Days and Nights on the Internet

The Impact of a Diffusing Technology

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For a growing cohort of Americans, Internet tools have become a significant conduit of their social life and work life. The surveys of the Pew Internet & American Life Project in 2000 show that more than 52 million Americans went online each day, and there are significant differences in use between men and women, young and old, those of different races and ethnic groups, and those of different socioeconomic status. A user typology can be built around two variables: the length of time a person has used the Internet and the frequency with which he or she logs on from home. The authors contend that use of e-mail helps people build their social networks by extending and maintaining friend and family relationships.

The Internet is widely diffusing into American society. Some people do not use it and never will, some people cannot afford it, and some people do not use it well. But for a rapidly growing number of people the Internet is a useful communication and information-gathering tool, and for others it is a vital part of their lives. The rate of Internet diffusion since the creation of the World Wide Web surpasses that of other communication technologies, and because the social impact of newspapers, radio, and television has been significant, we set out to understand the role of the Internet in the daily life of users.

As of October 2000, the phone surveys by the Pew Internet & American Life Project show that 94 million American adults have Internet access. The overall population is evenly split between men and women. Proportionally, more

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Whites have Internet access than African Americans or Hispanics. This online population is still somewhat weighted toward the young, those with college or graduate degrees, and those in relatively well-off households (those who live in households with incomes greater than $75,000). However, there has been a sharp increase in access to the Internet among those with less than college education, those from households with middle- and working-class incomes, and especially among African Americans and Hispanics.[1] The overall online population is looking more and more like the population of the country. Our surveys suggest that the next wave of those getting access to the Internet will contain proportionally more minorities, more of those with lower incomes, and more of those with lesser education. The remaining demographic gaps in access will be defined by income differences and age differences—the poor, especially in rural areas, will continue to lag behind others in getting access, as will the elderly.

When Web activities are analyzed from the perspective of the many things users might have done online (we ask survey respondents to tell us the things they have ever done online), three major patterns emerge. First, gender gaps become evident in some places. Women are more likely than men to seek health information, get religious information, research new jobs, and play games online. Men are more likely to use the Web to get news, shop, seek financial information and do online stock trading, participate in online auctions, access government Web sites, and search for sports news.

At the same time, there is a striking amount of online behavior that is similar between men and women. For some Internet activities, the usage story is a generational one, and that is the second major pattern in our exploration of how Americans use the Internet. Younger Internet users of both genders are more likely than older Americans to have used the Internet for fun communications via instant messages or chat rooms; to have gone to the Web to browse for fun; to have done school- or work-related research; to have accessed popular culture by downloading music or getting information about movies, books, and other leisure activities; and to have performed convenience activities online such as banking and arranging travel.

Finally, our surveys show that variations in online behavior are also rooted in users' differing levels of experience with the Internet. Veteran users, those who have at least 3 years' experience online, are more likely than newcomers to have done most Internet activities. The Internet has become an important job-related tool for those with several years' experience. They are much more likely to have done job-related research and use e-mail in job-connected communications than newcomers. In addition, veterans are more likely than newcomers to have performed transactions or managed their money online. These users are disproportionately from higher socioeconomic groups, so education level and household income also show up as important indicators of the things users have done on the Internet.

In short, online life is not monochromatic. Tens of millions of Americans are online every day and are doing a variety of things. The Internet has become a part of everyday life rather than a separate place to be.

THE INTERNET'S PLACE IN AMERICAN LIFE

Ray Oldenburg has described how people use third places such as coffee shops, community centers, beauty parlors, general stores, bars, and other hangouts to help them get through the day (Oldenburg, 1991; see also Wellman, 1999). These places were distinct from home and distinct from work, but were integral parts of social life. As scholars began to look at typical uses of the Internet, many adopted an analytical frame that the Internet was like one of these third places—a growing sphere of social interaction where people played games and socialized. They studied how individuals and small groups behaved within MUDs **DEFINE**, MOOs **DEFINE**, and other specific environments (Sudweeks, 1998).

Internet tools have diffused with such speed and depth that many important forms of social organization—news agencies, business enterprises, charities, and the government—take care to manage their identity on the Internet, and some have been fundamentally altered by the organizational opportunities and stresses provided by such technologies. The Internet is no longer just a third place where people go to escape and play with games and identities. Today, many of the common forms of daily social interaction can be conducted online, from checking the news and sports scores to researching and booking travel reservations. However, there is little consensus about whether the ability of users to conduct personal and professional life through Internet technologies is ultimately good or bad for society at large, local communities, or individual well-being (Wellman & Gulia, 1999).

Those who argue that Internet tools have an ill effect make the case that Internet tools promote the growth of pseudo rather than real communities (Beniger, 1987); breed a new kind of radical individualism (Borsook, 2000); replicate traditional elites, ideologies, and American cultural hegemony (Carmel, 1997 **NOT IN REFS**); facilitate the violation of privacy (Bennett & Grant, 2000); abet sound-bite culture (Willock, 1998); and clutter modern life with useless data and cumbersome technologies (Rochlin, 1998; Shenk, 1997). Others have argued that the Internet shears social networks and lets individuals disconnect from their families and friends, becoming loners, if not Internet addicts (Nie & Erbring, 2000).

In the other camp are those who contend that Internet tools are good for society. One argument is that the Internet allows ideas to circulate to a wide audience and thus helps entrepreneurs with good ideas find capital and bring expertise to bear on marketable products and services (Cairncross, 1997 **NOT IN REFS**).

