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Motives, *and* Dropouts

Who is on and off the Internet, and why. The explosion of interest in and surveys on the Internet has focused primarily on the commercial potential

and secondarily on the demographics of users [4, 5]. Often ignored are the perceptions of non-users—many of whom will eventually become users. Our purpose is to complement existing studies by looking at both users and non-users.

A SYSTEMATIC UNDERSTANDING OF THE “social” issues is a worthwhile objective for both policy and system design reasons. According to many observers, there are important societal and political consequences if a “digital divide” should long endure. For example, Anderson and colleagues [1] highlight the range of services that are becoming available via the Internet, and the equity implications if certain segments of the population are excluded from them. The issue becomes increasingly urgent as more governmental functions become available through the World-Wide Web and the Internet. Those without computers and Internet accounts can neither access nor participate in “point-and-click” government. Highlighting this inequity is the fact that the 1996 political conventions of the Republican and Democratic parties were carried over the Internet, and included opportunities for interaction and feedback. Perhaps most troubling of all aspects of this “information rich-information poor” issue is that the gap of computer ownership between the “rich” and the “poor” has widened since the mid-1980s, so that now a higher proportion of the wealthier portion of the population have computers relative to the poorer portion.

In terms of design issues, it appears that there are some significant hurdles faced by both users [3], and those who might wish to become users. By understanding the needs and preferences of various potential user groups, systems can be created that can make it easier to get onto the Internet and make it more useful and pleasurable once the user begins exploring the Internet.

Method

In late 1995 we undertook a representative survey of 2,500 Americans to understand their use or non-use of the online world. We repeated a smaller version of the study in late 1996 to track possible changes. We included relevant convergences and divergences between these two studies in the analysis that follows. Specifically, we sought answers to the following questions:

- What are the demographic characteristics of users compared to non-users?
- What motives might people have for using the Internet? How do these vary for current users, former users, and non-users?
- How are users introduced to the Internet, and where do they seek support?
- What are the barriers to Internet usage?
- What are the least-attractive features of the Internet and what changes would users like to see?

Overview of Results

data samples: Of the 2,500 respondents, 15% reported not having heard of the Internet, and 69% reported having heard of the Internet but not being users. Eight percent of the sample reported being Internet users, and somewhat surprisingly, our survey also revealed almost an equal number of former users, indicating considerable churn among Internet users. Former users, a group hardly recognized in the published literature, warrant further study since analysis of their Internet experiences could point to ways of improving the Internet.

large number of Internet dropouts identified. The sample of Internet users was augmented by a national random telephone survey of 400 Internet users. Of the total of 600 Internet users, 49% reported being “longtime” Internet users—current users who started using the Internet prior to 1995, as distinct from “recent” Internet users—current users who started using the Internet in 1995.

In addition to our 1995 study we carried out a smaller national random telephone survey in November 1996. This second sample was used to assess how the demographics of the awareness/usage groupings had changed during the period from October 1995 to November 1996. The 1996 survey yielded 557 respondents of which 10% reported not having heard of the Internet, 60% reported having heard of the Internet but not being users, and 19% reported being Internet users. Finally, 11% reported being former users, confirming the earlier finding of considerable churn among participants. The 1996 sample was also augmented by a national random telephone sample of a further 450 Internet users.

The distributions of the four categories (not aware of the Internet, heard of the Internet but a non-user, former user, and current user) across the 1995 random sample of 2,500 respondents and the 1996 random sample of 557 respondents are significantly different, reflecting growing proportions of the population who are former users and current users, and declining proportions who are unaware of the Internet, or who are aware of the Internet but have never used it.

Our survey samples have a close match on socio-economic variables compared with the U.S. population as a whole. Based on comparisons with 1990–91 U.S. Census data, respondents in our samples are similar to the national average in gender, ethnic mix, and age composition, but slightly wealthier and better educated. In addition to the higher income and educational levels, our data is subject to all the inherent limitations of phone surveys [2].

For the remainder of the article, our results refer to the 1995 survey, unless otherwise stated.

Two digital divides based on awareness and usage.

The first digital divide relates to awareness. As shown in Table 1, a disproportionate number of black and Hispanic respondents reported not being aware of the Internet in the 1995 survey (21% were black, and 10% were Hispanic) as compared to the 1990 census. In addition, this group was more likely to be female (64% of those who reported not being aware of the Internet in 1995 were female); older (41% were 50 and over); less well educated, and less well off (58% had a household income below \$25,000). The 1996 survey again showed that a disproportionate number of black respondents reported not being aware of the Internet (21% were black), although only 4% of those unaware of the Internet were Hispanic.

