that, depending on the circumstances, email use increases, supplements, and decreases offline social contact.[5] The positive regression coefficients in the first column of Table 3 support the increase argument. The strongest beta coefficients in the regressions are for the interplay between the frequency of email and offline contact for specific combinations of distance and role relations:

- The frequency of emailing nearby relatives is associated with the frequency of telephone (β=.19) and face-to-face contact (β=.10) with them.
- The frequency of emailing nearby friends is associated with the frequency of telephone (β=.31) and face-to-face contact (β=.24) with them.

- The frequency of emailing far-away relatives is associated with the frequency of telephone (β=.20) and face-to-face contact (β=.11) with them.
- The frequency of emailing far-away friends is associated with the frequency of telephone (β=.26) and face-to-face contact (β=.16) with them.

> Table 3 about here: Effect of Email Contact and Seeking Information on Offline Contact <

In each situation, the association between the frequency of email and telephone contact is stronger than the association between the frequency of email and face-to-face contact.[6] This suggests that the processes leading to email and telephone contact are more similar than those leading to face-to-face contact. Although face-to-face contact often happens through the unplanned juxtaposition of people in a physical space, telephone calls and email messages are more voluntary. The especially strong associations between emailing nearby friends and phoning and seeing them highlights the importance of email as an important, complementary component of voluntary local interaction (Hampton, 2001; Hampton & Wellman, 2002).

Email increases the overall amount of social contact with friends and relatives, living nearby and far away. (We caution that unlike the regression coefficients in Table 3, the trend lines in Figure 2 do not control for the effects of other variables.) The Total lines in Figure 2 show that overall contact (including email) is markedly higher for daily email users than for those who never use email: +255 percent for far-away friends (Figure 2d); +149 percent for far-away kin (Figure 2c); +40 percent for nearby friends (Figure 2b); although only +10 percent for the smaller number of nearby kin (Figure 2a). People rarely communicate by traditional post.

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[5] Overall offline social contact was calculated by adding all reported face-to-face, telephone and letter contact with kin and friends within and beyond 30 miles (50 km) in days per year. Note that the results in this section are somewhat different from those preliminary reported in Wellman, et al. (2001) because of changes in the sample size and more precise measurement of contact.

[6] Unstandardized regression coefficients not shown here, were also used for this analysis.

For distant relationships, high email use increases phone contact and supplements face-to-face contact. Daily email users have higher phone contact than those who never email with friends (+32 percent; Figure 2d) and relatives (+20 percent; Figure 2c). Face-to-face contact, rare among such physically distant relationships, is essentially unchanged. It is not possible to tell with these data if email use is actually fostering more offline contact, or if gregarious people are taking advantage of an additional communications medium to supplement their social contact.

The situation is different for nearby relationships where high email use is associated with slightly lower telephone and face-to-face contact. Daily users have 9 percent less telephone contact with nearby friends than those who never email and 3 percent less telephone contact with nearby kin (Figures 2a and 2b). The decrease is similar for face-to-face contact with nearby friends (-13 percent) but more marked for face-to-face contact with nearby kin (-31 percent; Figures 2a and 2b). However, when email is taken into account, total contact is higher for daily email users as compared to those never using it: +40 percent for contact with nearby friends and +10 percent for contact with nearby kin.

CIVIC ENGAGEMENT

Organizational Involvement

The Internet supplements other forms of organizational involvement, rather than increasing or decreasing them. Neither long-term Internet use nor frequent current use are related to the extent of organizational involvement (Table 4).[7] The only noteworthy association is that frequent visitors to multi-user environments such as MUDs (β=.10) are slightly more likely to participate

[7] Twenty items asking about organizational participation measured organizational involvement. Survey participants were asked to indicate the extent to which they were involved in different organizations. The options were "not at all", "am a member", and "am an active member". From the 20 items, a scale measuring the degree of organizational involvement for each participant was constructed by summing the number of memberships for each item, with membership including both members and active members. Thus, for each participant a score was obtained that

in organizations. Multi-user environments, with their structured role-playing and social controls, are in some sense, a type of organization. However, few survey participants are involved in multi-user environments.

> Table 4 about here: Civic engagement <

Traditional communication media continue to be important: The more often people contact friends offline (β=.14), the more they are involved with organizations. By contrast, frequent social contact using email is not associated with organizational involvement. It could be that the persuasive power of face-to-face and telephone contact is more powerful than email in drawing people into participating in organizations. However, it could also be that organizational participation increases face-to-face and phone contact through group meetings and interpersonal follow-up.

Education is the strongest predictor of organizational participation (see also Putnam, 1996, 2000). The most highly educated, the 23 percent of the survey participants with a graduate degree (β=.18), are the most organizationally involved. Unlike the situation for network capital (social contact), the frequency of Internet use and the number of months using the Internet are not related to organizational participation.

People who frequently seek information participate more in organizations (β=.14).[8] By contrast, frequent television watching is not associated with organizational participation. Seeking information is an active behavior performed by those who have an interest in such things as news, cultural events, or sports. Watching television for entertainment is more passive. The active information seekers are involved in organizations and not the passive television watchers.

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reflected the sum of all the activities engaged. Similar regression results were found for a scale measuring active membership only.

Political Participation

Does the Internet affect people's political participation by providing a new platform for debate and engagement, as Castells (1996) and others have suggested? The results show that the Internet supplements political activities but does not change people's levels of involvement (see Table 4).[9] Political participation is a social activity, with network members involving each other (Tilly, 1984; Tindall 1994; Diani & McAdam, 2002). More politically-active survey participants have more social contact with friends, both offline (β=.12) and by email (β=.09). Newbies are as likely as veterans to participate.