Others make the case that Internet technologies may help flatten hierarchies (Sproull & Kiesler, 1992), dilute power from traditional elites who monopolize information (Moore, 1987), permit new and interesting forms of community (Etzioni, 1997; Wellman, 1999), make citizen activism easier and more effective (Schwartz, 1996), and encourage a generally self-reflective society (Dizard, 1997; Fishkin, 1992).

Even though Internet use has spread quickly and widely, it is still too early to make conclusions about the long-term social role of the Internet. Most of the ideas about how the Internet may be good or bad for society are, at best, hypotheses, and it may be the case that many or all of them are true. It is certain, though, that the Internet is not a separate and distinct social sphere that can be studied in isolation. Thus, our research is focused on answering more basic sets of questions. First, who goes online on an average day and what do they do? Second, what are the most sensible ways of generalizing about what happens online? Finally, what are the social implications of adding the Internet to a person's repertoire of communication tools?

METHOD

The research reported here is built on an innovative tracking survey of Internet activities. Running almost continuously between March 1 and August 20, 2000, the survey has been completed by more than 12,000 American adults (18 years old and older).[2] From a total sample of 12,638 respondents, the median age was 42 years. The population was 79% White, 12% African American, and 46% male. In terms of education, 42% had high school or less, 29% had some postsecondary, 18% had a bachelor's degree, and 10% had a graduate degree. The raw data file is available at www.pewinternet.org. The 6,413 respondents who said they had Internet access were asked a battery of questions about what they had ever done online. If they said they had logged onto the Internet the previous day, they were asked questions about what they did during those online sessions yesterday, where yesterday includes weekdays and weekends. Some 3,506 had been online yesterday, and their responses allow us to examine a typical day on the Internet. Of those respondents, 2,535 were asked about their behavior on weekdays and 971 were asked about their behavior on weekends. This approach measures day-to-day online life more accurately than conventional surveys because it focuses on activities that are fresh in respondents' minds and because it has examined behavior on various days during an extended period. Although new kinds of Web-based survey instruments can overcome some of these difficulties, telephone-based sampling remains the best way to reach Americans who do not have easy Internet access (Witte, Amoroso, & Howard, 2000).

A TYPICAL DAY'S ACTIVITIES ONLINE

Every day, 55% of the American adults who have Internet access (55% of the sample of 6,413)—about 52 million people—go online and pursue a wide range of activities. During this average day, 48 million Americans are using the Internet's prime communications feature—e-mail. An equal number do something on the Web, either seeking information or completing a transaction. The composition of the online population on this average day reflects the profile of those who say they are the heaviest users of the Internet—and in many cases that means those who have had Internet access for the longest time. This, in turn, raises the possibility that growing familiarity with the Internet increases the likelihood that a user will be a frequent user.

The daily U.S. Internet population contains more men than women and relatively high levels of those from upper socioeconomic groups. It also contains a relatively high proportion of those who have the greatest amount of online experience. Some 57% of the men with Internet access are online during this typical day, compared to 52% of women with Internet access. About 56% of Whites who have Internet access are online during a typical day, whereas only 36% of African Americans and 49% of Hispanics with Internet access log on during this prototypical day. Of those with Internet access, 46% of those with a high school diploma or less are online during the typical day, compared to 62% of those with college or graduate degrees. Similarly, 50% of those with Internet access living in households with less than $30,000 are online during this typical day, whereas 61% of those with Internet access in households earning more than $75,000 log on during this typical day. Finally, 68% of those who have been online for 3 or more years log on to the Internet during the typical day, compared to just 41% of those who got Internet access within the past 6 months.

The vast majority of those who are online during a typical day read and send e-mail. Many of these same people also do other things online, and we have classified these activities in four broad groups: 29% of Internet users said they also did fun things (e.g., browse for fun, send instant messages, play games, get hobby information), one third said they also used the Internet as an information utility (e.g., to get news, financial information, product or travel information), about one fifth said they did important life activities online (e.g., get health information, do work- or school-related research, find leads about new jobs), and one tenth said they made some kind of financial transaction (e.g., buy a product, buy or sell stocks and bonds, make a travel reservation) (see Table 1).

Some clear differences among groups emerge in our activities-classification scheme for the full sample of 6,413. Young adults who use the Internet are more likely to do fun things compared to older respondents. Of those who went online yesterday, substantially more men than women used the Internet as an information utility. The most experienced online Americans are relatively heavy users of the Internet as an information utility, and proportionally more of them do research for major life activities online than other groups.

TABLE 1: Daily Internet Activities (March to August compiled, weighted)

		Online Activity[a] *(%)*				*E-Mail and Online*	
	E-Mail (%)	*Fun*[b]	*Information Utility*	*Major Life Activities*	*Transactions*	n	*%*
Gender							
Female	88	11	14	12	3	3,197	47
Male	86	14	21	14	4	3,583	53
Race							
White	88	13	17	13	4	5,954	88
Black	75	15	16	16	4	362	5
Asian	84	16	21	17	7	133	2
Hispanic/Latino	86	15	19	15	5	395	6
Age group (years)							
18 to 24	87	20	15	14	4	989	15
25 to 34	88	14	18	16	4	1,719	25
35 to 44	86	12	19	14	4	1,743	26
45 to 54	87	10	18	13	3	1,280	19
55 to 64	90	9	18	10	3	616	9
65 or older	85	8	15	6	2	328	5
Education (bachelor's degree or more)	89	11	19	15	4	1,760	26
Income ($)							
20,000 or less	87	15	14	15	3	513	9
20,000 to 40,000	87	16	17	12	3	1,435	21
40,000 to 75,000	86	14	17	13	4	2,010	30
75,000 or more	89	11	21	16	5	1,689	25
Place of connection[a]							
Home	88	14	18	12	4	5,185	76
Work	90	12	21	20	4	2,725	40
When came online							
This year	82	13	14	9	3	1,902	28
Between 1 and 3 years	88	13	17	13	4	2,229	33
More than 3 years ago	90	13	21	17	5	2,641	29
Duration of use							
At least an hour	85	10	14	10	3	4,150	62
Between 1 and 3 hours	89	17	21	16	5	1,436	21
More than 3 hours	94	21	27	22	7	1,140	17
All users[a]							
n	5,914	1,987	2,257	1,406	621	6,780	100
Percentage	87	29	33	21	9	100	