The second digital divide relates to usage. In the 1995 sample, longtime Internet users were more likely to be male (66% of longtime users were male), somewhat younger than average, very well educated (76% of our sample had a college degree or better), and very

between non-users and users did not appear to be highly significant. Non-users in the 1996 survey had similar demographic characteristics—56% of non-users were female, 20% had at least a college degree, and 21% had a household income over \$50,000.

Users and non-users have different set of beliefs about the Internet's value.

We asked respondents (both users and non-users who had heard of the Internet) to comment on the importance of various reasons for using the Internet. We examined how these views vary across Internet experience categories—non-users, former users, and recent and longtime current users. Broadly, longtime users, recent users, and former users share the same priorities while non-users have a different set of priorities. For each Internet experience category, we ranked the reasons on the basis of the proportion who answered “very important.”

The rankings of longtime users, recent users and former users are almost identical (see Table 3). The most

important reasons appear to be communicating with people using email (ranked first for longtime users, first for recent users, and

Table 1. Awareness of differentials by ethnic group

Ethnic breakdown of those who had not heard of the Internet in percent (actuals)	White	Black	Asian	Hispanic	Other	Number of respondents
1995 survey	63 (237)	21 (79)	2 (6)	10 (39)	5 (17)	100 (378)
1996 survey	73 (41)	20 (11)	4 (2)	4 (2)	0 (0)	100 (56)

much better off (58% had a household income over \$50,000—see Table 2); while recent Internet users were more likely to be male (55% of recent users were male), somewhat younger than average, considerably better educated (51% had a college degree or better), and better off (49% had a household income over \$50,000). In the second survey, 46% of users were female, showing that the gender gap is continuing to close. Users in the 1996 survey were younger than average, well educated (48% of users in the 1996 sample had at least a BS degree), and well off (47% had a household income over \$50,000).

In the 1995 survey, non-users who have heard of the Internet were more likely to be female (58% of non-users were female) but were otherwise close to average in terms of age, educational skills (26% had at least a college degree), and household income (26% had a household income over \$50,000). Racial differences

Table 2. Usage differentials by household income

Household income (in percent)	Longtime Internet user	Recent Internet user	Former user	Non-user heard of Internet	Non-user not heard of Internet
Under \$15,000	4	9	9	13	35
\$25–24,000	6	6	20	19	23
\$25–34,000	12	16	22	23	20
\$35–49,000	20	19	17	19	13
\$50–74,000	26	24	20	16	5
\$75–99,000	16	12	6	5	1
Over \$100,000	16	13	5	5	2
Number of respondents	230	256	152	1,392	286

tied for second for former users), getting information of both special (ranked second, second, and first) and general (ranked third, third, and tied for second) interest, and keeping up-to-date (ranked equal fourth, fifth, and fourth). Lesser reasons for using the Internet are business opportunities (ranked eighth, eighth, and fifth), contacting new people (ranked ninth, tenth, and tenth), and providing a good way to shop (ranked twelfth, twelfth, and twelfth).

The ranking of non-users who had heard of the Internet is somewhat different—they rank staying up-to-date first, more highly than the other experience

Table 3. Differing beliefs about the Internet's value between users and non-users

How important are these reasons for becoming an Internet user—ranking by percent who answered "very important"	Longtime Internet user	Recent Internet user	Former user	Non-user heard of Internet
Send and receive email	1	1	=2	6
Find information about special interests	2	2	1	=2
Find out general information of importance	3	3	=2	=4
Stay up-to-date with what is new	=4	5	4	1
Have customers/clients be able to reach you	=4	4	7	=4
Contact people sharing your special interests	6	6	6	7
Read messages and bulletin boards	7	7	9	9
Business opportunity to make money	8	8	5	=2
A convenient way to do banking	11	11	8	8
Have contact with new people	9	10	10	10
Nowadays it is just a good thing to do	10	9	11	11
A good way to shop for needed items	12	12	12	12

Note: The "=" symbol indicates no difference between the scores (e.g., "=3" means that third and fourth places were statistically tied).

categories whose ranks are tied for fourth, fifth, and fourth; non-users rank business opportunities tied for second, more highly than the other experience categories whose ranks are eighth, eighth, and fifth; and finally non-users rank sending and receiving email sixth, much less highly than users whose ranks are first, first, and tied for second.