More education means more political participation. The most highly educated, with a graduate degree, are the more politically engaged (β=.11). By contrast with organizational participation, those with an undergraduate degree do not participate more in politics. Political participation is also more strongly associated with age than is organizational participation, with those between 40-65 being the most engaged.

The results support Putnam's (1993, 2000) argument that being informed is positively associated with political participation (β=.14). Educated information seekers – usually more interested in public debate, governmental decision-making, and political changes – are more likely to be politically active. By contrast, watching television has a slight negative association with political participation (β=-.07). Television is a solitary activity that decreases social involvement (Wei & Leung report similar results, 2001).

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[8] Three items measured seeking information: reading books, reading newspapers and magazines, and going to libraries. Participants were asked to indicate if they did each activity "often", "seldom," or "never". We use here a 0-3 scale counting if participants "often" use each of these three means of seeking information.

[9] The 13-item political participation scale is based on the participatory acts and political protest scale designed by the Roper Centre for Public Opinion Research (2001). One item was added: political participation on the Internet. For our study, we created a scale summarizing the number of activities in which a person is involved, with scores ranging from 0 (no participation) to 13.

SENSE OF COMMUNITY

General Sense of Community

If high use of the Internet supplements face-to-face and telephone contact, and if it affords greater political participation, then both network capital and political participation should foster a greater sense of community. This is not the case. There is no association between how long people have been on the Internet, the extent of their Internet use, and their general sense of community in everyday life (Table 5).[10] Veteran Internet users have about the same sense of community as newbies. The only association is with participation and offline social contact. Those who participate more in organizations (β=.18) and politics (β=.12) have a greater sense of community. Social contact offline with friends (but not with relatives) is associated with a slightly higher general sense of community (β=.10).

> Table 5 about here: Sense of Community

Sense of Online Community

Although people who have been on the Internet a long time have no greater general sense of community, they do have a greater sense of online community than those who have only been online for a short time (Table 5). People who exchange many emails with friends have a greater sense of general community online (β=.11), and people who exchange many emails with kin have a greater sense of community online with kin (β=.26).

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[10] Responses to 15 items were summarized into an overall sense of community scale. In addition, two measures of a sense of community online were guided by factor analysis (principal components analysis with orthogonal varimax rotation): a scale measuring a general sense of online community, and a scale measuring sense of community with kin online. Cronbach's alpha, measuring scale reliability, is .77 for the overall sense of community scale, .86 for the sense of community online scale, and .76 for the sense of online kinship scale. The results reported here correct a coding problem that distorted the preliminary findings in Wellman, et al. (2001). Note that in contrast to the findings here, Matei & Ball-Rokeach (2001; this volume) report a small positive association between Internet connectivity, participation in community organizations, and a general sense of community.

By contrast, frequent "real time" chatting online (using instant messaging, etc.) is strongly associated with a general sense of online community (β=.36) although not with a more focused sense of online community with kin (β=.04). Online chatting is principally an environment for socializing, where friends meet to schmooze, form new bonds, and have serendipitous interactions. By contrast, kin are more apt to exchange email messages at their convenience, perhaps because communication in their long-established relationships does not have as frequent a need for instant contact. Surfing the web for recreational purposes also is associated with a general sense of online community (β=.14). Thus, exposure to the Internet leads towards perceiving online space as a positive medium for creating and sustaining community.

SOCIAL CAPITAL IN THE INTERNET ERA

The Users of the Internet

The general lack of relationship between demographic characteristics and Internet activities fit recent findings that the digital divide has been narrowing (see also DiMaggio, et al., 2001; Fong, et al., 2001; Kew & Wellman, 2002; Katz, this volume; NTIA, 2000; Reddick, 2000). Affluent, university educated, white men no longer predominate. Internet use is associated more with behavior than with social status. People who have been on the Internet longer, and thus are likely to be more familiar with the technology, engage in more types of Internet activities more frequently (see also Howard, et al., this volume).

Internet use is not a uniform activity: People engage in both social and asocial activities when online. On the one hand, the Internet is a tool for solitary activities that keep people from engaging with their communities. On the other hand, not all online activities compete with offline interactions. The time people save because they shop online may be spent in socializing offline with family and friends.

The earlier people began using the Internet, the more they use it. We wonder if a plateau will eventually be reached where longer experience online will no longer be associated with more use of the Internet. Heavy email and chat traffic, or finding 1,000+ results on a search engine, can overload users (Brown & Duguid, 2000; Jones, Ravid, & Rafaeili, 2000; Thorngate, 1990). Time is inelastic (even with multitasking), and at some point, Internet use should plateau (see the chapters by Nie, et al., Neustadtl, Robinson, and Kestnbaum; Robinson, Kestnbaum, Neustadtl & Alvarez).

Network Capital

How does the Internet affect social capital in terms of social contact, civic engagement, and sense of community? In terms of social contact (network capital), it is clear that using the Internet frequently does not substantially decrease using other communication media for contact with far-away friends and relatives. Telephone contact continues to be frequent with those living both nearby and far away. Frequent email use is not appreciably associated with (already-rare) face-to-face contact with friends and relatives who live far away. These rare, often ceremonial, events happen as frequently for heavy and light email users. However, frequent email use is associated with lower amounts of face-to-face contact with friends and, especially, relatives living nearby. Although the trend lines in Figures 2a and 2b show these slight negative relationships, the trend lines do not take into account the effects of other variables. Indeed, the regression coefficients in Table 3 do not show any association – negative or positive – between the frequency of offline and online contact. The absence of any association in the regressions suggests that other factors besides email use may be responsible for the slightly lower offline contact of frequent email users.