a. Online activities and home/work access were not exclusive categories, so these row and column totals will not sum to 100% like the other variables.

b. Fun activities are checking sports information, sending/receiving instant messages, seeking information about hobbies, browsing for fun, playing a game, watching video clips, listening to audio clips, listening to music or downloading it, and participating in chat rooms. Information utility activities are getting news, news specifically about politics, financial information, product information, travel information, religious and spiritual information, information from a government Web site, and checking the weather. Major life activities are seeking information about health care, jobs, housing, doing job-related research, and research for school or job training. Transactions activities are buying products, making travel reservations, doing online banking, participating in an online auction, trading stocks/bonds/mutual fund shares, and gambling.

Inside each of our broad categories, there are interesting things to note. The gender differences in the daily online world are not very dramatic in some major activities such as using e-mail and browsing for fun (more men do this than women on a typical day), searching for health information (more women do this than men), and buying products and making travel reservations (men and women are doing this in roughly similar proportions). But a gap is evident in some other Internet activities. More men than women are consuming news online on a typical day—26% of men with Internet access are doing this, compared to 15% of women. A comparable pattern applies to the act of seeking product information online: 16% of men are doing this on a typical day, compared to 9% of women. When it comes to seeking financial information such as stock quotes or mortgage interest rates, 18% of men are doing this on a typical day, compared to 8% of women. Men with Internet access use the Internet for work-related research more than women: 18% of men with access do this on a typical day, compared to 12% of women. Similarly, many of those who seek hobby information on a typical day are men: 21% of men with Internet access are doing this during the average day, compared to 14% of women.

We have noted that African Americans with Internet access are proportionally much less likely than Whites to log on during the typical day. This relationship also applies to the most common Internet activities. For instance, on a typical day, 49% of Whites with Internet access are sending and reading e-mail, whereas only 27% of African Americans with Internet access are working with e-mail. In addition, 21% of Whites are getting news on that average day, compared to 12% of African Americans. Some 20% of Whites are browsing for fun on an average day, compared to 14% of African Americans. A final example: 13% of Whites are getting product information, compared to 8% of African Americans.

A PREDICTIVE MODEL OF WHO DOES WHAT

We found some striking variance of use of the Web when we asked respondents what they have ever done online. Table 2 presents the results of a logistic regression for 29 dependent variables measuring different Internet activities, and modeled with the independent variables of age, gender, race, educational background, and income. The logistic regression reveals the comparative effect of different demographic factors in predicting whether a user actually did that particular activity. Although it is common to report the coefficients from the logistic regression of independent variables onto a dependent variables, the exponentiated coefficients are the more intuitive odds ratios. The odds ratio is the probability that one variable, controlling for all the other factors in a model, will correctly predict a person's response to a question. For example, all other

things being equal, the odds that an Internet-using woman has ever sent or read e-mail are 25.6% greater ([1.256-1]*100) than the odds that a man would have used e-mail. Furthermore, the odds that someone with a bachelor's degree or more would have ever used e-mail are 92.2% greater than those of someone without such a degree.

Table 2 helps predict the probability that an individual has done a particular Internet activity. For example, the odds that an Internet-using, 25-year-old woman with a bachelor's degree who self-identifies as Anglo-American and not Hispanic has used e-mail are 506 to 1. In contrast, the odds that an Internet-using, 25-year-old woman with a bachelor's degree who self-identifies as African American and not Hispanic has used e-mail are 319 to 1.[3] This model shows that gender accounts for some of the differences in the ways people use the Internet. Female Internet users are more likely than male users to have ever used e-mail. At the same time, online women are less likely than online men to have accessed 15 kinds of Web activities. When it comes to checking for news or sports scores, watching or downloading a video or audio clip, or doing most financial transactions, online men are much more likely to have logged on to enjoy those activities than women. However, women are twice as likely as men to look for health information online. Interestingly, women seem to be most taken by researching travel plans and playing games.

Age is significantly associated with the performance of some Internet activities. Younger online Americans are more likely to use the Web for fun, to gather most kinds of information, and to perform financial transactions online.

There are large, significant differences in the daily activities of people with different racial backgrounds. Compared to White respondents, Asian Americans are less likely to research hobbies online and more likely to research politics and travel plans. Asian Americans are also more likely to have bought or sold stocks, bonds, or mutual fund shares online, and to have made travel plans. Although there are few statistically significant odds ratios for African American respondents, they are much less likely than others to have used e-mail. African Americans are most likely to have done fun things on the Web like checking the sports scores and playing games. Interestingly, they are 31% as likely as Whites, controlling for other variables, to have looked for job information online and 68% more likely to look for religious or spiritual content online.