The data also suggest that about a third of all contact is with distant network members, those living more than 30 miles away. We suspect that active contact with distant friends is higher than

has normally been the case: Email, along with the telephone and long-distance means of transportation (from freeways to airways) is supporting the maintenance of active relationships with a sizeable number of distant friends and relatives. The proportion of distant ties in personal networks is high, as is the frequency of contact with them.

Our cross-sectional data cannot accurately show if email use actually increases or decreases face-to-face and telephone contact, or if other factors may be operating. For example, gregarious people may seize upon email as a welcome additional means to communicate with distant friends and relatives. In this case, email use supplements high levels of face-to-face and telephone contact, but does not "cause" these levels.

Most Internet contact is with people who live within 30 miles/50 kilometers. Within 30 miles, the Internet is important but trails face-to-face and telephone contact in the frequency of interactions with friends and relatives. Beyond 30 miles, people have less overall contact but rely on email proportionately more. Email joins the telephone as the everyday means for keeping long-distance ties connected.

Email use increases network capital by supplementing existing levels of face-to-face and telephone contact. For all forms of relationship – kin and friend, near and far – email increases the total volume of social contact by adding its connectivity to continuing levels of face-to-face and telephone contact. Thus, the overall volume of communication is higher with high Internet use. People still keep visiting and phoning, but they also email. Email adds on to face-to-face and telephone contact as one more medium to communicate with friends and relatives.

The continued use of face-to-face and telephone contacts suggests that they provide unique ways of communicating for which the Internet cannot substitute. Among friends, frequent use of the Internet is associated with frequent offline contact. The data show that people continue

socializing via different media. Thus, the Internet is a new and viable form of managing social life.

Our research does not support assertions that the Internet has markedly changed people's patterns of interaction or is socially alienating. The overall volume of communication goes up with frequent email use even when telephone and face-to-face contact is a bit lower. The lower rate of face-to-face and telephone contact with nearby friends and relatives would be cause for alarm only if email was seen as an inadequate form of social contact, yet it is abundantly clear that email provides a wide range of sociability and support (Wellman & Gulia, 1999). The positive association between email use and a sense of online community suggests that email is valued for communication.

Rather than forming a unique entity, the Internet has become a part of everyday life. Those who have been online longer are especially apt to combine email contact with face-to-face and telephone contact. This suggests that there has been unwarranted fear that the Internet will destroy community.

Civic Engagement

Internet use supplements existing offline participation in organizations and politics. We had expected that the possibilities of the Internet would counteract a decrease in civic engagement. However, the data do not support utopian hopes that the Internet draws people to greater civic engagement. On the other hand, the data also do not support dystopian fears that the Internet isolates people and reduces civic engagement. Rather, the Internet provides a new sphere for those already civically involved to pursue their interests in an additional way.

The Internet does not appear to be impelling younger generations to be more politically involved than older generations. Although the Internet provides a viable alternative for acquiring political information and becoming politically active, the youngest and least educated remain the

least active. A generational and educational gap still exists, with older generations being more active in politics and the well-educated being more active in voluntary organizations as well as politics.

Sense of Community

Frequent use of the Internet turns people on, not off. Involvement in the Internet is the best predictor towards having a positive attitude towards community online. The correlations between active community behavior and a sense of community are specific: Frequent online communicators with friends have a positive sense of online community, while frequent online communicators with kin have positive feelings towards the Internet as a facilitator of kinship relations. The positive associations argue against contentions that the Internet is alienating. Our findings suggest that the Internet provides a sphere for social interaction, for people to meet others with similar interests, and for the creation of social cohesion.

Frequent Internet use has a different effect on having a general sense of community than it does on having a sense of *online* community. On the one hand, frequent Internet use is not associated with either an overall sense of community or feeling alienated. It neither turns people on nor turns them off from an overall sense of community. On the other hand, the more people use the Internet, the more positive their sense of online community.

Our findings suggest that the Internet is neither fulfilling the utopians' dreams of greater community euphoria nor evoking the dystopians' nightmares of greater alienation. Those who spend more time online value the Internet for its positive social virtues as a space for supportive social interactions to flourish. Online encounters function as positive feedback, increasing use of the Internet. Using the Internet may also be leading people to realize that complementary and alternative ways of finding community exist online in addition to those available offline.

The Internet and Social Capital

Taken together, our results suggest that the Internet is increasing social capital, civic engagement, and developing a sense of belonging to online community. We suspect that people not only have more relationships than in pre-Internet times, they are in more frequent contact with their relationships, and the strengthening of the bonds through more frequent contact means that ties can be more readily mobilized for aid. The experiences of frequent Internet users probably provide the best window into the future, as more people come to use the Internet and as more people use it frequently and routinely.

What of the two nagging anomalies with our account? First, while high email use is associated with a greater sense of online community, it is not related to either a higher or a lower sense of overall community. Second, high email use with nearby friends and relatives is related to somewhat less offline contact with friends and relatives. These two findings might signal a slight shift to online relations at the expense of offline relationships. However, the nature of the survey questions about sense of online community suggests that people are expressing the pleasure they feel in increased communication with kin and friends that was not possible before. In perspective, these findings suggest the continuing flourishing of community, the new role of the Internet in maintaining and increasing social capital, but also some shift in emphasis from the local and the proximate to the distant and the ethereal (see also Hampton & Wellman, this volume).