The relationship between education and conduct online is straightforward. The more education a person has, the greater the odds that he or she will be interested in using the Internet for particular activities. On the whole, people with at least a bachelor's degree are more likely to have used e-mail and to have been in search of information. A person's level of education strongly predicts the probability that he or she will use the Internet for financial, political, or government information. People with more education also seem more confident about performing online banking and carrying out other financial transactions online.

TABLE 2: Logistic Regression Results: Odds (e^B) of Doing Particular Internet Activities Modeled With Age, Gender, Education, and Race

	Fun									*March to August Compiled, Unweighted*	
	Checked Sports Scores	*Sent Instant Message*	*Sought Info About a Hobby*	*Browsed Just for Fun*	*Played a Game*	*Learn About Movies, Books or Music*	*Watched a Video Clip or Listened to Audio Clip*	*Took Part in a Chat Room*	*Listened to or Downloaded Music*	*Unweighted* n	%
Baseline odds (constant)	0.704**	1.038	2.409**	4.370**	0.477**	0.606**	0.721**	1.188	0.605**	6,270	100
Age	0.988**	0.983**	0.989**	0.980**	0.988**	0.968**	0.980**	0.965**	0.977**	6,270	100
Female	0.340**	0.981	0.789**	0.924	1.170*	1.059	0.747**	0.777**	0.779**	3,162	50
Bachelor's degree or more	1.124	0.747**	0.991	0.614**	0.566**	1.054	1.072	0.577**	0.772**	2,579	41
Hispanic or Latino	1.096	1.067	0.862	1.215	1.105	1.291	0.943	0.877	1.057	395	6
Race (White as reference)											
Asian	1.013	1.135	0.688*	0.914	0.769	0.961	0.964	1.193	1.044	154	2
Black	1.347**	1.051	0.739**	1.476**	1.499**	1.122	1.174	1.442**	1.193	586	9
Other	1.068	1.161	0.942	1.081	0.214	1.094	1.067	1.539**	1.241	314	5

	Information Utility								
	E-Mail	*Got Financial Info*	*Check Weather*	*Got News*	*Research Travel Plans*	*Looked for Info About a Product*	*Sought News About Politics*	*Sought Religious Info*	*Sought Info From Government Web Site*
Baseline odds (constant)	8.373**	0.669**	0.647**	1.654**	1.878**	3.048**	0.484**	0.055**	0.622**
Age	1.002	1.007**	1.002	0.999	0.994**	0.987**	1.000	0.997	1.002**
Female	1.256*	0.533**	0.924	0.673**	1.118*	0.657**	0.747**	1.165	0.731**
Bachelor's degree or more	1.922**	1.866	1.097	1.445**	1.685**	1.231**	1.537**	0.963	1.799
Hispanic or Latino	0.652**	0.787*	0.922*	1.036	0.942	0.895	1.085	0.935	0.872

Race (White as reference)									
Asian	0.868	1.152	0.671*	1.311	1.641*	0.889	1.758**	0.784	0.891
Black	0.631**	0.959	0.780**	1.127	0.984	0.854	1.079	1.685**	0.868
Other	0.786	0.971	1.057	1.064	0.769*	0.820	1.388**	1.346	0.836

	Major Life Activities					*Transactions*					
	Looked for Place to Live	*Sought Info About a Job*	*Sought Health Info*	*Did Work Online*	*Did Research for School or Got Training*	*Banked Online*	*Participated in Online Auction*	*Bought a Product*	*Bought/Sold Stocks, Bonds Mutual Fund Shares*	*Made Travel Reservation*	*Gambled Online*
Baseline odds (constant)	0.164**	0.276**	0.629**	0.966	1.197*	0.127**	0.316**	1.211*	0.112**	0.444**	0.027**
Age	0.975**	0.971**	1.006**	0.991**	0.972**	0.988**	0.987**	0.990**	0.998	0.994**	1.002
Female	1.063	1.166	2.039**	0.798**	1.070	0.853	0.575**	0.891*	0.482**	0.864**	0.889
Bachelor's degree or more	1.350**	1.198*	1.294**	3.005**	1.319**	1.729**	1.103	1.721**	2.047**	1.888**	0.614*
Hispanic or Latino	1.115	1.055	0.855	1.127	0.979	1.061	0.577**	0.835	0.644*	0.963	0.974
Race (White as reference)											
Asian	1.192	1.111	0.768	1.361	1.069	1.393	0.865	1.134	2.435**	1.367	0.940
Black	1.237	1.316*	0.955	1.019	1.099	1.132	0.402**	0.592**	0.911	0.970	0.804
Other	0.732	1.048	1.060	1.088	1.026	1.405	0.946	0.822	0.992	0.986	1.130

NOTE: In most models the amount of explained variation is less than 10%, although the models still make statistically significant improvements to the predictive power of baseline odds alone.
*Significant at .05. **Significant at .01.

A USER TYPOLOGY

A typology can be built around respondents' answers to two questions: How long have you had Internet access? And how frequently do you log on from home? We tested several other variables—demographic traits and responses to other questions about use of the Internet—and found that responses to questions about experience levels and frequency of home use yield the most robust typology.