Our research shows no single Internet effect. At a time of spatially dispersed community, the Internet facilitates social contact that supplements face-to-face and telephone contact. At a time of declining civic engagement, the Internet provides tools for those already involved to increase their engagement. At a time of partial identity with multiple personal communities, the Internet provides another means for feeling connected with friends and kin. Rather than weakening other

forms of community, those who are more active offline are more active online – and vice-versa. In this way, people are incorporating the Internet into their everyday lives even as the Internet is quietly fostering the changing composition of social capital.

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Table 1: Effect of Demographic Characteristics on Internet Activities

	***Email*[a]**	***Surf Web*[a]**	***Chat, IM*[a]**	***Multiuser Environment*[a]**	***Online Games*[a]**
Gender *(Male=1)*	-.022	.196	.060	.073	.046
Age *(Reference=30-39)*					
18-29	-.035	-.011*	.027	.030	.045
40-49	-.008*	-.055	-.024	-.022	-.058
50-65	.027	-.120	-.059	-.038	-.067
66+	.011*	-.088	-.049	-.031	-.008*
Race *(Reference=White)*					
Asian	.013*	.008*	.007*	-.003*	-.004*
Black	.000*	.012*	.013*	.015	.031
Other	-.012*	-.004*	.024	.018	.002*
Education *(Reference=Undergraduate Degree)*					
High School or Less	-.022	.005*	.052	.015*	.045
Undergraduate Degree	.034	-.049	-.149	-.070	-.098
Graduate Degree	.057	-.094	-.151	-.069	-.114
Marital Status *(Reference=Married)*					
Single	.032	.043	.082	.029	.028
Living Non-Maritally with Partner	.016	.040	.053	.018	.029
Employment *(Reference=Employed)*	.015	-.017	-.047	-.005*	-.017
# of Months on the Internet	.340	.177	.104	.104	.052
Adjusted R^2	***.129***	***.106***	***.076***	***.031***	***.044***

*Indicates non-significant coefficients (p>.05)

[a] Ordinary least squares (OLS) estimated standardized (beta) coefficients

Table 2: Effects of Demographic Characteristics, Seeking Information and Time Online on Email and Offline Social Contact

		Relatives				*Friends*			
		Email		*Offline*		*Email*		*Offline*	
Variables	***Overall Social Contact[a]***	***Far[a]***	***Near[a]***	***Far[a]***	***Near[a]***	***Far[a]***	***Near[a]***	***Far[a]***	***Near[a]***
Gender *(Male=1)*	-.045	-.083	-.050	.051	-.055	-.024	-.019	-.004*	.017
Age *(Reference=30-39)*									
18-29	.102	.025	.000*	.042	.000*	.076	.060	.052	.101
40-49	-.059	-.012*	-.022	-.027	-.032	-.033	-.048	-.014*	-.040
50-65	-.009*	.043	.055	.007*	.037	-.032	-.038	.003*	-.026
66+	.015*	.024	.046	.007*	.037	-.024	-.010*	-.012*	.009*
Race *(Reference=White)*									
Asian	-.019	-.008*	.007*	-.015	-.017	-.007*	.006*	.006*	-.029
Black	.007*	-.010*	.004*	.016	.032	-.002*	-.004*	.016	-.006*
Other	.011*	-.010*	.015*	.004*	.017*	.005*	.001*	.023	.005*
Education *(Reference=Some College)*									
High School or Less	.001*	-.007*	.009*	-.022	-.015*	.001*	.008*	.012*	.009*
Undergraduate Degree	-.027	.016*	-.035	.024	-.050	.005*	.014*	.001*	-.043
Graduate Degree	.003*	.022	-.040	.046	-.056	.037	.030	.023	-.013*
Marital Status *(Reference=Married)*									
Single	.129	-.018	-.004*	-.043	-.078	.129	.138	.105	.165
Living Non-Maritally With Partner	.001*	-.019	.003*	-.026	-.061	.026	.045	.011*	.012*
Employment *(Reference=Unemployed)*									
Employed	-.054	-.064	-.008*	-.048	-.031	-.070	.011*	-.026	-.026
Watch Television	-.024	-.014	-.004*	.005*	.009*	-.030	-.021	-.023	-.020
Seeking Information	.068	.032	.014*	.038	.029	.033	.028	.015	.070
# of Months on the Internet	.080	.072	.064	.003*	-.030	.111	.148	.016	.004*
Adjusted R^2	***.069***	***.022***	***.011***	***.013***	***.024***	***.060***	***.069***	***.021***	***.065***

*Indicates non-significant coefficients (p>.05) [a] Ordinary least squares (OLS) estimated standardized (beta) coefficients

Table 3: Effect of Email Contact and Seeking Information on Offline Social Contact