One major advantage of focusing on these questions is that they give insights into users' willingness to be innovative, which appears to be more important than demographic characteristics in predicting how people use and feel about the Internet. As characterized by Everett Rogers (1995), "Innovativeness [is] the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system" (p. 261). By focusing on the moment in time that people began using the Internet, we get a measure of their position relative to others in the social system. Furthermore, their interest in using the Internet from their homes gives a measure of the degree to which they have embraced Internet tools above and beyond the interest they would be compelled to have if they have access to the Internet at work. Those who arranged for Internet access at home have made a decision to seek information and indulge in leisure activities beyond the things that would be necessary at the workplace. Home access and frequent home use are measures, then, of "overt behavioral change" that is the hallmark of people's willingness to be innovative (Rogers, 1995, p. 252). As is the case with Rogers's adopter categories (innovator, early adopter, early majority, late majority, laggard), our typology is intended to produce "ideal types based on abstractions from empirical investigations" (Rogers, 1995, p. 263).

Four broad categories of Internet users can be identified based on the length of their Internet experience and the frequency with which they say they log on from home. We have labeled them this way:

Netizens comprise 16% of the adult Internet population and 8% of the adult U.S. population as of September 2000. They started going online more than 3 years ago and say they go online from home every day. They have incorporated the Internet into their work lives and home lives, are relatively comfortable spending money online, use the Internet to help manage their personal finances, use e-mail to enhance their social relationships, and are the most avid participants on most Web activities on an average day.

Utilitarians comprise about 28% of the adult Internet population and 14% of the U.S. adult population. They started going online more than 3 years ago or got access 2 or 3 years ago, but also log on from home every day. Compared to Netizens, members of this group are less intense in their use of the Internet, express less appreciation for what the Internet contributes to their lives, are less likely to spend and manage their money online, and are less active in accessing the Web's content. At the same time, they exploit the Internet for many tasks in

their lives and have a quite functional approach to Web use. The Internet is a tool for them, although, as a group, they tend to see it as less useful and entertaining than Netizens do.

There are slightly fewer Experimenters than Utilitarians. Experimenters comprise 26% of the adult Internet population and 13% of the U.S. adult population. They started going online 2 to 3 years ago or started about a year ago, and say they go online from home every day. Relatively speaking, they have ventured beyond the fun activities that Internet novices enjoy and are interested in using the Internet as an information retrieval utility.

The fourth user type is Newcomers. They comprise 30% of the adult Internet population and 15% of the U.S. adult population. They started going online about a year ago or more recently than that. This group shows many of the characteristics of apprentices. They are learning their way around. But even without a great deal of experience, they enjoy many of the fun aspects of the Internet at levels similar to the overall average of the Internet population. That would include playing games, browsing for fun, participating in chat rooms, getting information about hobbies, and listening to and downloading music. More than other groups, Newcomers are likely to have access in only one place—either at work or at home (see Table 3).

The most innovative and aggressive users of the Internet are Netizens. The composition of this group is heavily weighted toward men, the well educated, the relatively well-to-do, and Whites. Although Netizens comprise 16% of the overall Internet population in America, they make up a far greater proportion of daily users of the Internet. On a typical day, Netizens make up 25% of the traffic online. Their role in daily traffic swells even more on weekend days, when they become 29% of users. They are also 39% of those who spend more than 2 hours online on a typical day.

The differences in Internet use between Netizens and other U.S. Internet users are pronounced on that typical day. Netizens are 45% of those buying or selling stocks, bonds, and mutual fund shares; 44% of those doing online banking; 40% of those participating in online auctions; 34% of those getting financial information such as stock prices or mortgage rates; 33% of those doing work or research for their jobs; 32% of those getting news; 32% of those getting information about products and services; 29% of those buying books, music, toys, or clothing; and 32% of those doing school research or getting job training.

The degree to which the Internet has become integral to Netizens' jobs is highlighted by the gap between them and other Internet users in their use of the Web for work research. In addition, Netizens are conspicuously more likely than other Internet users to do school work and get job training online. Beyond that, Netizens are twice as likely as other Internet users to be taking advantage of the Web as an information utility on a given day. Even on the fun features of the Internet, which tend to be the things that newcomers and less-experienced users enjoy, Netizens disproportionately enjoy them on the Web on a typical day. A

TABLE 3: Demographic Attributes of Internet Users (March to June compiled, weighted)

	User Type (%)			
	Newcomers	*Experimenters*	*Utilitarians*	*Netizens*
Gender				
Male	44	46	54	62
Female	56	54	46	38
Race				
White	82	86	86	88
Black	12	8	7	4
Hispanic	8	7	5	5
Age cohort (years)				
18 to 24	15	17	18	19
25 to 29	11	13	12	14
30 to 39	28	27	25	24
40 to 49	23	22	21	21
50 to 64	17	15	18	16
65 or older	5	3	5	5
Education				
High school diploma or less	45	31	25	18
Some college	30	32	30	33
Bachelor's degree or more	24	37	45	49
Income ($)				
Under 30,000	27	22	20	17
30,000 to 50,000	32	29	25	22
50,000 to 75,000	22	23	22	22
75,000 or more	18	26	32	38
Parental status				
Parent of child under 18	46	45	38	36
Not a parent	54	55	62	64
Access				
Home only	36	26	25	14
Work only	43	35	22	-
Both home and work	15	22	36	28
Weighted *n*	3,028	2,644	2,909	1,671
%	30	26	28	16

two-to-one gap between Netizens and the rest of the Internet population generally holds up for most of the fun features of the Web.