Variables	*Offline Social Contact*[a]	*Social Contact with Relatives Offline*[a]	*Social Contact with Friends Offline*[a]	*Relatives*				*Friends*			
				Visits		*Telephone*		*Visits*		*Telephone*	
				Far[a]	*Near*[a]	*Far*[a]	*Near*[a]	*Far*[a]	*Near*[a]	*Far*[a]	*Near*[a]
Gender *(Male=1)*	-.049	-.048	.030	.009*	.000*	-.024	-.066	.003*	.064	.009*	.002*
Age *(Reference=30-39)*											
18-29	.075	.010*	.088	.016*	.008*	.028	-.004*	.008*	.088	.018*	.073
40-49	-.054	-.034	-.028	-.011*	-.027	-.012*	-.028	.018	-.023	-.018*	-.031
50-65	.013*	.023	-.014*	.011*	.010*	.025	.014*	.021*	-.007*	.002*	-.029
66+	.043	.019*	.007*	.016*	.019*	.003*	.010*	.010*	.018*	-.013*	-.008*
Race *(Reference=White)*											
Asian	-.039	-.024	-.025	-.015*	-.017	-.008*	-.021	.017*	-.026	.008*	-.034
Black	.009*	.035	.011*	.027	.024	.011*	.028	.011*	-.011*	.014*	.018
Other	.006*	.017*	.013*	.029	.014*	.014	.005*	.031	.010*	.007*	-.002*
Education *(Reference=Some College)*											
High School or Less	-.027	-.019*	.021	-.016*	-.015*	-.016*	-.013*	.014*	.022	.019	.003*
Undergraduate Degree	.045	-.035	-.050	-.008*	-.041	.020*	-.035	-.015*	-.060	-.002*	-.036
Graduate Degree	.050	-.032	-.011*	-.002*	-.037	.034	-.039	.004*	-.029	.013*	-.007*
Marital Status *(Reference=Married)*											
Single	-.096	-.094	.117	-.027	-.028	-.060	-.097	.020*	.104	.066	.090
Living Non-Maritally With Partner	-.064	-.065	.004*	-.024	-.046	-.019	-.057	.011*	-.005*	.004*	.012*
Employment *(Reference=Unemployed)*											
Employed	-.013	-.040	-.013	-.022	-.028	-.022	-.024	.002*	.002*	-.011*	-.020
Watch Television	-.029	.014*	-.014*	.005*	.004*	.013*	.016*	-.019	-.011*	-.004*	-.009*
Seeking Information	.110	.033	.065	.017*	.009*	.028	.023	.008*	.068	.003*	.047
# of Months on the Internet	-.025	-.041	-.032	-.014*	-.030	-.011*	-.034	.005*	-.015*	-.006*	-.041
Email with Relatives Close	.096	.171	-.020	.018*	.096	-.005*	.188	.024	-.034	-.021	-.028
Email with Friends Close	.141	-.009*	.296	-.002*	-.027	.001*	-.003*	.011*	.238	-.004*	.307
Email with Relatives Far	.095	.085	.027	.107	.014*	.200	.009*	-.013*	.028	-.010*	.023
Email with Friends Far	.121	.021	.098	.034	.015*	.034	.000*	.162	.015*	.261	.023
Adjusted R^2	.135	.074	.182	.019	.019	.054	.060	.031	.111	.082	.142

* Indicates non-significant coefficients (p>.05) [a] Ordinary least squares (OLS) estimated standardized (beta) coefficients

Table 4: Effect of Email Contact and Seeking Information on Civic Engagement

	Political Participation[a]	***Organizational Participation[a]***
Gender *(Male=1)*	.062	-.002*
Age *(Reference=30-39)*		
18-29	-.042	-.011*
40-49	.119	.086
50-65	.139	.083
66+	.064	.060
Race *(Reference=White)*		
Asian	-.009*	.012*
Black	.001*	.016
Other	.043	.043
Education *(Reference=Undergraduate Degree)*		
High School or Less	-.036	-.047
Undergraduate Degree	.035	.078
Graduate Degree	.109	.175
Marital Status (Reference=Married)		
Single	-.048	-.044
Living Non-Maritally with Partner	.000*	-.042
Employment *(Reference=Unemployed)*		
Employed	.002*	-.009*
Social Contact with Friends Offline	.122	.141
Social Contact with Relatives Offline	.032	.033
Social Contact with Friends Online	.090	.061
Social Contact with Relatives Online	.015	.002*
Watch Television	-.071	-.062
Seeking Information	.137	.138
# of Months on the Internet	.048	.032
Surf Web for Recreational Purposes	-.026	-.056
Engage in Chats, Instant Messaging	.074	.033
Visit MUDs, MOOs, Other Multiuser Environments	.078	.099
Play Multiuser Online Games	-.012*	.005*
Adjusted R^2	***.139***	***.135***

*Indicates non-significant coefficients (p>.05)

[a] Ordinary least squares (OLS) estimated standardized (beta) coefficients

Table 5: Effect of Social Contact, Seeking Information, Civic Engagement, and Internet Use on Sense of Community

	General Sense of Community[a]	***General Sense of Online Community***[a]	***Sense of Online Community with Kin***[a]
Gender *(Man=1)*	.029	-.019	-.085
Age *(Reference=30-39)*			
18-29	-.008*	-.085	-.035
40-49	.015*	.024	.012*
50-65	.026	.051	.058
66+	.015	.036	.053
Race *(Reference=White)*			
Asian	-.010*	-.009*	.002*
Black	.000*	-.011*	-.056
Other	-.006*	.002*	-.021
Education			
(Reference=Undergraduate Degree)			
High School or Less	-.032	.005*	-.024
Undergraduate Degree	.055	-.063	.021
Graduate Degree	.069	-.074	-.007*
Marital Status			
(Reference=Married)			
Single	-.063	.039	-.065
Living Non-Maritally with Partner	-.031	.024	-.011*
Employment			
(Reference=Unemployed)			
Employed	.041	-.031	-.023
Social Contact with Friends Offline	.104	-.083	-.031
Social Contact with Relatives Offline	.029	-.018	-.010*
Social Contact with Friends Online	-.002*	.107	.060
Social Contact with Relatives Online	.019	-.006*	.263
Watch Television	-.020	.004*	.004*
Seeking Information	.047	-.018	.011*
Political Participation	.122	.054	.033
Organizational Participation	.178	.032	.064
# of Months on the Internet	.024	.074	.064
Surf Web for Recreational Purpose	-.018	.140	.066
Engage in Chats, Instant Messaging	-.023	.361	.042
Visit MUDs, MOOs, MUSHs, other Multiuser Environments	-.014*	.072	.019
Play Multiuser Online Games	-.009*	.028	.015
Adjusted R^2	***.136***	***.279***	***.145***

*Indicates non-significant coefficients (p>.05)

[a] Ordinary least squares (OLS) estimated standardized (beta) coefficients

Figure 1. Number of Months on the Internet by Frequency of Internet Use

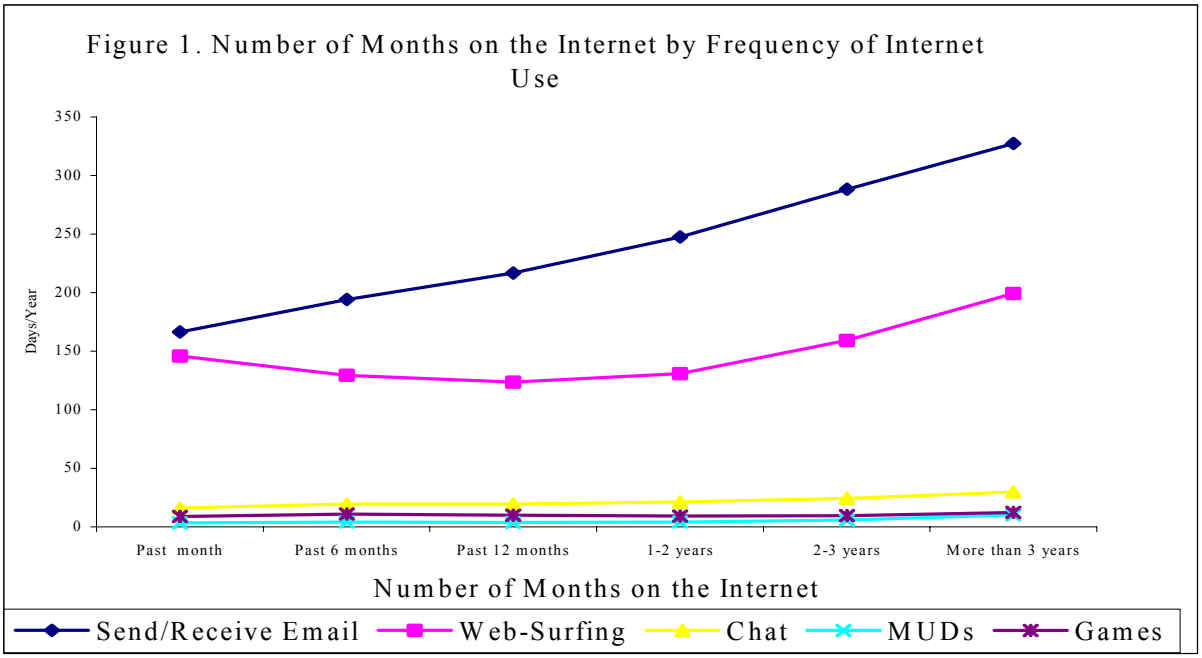

Figure 2a: Frequency of Contact with Near-by Kin (Days/Year)