Like Netizens, Utilitarians are also veteran Internet users. But they stand apart from Netizens in their lesser involvement. They are mostly average in their embrace and use of the Internet. Behaviorally, they do many things at rates slightly above the norm among the entire Internet population, but nothing about them or their use of the Internet is exceptional. They tend to have a functional, task-oriented approach to their use of the Internet, and are much less likely than Netizens to use the Internet at home and for fun activities. They spend less time online than Netizens and they log on less frequently. They are also less likely than Netizens to have oriented their financial affairs around the Internet. If there

TABLE 4: A Typology of Users by Online Activity (March to June compiled, weighted)

		User Type (%)			
Activity Done Ever	*All Users*	*Newcomers*	*Experimenters*	*Utilitarians*	*Netizens*
E-mail	92	84	92	96	97
Fun					
Sought information about a hobby	75	66	76	78	85
Watched video clip or listened to audio clip	48	36	45	53	70
Browsed just for fun	61	60	60	62	66
Sent instant messages	45	35	43	48	59
Listened to or downloaded music	37	32	33	39	47
Checked sports scores	36	29	36	39	46
Played a game	33	35	31	33	36
Took part in a chat room	24	22	24	24	27
Information utility					
Sought information about product/service	73	63	73	76	86
Got information about travel	65	52	66	69	80
Got news	60	47	56	67	78
Checked weather	62	50	60	68	77
Got financial information such as stock prices	44	32	41	50	63
Sought information from government Web site	40	29	39	47	51
Got news about politics	34	23	31	41	49
Sought religious information	21	18	20	24	25
Major life activities					
Done work online for your job	50	36	47	58	66
Sought health information	55	48	55	56	64
Research for school or job training	55	47	55	61	64
Sought information about a job	38	26	40	45	46
Sought information on place to live	27	15	26	33	43
Joined online support group	24	15	23	25	31
Transactions					
Bought a product online	47	28	45	54	71
Made a travel reservation online	29	20	29	31	40
Banked online	18	8	14	22	32
Participated in online auction	12	7	11	13	24
Bought or sold stocks, bonds	9	6	7	11	18
Weighted *n*	10,253	3,028	2,644	2,909	1,671
Percentage	100	30	26	28	16

is a pattern to Experimenters' small areas of difference with average Internet users, it is that they have used the Internet more than average for practical and serious reasons.

Unlike Netizens and Utilitarians, Experimenters are a group where women outnumber men. They have ventured beyond games and fun activities on the Internet. They use the Web as an information utility and resource to consult on life-changing moves such as finding new housing or job opportunities. Utilitarians show slightly higher than average use of the Web for certain activities, especially the most serious and consequential activities. In comparison, Experimenters show slightly below average use of the Web on those kinds of activities.

Internet Newcomers differ markedly from the other, more experienced types. For one thing, women make up 56% of the group. Almost half of all the African Americans with Internet access (43%) are Newcomers and comprise 12% of the Newcomer class. More than two thirds of Newcomers (69%) live in households that earn less than $50,000. Almost half (45%) ended their schooling with a high school or trade school diploma.

These Newcomers are not nearly as intense in Internet usage as more experienced users, but they are drawn to the Internet for fun activities, such as chat rooms and instant messaging. What separates Newcomers dramatically from veteran users is their relative unwillingness to conduct financial or commercial transactions online. Use of the Internet is a home-based activity for Newcomers—they are more likely to log on from home and less likely to log on from work than more experienced users.

Newcomers have not integrated the Internet into their lives to the same extent as more experienced users. Although they constitute 30% of the overall Internet population, Newcomers are only 19% of the Internet population on a typical day. The modest use of the Internet by Newcomers is reflected in the fact that they are involved at about half the rate as the Internet population's average with almost every Web activity we measure.

RHYTHMS OF INTERNET USE

The continuous tracking survey allows us to examine some of the basic patterns of use of the Internet during different blocks of time during the day, different days of the week, and different seasons of the year. The results presented here come from surveys taken during 122 consecutive nights (March 1 to June 30), followed by a 3-week break and then another 27 straight nights of polling from July 24 to August 20. The method of asking Internet users about the things they did yesterday permits for fresh recall on the part of respondents and for the collection of data about the time of day users logged on.

In most respects, these rhythms of Internet use follow familiar cadences in everyday life. There is heavier use of the Internet during a typical weekday, when on average 60% of Internet users log on, than during a weekend day, when on average 45% of Internet users go online. That makes sense because workplace use of computers and the Internet is relatively high during days of the week when most people are at their jobs. Even the most popular Internet activities are

TABLE 5: Weekdays and Weekends Online (March to June compiled, weighted)

	Average Daily Use by Americans With Internet Access (%)		
Activities Done Yesterday	*Weekday*	*Weekend*	*Percentage Change*
Go online	60	45	–25
Seek information from a government Web site	5	2	–60
Do work research	18	8	–56
Get financial information	16	8	–50
Listen to/download music	6	3	–50
Do research for school	13	8	–39
Watch a video clip	8	5	–38
Seek information about a product	14	9	–36
Look for medical information	6	4	–33
Look for information about a hobby	19	13	–32
Send or read e-mail	53	37	–30
Check weather reports	18	13	–28
Get news online	22	16	–27
Browse for fun	20	15	–25
Check sports scores	9	9	0
Participate in an online auction	2	2	0
Buy a product online	4	4	0
Take part in chat rooms	3	3	0
Work access only	26	7	–73
Both home and work access	22	11	–48
Home access only	50	79	57
Weighted *n*	4,422	1,283	
Percentage	78	22	

practiced less often during weekend days than on weekdays: E-mail use drops 30% during the weekend and the seeking of hobby information drops by 32%. On weekend days workplace use of the Internet plummets by 62%. It is not surprising, then, to see that participation in some of the most serious Web activities also falls. On an average weekday, 18% of Internet users are doing work-related research, compared to 8% who are doing such research on a typical weekend day (see Table 5).