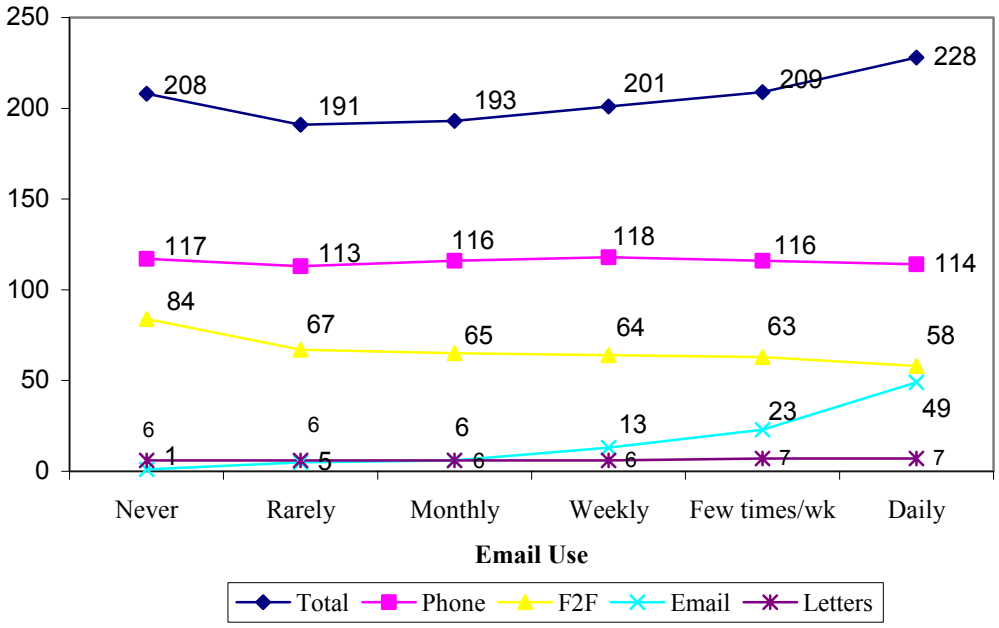

Figure 2b: Percentage of Different Media Used for Contact with Near-By Kin

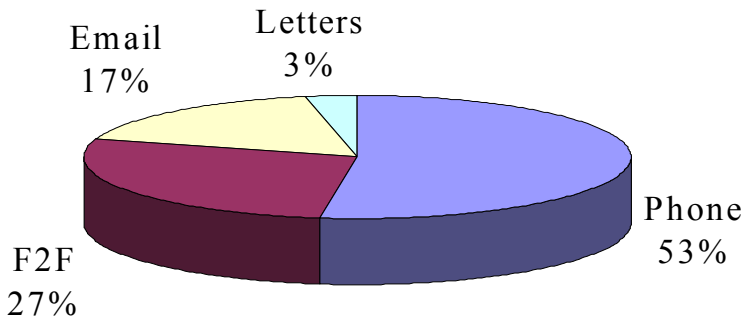

Figure 3a: Frequency of Contact with Near-By Friends (Days/Year)

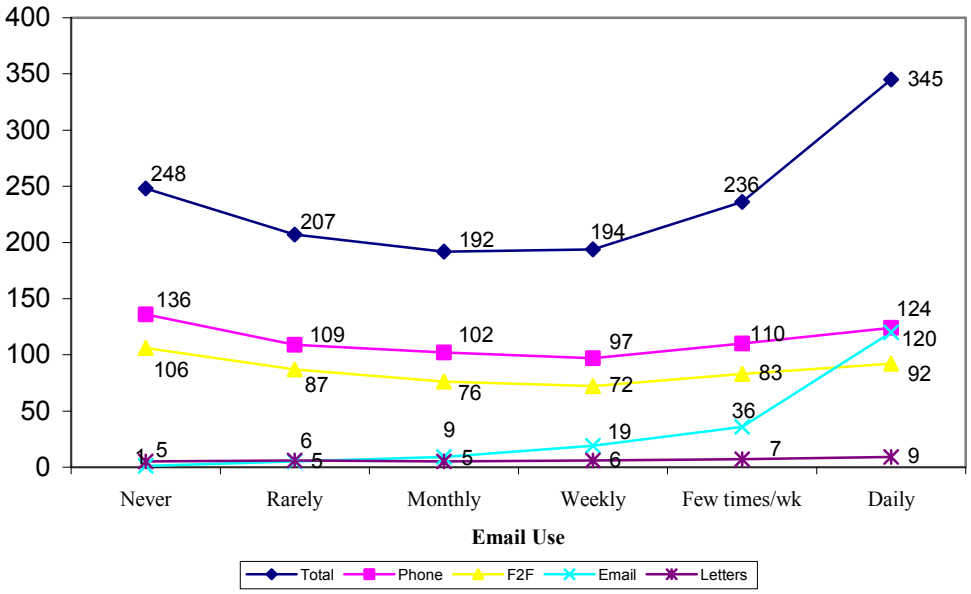

Figure 3b: Percentage of Media Used for Contact with Near-By Friends

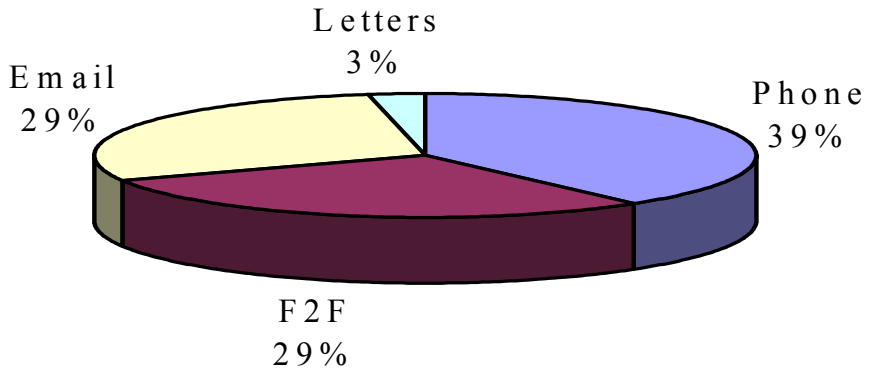

Figure 4a: Frequency of Contact with Far-away Kin (Days/Year)

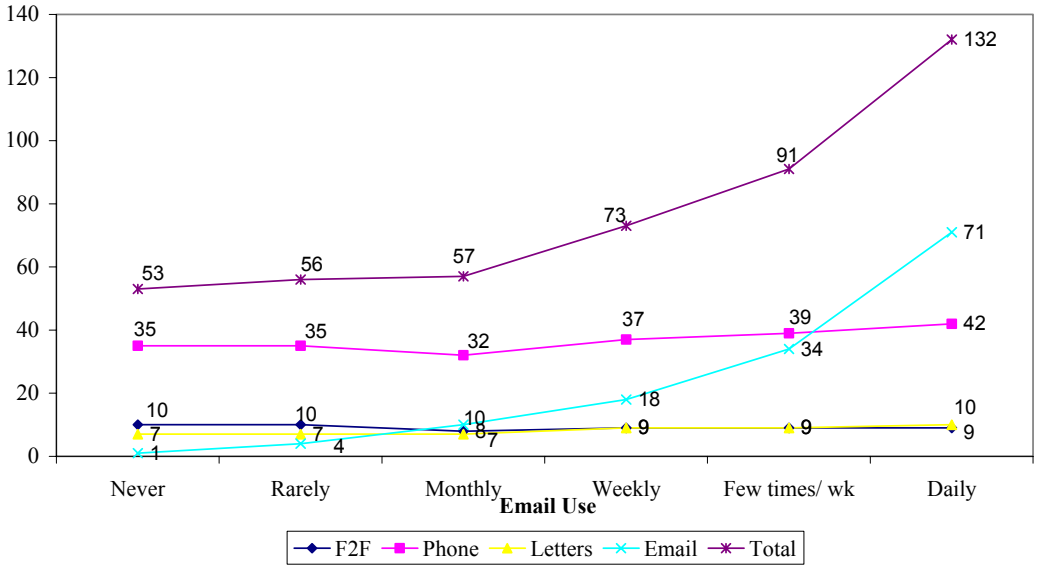

Figure 4b: Percentage of Media Used for Contact with Far-Away Kin

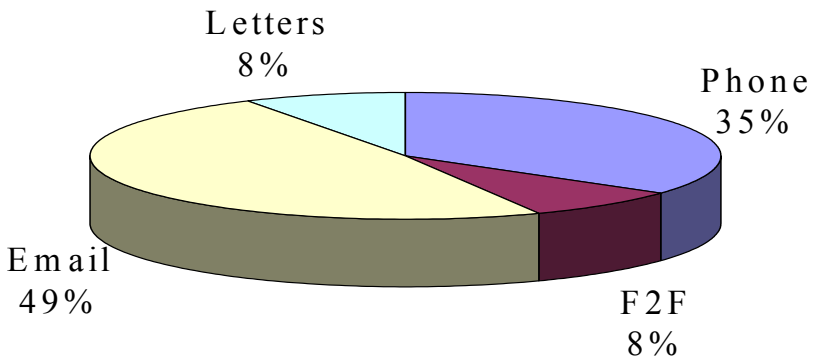

Figure 5a: Frequency of Contact with Far-Away Friends (Days/Year)

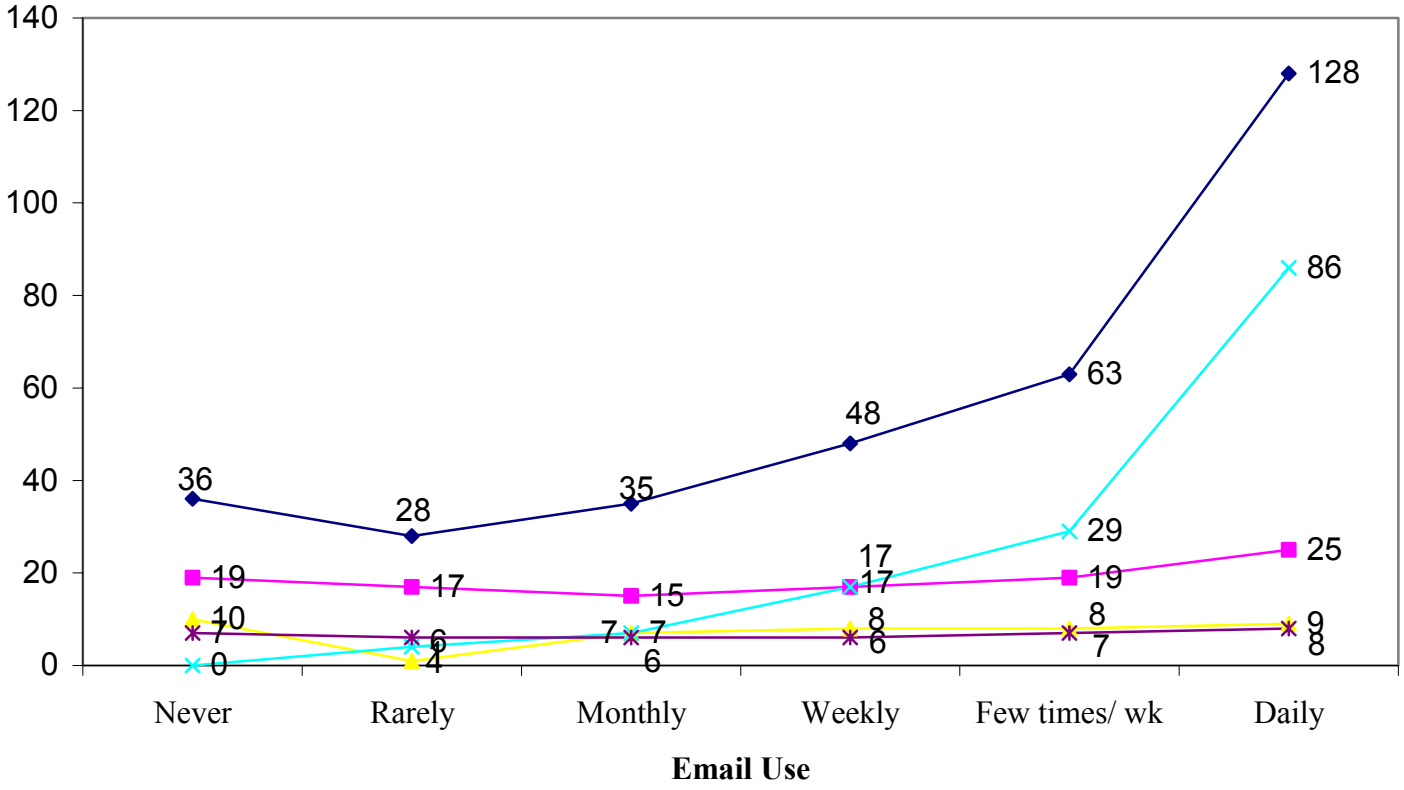

Figure 5b: Percentage of Media Used for Contact with Far-Away Friends