Our surveys have produced data that support the idea that the boundary between work and home is blurring. There is evidence that the changes between what is done at work and home flow in both directions: People use the Internet to do nonwork activities while on the job, and people use the Internet to do work-related activities at home. At least one tenth of Internet users who only have access on the job do something unrelated to work on a typical day, and more than two thirds of Internet users with work-only access have acknowledged doing something extracurricular on the Web while on the job. More than half of Internet users who only have access at home have done something related to

TABLE 6: Mixing Home Life and Work Life (March to June compiled, weighted)

	Activities (%)	
	Ever	*Yesterday*
Internet users who have online access only at work who do these things on the Web		
Seek information about product or service	63	6
Look for hobby information	59	6
Get information about travel	53	7
Browse the Internet for fun	48	11
Look for medical information	44	3
Get financial information	39	8
Check sports scores and information	36	5
Buy travel services	22	2
Listen to music or download it	26	2
Internet users who have online access only at home who do these things on the Web		
Do research for school or training	51	8
Do work or research for their jobs	26	5
Weighted *n*	10,281	5,312
Percentage	100	56

work, and a healthy number are doing work at home on a typical day (see Table 6).

E-MAIL ENHANCES THE SOCIAL WORLDS OF INTERNET USERS

As daily activity on the Internet grows, there has been considerable interest in the question of whether Internet use encourages social connectedness or social isolation. Respondents tell us that the Internet allows people to stay in touch with family and friends and, in many cases, extend their social networks. A sizeable majority of those who e-mail relatives say it increases the level of communication between family members. Some 59% of those who use e-mail to communicate with their families say they communicate more often now with their primary family contact, and 60% of those who e-mail friends say the same thing about increased communication with their primary friend contact. About 31% of family e-mailers say they have started communicating with a family member that they had not contacted much before.

Still, the question remains: Does going online divert users from social interactions? These survey results suggest that online tools are more likely to extend social contact rather than detract from it. American Internet users as a group are more socially active than nonusers, which might be explained in part because these Internet users are disproportionately from higher socioeconomic groups.

However, we have found that Internet use is positively associated with social activity. Table 7 identifies the odds ratios for predicting someone's response to questions about social networks. For example, the odds that a 25-year-old Anglo-American male without a bachelor's degree who has never gone online feels that he can turn to many people for support are almost 18 to 1. If this person had ever gone online, the odds would improve to 22 to 1. In another hypothetical case, the odds that a 25-year-old African American male without a bachelor's degree who does not go online feels that he can turn to many people for support are only 8 to 1. If this person had ever gone online, the odds improve to 10 to 1. Thus, controlling for other important variables, those who have ever gone online are 24% more likely than those who have never gone online to say they can turn to many people for support. In parallel, those who have ever gone online are 40% less likely than those who have never gone online to say they can turn to hardly anybody for support. Moreover, with other variables held constant, people who have ever gone online are 46% more likely to have called a friend or relative just to talk on the previous day. This contradicts the assertion by some that the Internet detracts from other forms of socialization (Nie & Erbring, 2000), while supporting the claims of others that the Internet may increase socialization (Wellman & Hampton, 1999).

Many users feel that using Internet tools has improved the way they do their hobbies, manage finances, get information about health care, shop, and generally learn about new things. It probably is not surprising that more experienced users are much more likely than new users to be excited about using the Internet for personal hobbies, health, or finances because some of that excitement also drives people to explore even more Internet resources. The magnitude of the effect is surprising—experienced users are two, three, or four times more confident than new users to declare that their online access has improved different aspects of their personal lives.

CONCLUSION

Many Americans are incorporating Internet tools into their daily lives, and this is reflected in the kinds of activities they pursue online. Many Americans report substantial benefits from being connected. More than half of all Internet users say the Internet has improved their connection to their family and friends. Three quarters of them say Internet use has improved their ability to learn about new things. Half say the Internet improves the way they pursue their hobbies, 37% say it improves the way they do their jobs, 35% say the Internet has improved the way they get information about health care, 34% say the Internet improves their ability to shop, and 26% say it has improved the way they manage their personal finances.

There are a variety of demographic factors that affect people's use of the Internet, including gender, age, education, income, race, and ethnicity. But the

TABLE 7: Logistic Regression Results: Odds (e^B) of Particular Responses to Questions About Social and Personal Life Modeled With Age, Gender, Education, Internet Use, and Race; and About How the Internet Has Improved Social and Personal Life Modeled With Age, Gender, Education, and Connectedness

	Thinking About Your Personal Life, When You Need Help Would You Say You Can Turn to:					*Yesterday, Did You:*			*March 2000 Iteration*	
	Many People for Support?	*Just a Few People for Support?*	*Hardly Any People for Support?*	*Visit With Family or Friends?*	*Call a Friend or Relative Just to Talk?*	*Read a Newspaper?*	*Watch an Hour or More Television News?*	*Watch an Hour or More Television?*	*Unweighted* n	%
Baseline odds (constant)	0.721**	0.783*	1.142**	1.407**	0.303**	0.150**	0.100**	1.145	3,445	100
Age	0.994**	0.999	1.005	0.990**	0.968**	1.032**	1.025**	1.005	3,445	100
Female	1.695**	0.794**	0.691**	2.511**	1.357**	0.734**	1.034	0.947	1,829	53
Bachelor's degree or more	1.168	1.101	0.515**	0.976	0.960	1.559**	1.013	0.680**	915	27
Ever online	1.243*	1.062	0.593**	1.031	1.458**	1.391**	0.860	0.872	1,647	48
Online yesterday	1.112	0.904	0.977	1.125	0.813	1.255*	1.218	0.928	985	29
Race (White as reference)										
Asian	0.327**	2.438**	1.243	0.583*	0.351**	0.659	1.070	0.537	70	2
Black	0.450**	1.338**	2.257**	1.403**	0.502**	0.619**	1.282*	0.939	417	12
Other	0.890	0.798	1.625*	0.853	0.835	0.610**	1.052	1.153	185	5

	Has the Internet Affected Your Social Life by Improving:				*Has the Internet Affected Your Personal Life by Improving:*			*March to August 2000, Compiled*	
	Connections to Your Friends?	*Connections to Members of Your Family?*	*The Way You Learn About Hobbies?*	*Your Ability to Learn About New Things?*	*The Way You Manage Your Personal Finances?*	*The Way You Get Information About Health Care?*	*Your Ability to Shop?*	*Unweighted* n	%
Baseline odds (constant)	0.974	0.434**	0.626**	3.853**	0.252**	0.365**	0.581**	1,932	100
Age	0.992**	1.003*	0.994*	0.998**	0.997	0.999	0.986**	1,932	100

Female	1.545**	1.815**	0.754**	0.981	0.764*	1.590**	0.849	947	49
Bachelor's degree or more	1.066	1.057	0.809*	1.030	1.412**	1.075	1.200	787	41
Connectedness (new user as reference)									
Average	1.472**	1.288*	1.094	1.692**	1.155	1.012	1.260	463	24
Heavy	2.602**	2.046**	1.678**	2.370**	1.892**	1.327*	1.842	573	30
Daily and experienced	5.164**	3.285**	2.256**	4.042**	3.599**	1.828**	3.245**	322	17

NOTE: In most models the amount of explained variation is less than 10%, although the models still make statistically significant improvements to the predictive power of baseline odds alone.
*Significant at .05. **Significant at .01.

most useful predictors of the activities that users enjoy online are their length of experience with the Internet and their frequency of logging on from home. We constructed a typology using these two variables that establishes four categories of Internet users in America: Netizens, who are the heaviest and most enthusiastic Internet users; Utilitarians, who have a more functional approach to Internet use; Experimenters, who have ventured into various information spheres online; and Newcomers, who are beginning to enjoy the fun features of the Web.

As the Internet becomes a common communication tool, familiar patterns of social interaction appear online. Americans' use of the Internet tracks with the rhythms of their lives at work and at home.

Although results from our surveys have yielded interesting data about people's activities online, more research should be done into the different degrees of effect for people who occasionally log on and those who go online daily. Another important research question is whether today's Newcomers will grow up after they become comfortable and familiar with the Web to behave like today's Netizens, or whether they will chart a different course online because today's novices are so demographically different from Internet veterans.

NOTES

1. We are comparing the Pew Internet Project findings in 2000 with those of the Pew Research Center for The People & The Press in 1996 (http://www.people-press.org/tec96sum.htm) and 1998 (http://www.people-press.org/tech98sum.htm).

2. The survey was conducted using a rolling daily sample, with a target of completing 75 to 80 interviews each day of a survey period. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling and other random effects is plus or minus 2.5 percentage points. A basic set of questions about Internet use and respondent demographics were asked of all respondents, and additional, more detailed sets of questions were given to different respondents during the 6-month survey period. For those additional results, the sampling error is plus or minus 3 percentage points. In addition to sampling error, question wording and practical difficulties in conducting telephone surveys may introduce some error or bias into the findings of opinion polls.

The sample for this survey is a random digit sample of telephone numbers selected from telephone exchanges in the continental United States. During a survey period, a new sample was released daily and was kept in the field for at least 5 days. This ensures that the complete call procedures are followed for the entire sample. Additionally, the sample was released in replicates to ensure that the telephone numbers called are distributed appropriately across regions of the country. At least 10 attempts were made to complete an interview at every household in the sample. The calls were staggered during times of day and days of the week to maximize the chances of making contact with a potential respondent. Interview refusals were recontacted at least once to try again to complete an interview. All interviews completed on any given day were considered to be the final sample for that day. When enough respondents had completed the survey to provide statistically significant results, we were able to adapt the questionnaire to address current events and new research interests.

Nonresponse in telephone interviews produces some known biases in survey-derived estimates because participation tends to vary for different subgroups of the population, and these subgroups are likely to vary also on questions of substantive interest. To compensate for these known biases, the sample data are weighted in some analysis. The demographic weighting parameters are derived

from a special analysis of the most recently available Census Bureau's Current Population Survey (March 1999).

3. In the first example, the odds = 8.373 * 1.002(Age) * 1.256(Female) * 1.922(bachelor's degree) * 0.652(Hispanic) * 0.868 (Asian) * 0.631(Black) * 0.736(Other), and since $e^{(0)} = 1$, the odds = 8.373 * 1.002(25) * 1.256(1) * 1.922(1) * 1 * 1 * 1 * 1 = 506.33. In the second example, the only difference is that the case self-identifies as African American, so the odds = 8.373 * 1.002(25) * 1.256(1) * 1.922(1) * 1 * 1 * 0.631(1) * 1 = 319.49.

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PLS. PROVIDE 4-5 KEYWORDS