These results suggest that socio-personal development is the major driving force for current and former users, whereas non-users perceive the reasons for joining the Internet somewhat differently. Non-users appear to be more strongly drawn to the Internet for business reasons and the opportunities for staying up-to-date.

Social/work networks important for stimulating interest/providing support.

Having asked current and former users their views on the most attractive features of the Internet, we then asked them how they were originally introduced to the Internet. Responses to our question indicated that social and work networks are important for introducing people to the Internet. Over half the respon-

dents reported they were introduced to the Internet either by learning at work or being taught by friends or family. Only about one-quarter reported being introduced to the Internet through a university or other formal course. The remaining one-quarter of respondents reported being self-taught.

We also asked current Internet users to identify

their sources of Internet advice. Again, we found it was social and work contacts that were important. When asked, "When you have a problem using the Internet, where do you first turn for help?" 35% of current users reported asking a personal friend and 24% a professional colleague. About 40% reported turning to formal help services—online help (14%), support person (10%), book or manual (10%) and phone service or technical support line (8%).

Even experienced users perceive significant barriers to getting started.

Our survey also explored the barriers to Internet usage as perceived by users and non-users alike. Respondents were asked, "For someone who has not tried the Internet before, how difficult would you say it is to get started?" Surprisingly, the responses from former, recent, and longtime current users were approximately the same: very difficult—16%, a little difficult—59%, and not at all difficult—25% (791 total respondents). Thus three-quarters of respondents believed that getting started on the Internet represents some degree of difficulty. We next probed how respondents perceived a number of potential obstacles to using the Internet.

We asked each respondent, "How much of an obstacle is (rotated list of obstacles) this to you?" on a scale "very much an obstacle," "an obstacle," "not an obstacle at all" or "don't know." The list of obstacles was: (1) no idea about how to do it, (2) costs too much, (3) no way to get access, (4) too complicated, and (5) uncom-

fortable sitting at a computer (for example, eye strain or back strain). The results of our survey show that these five obstacles can be clustered in three groups in decreasing order of importance:

- Group I: cost (59% reported this to be an obstacle or very much an obstacle)
- Group II: no idea how to do it (48% reported this to be an obstacle or very much an obstacle); no way to get access (43% reported this to be an obstacle or very much an obstacle); too complicated (42% reported this to be an obstacle or very much an obstacle).

- Group III: discomfort using computers (21% reported this to be an obstacle or very much an obstacle).

Key reason for stopping using the Internet is lost access. One of the most surprising results of our survey is the considerable churn among Internet users. On the basis of our survey, it would appear that in October 1995 the

number of former users approximately equaled the number of current users. The key reported reason why former users stopped using the Internet was loss of access to a computer (reported in 33% of cases). The other main reasons were lack of time (17% of cases) and equipment problems (10% of cases)—see Table 4. Interestingly, only 7% of respondents reported expense was the main reason they stopped using the Internet.

Users want traffic and navigational problems addressed.

Closely allied to the barriers to Internet usage are inhibiting factors that make usage difficult, discourage usage, and in the long term might stop people from using the Internet. Accordingly,

we asked respondents, “What do you like least about the Internet?” As reflected in Table 5, our results

Table 4. The reasons users drop out

Most important reason for stopping using the Internet for former users (in percent)	
Lost access to a computer	33%
Not enough time	17
Equipment trouble	10
Bills too high	7
Too hard to learn	6
Lost interest	3
Switched/lost/changed job	3
Only trial basis	2
Annoyed by strangers	1
No one reason	15
144 respondents	

Table 5. Ways to improve the internet

The least attractive aspects of the Internet (in percent)		The most desirable improvements to the Internet (in percent)	
Lots of traffic/too slow	18 %	Make more user friendly	15 %
Difficult to find things/complicated	15	Easy/improved access	12
Cost	9	Quicker speed in accessing information	11
Delays/connection problems	8	Having a map address	10
Difficulty in finding out what there is	3	Lower rates	7
People that abuse it	3	More security against theft or fraud	4
Not having a guidebook to the Internet	3	More powerful search commands	2
Other	14	Other	10
Nothing really	11	Need no improvement	5
Still learning	4	Have no idea/still learning	4
Don't know	12	Don't know	20
607 respondents		607 respondents	

a fifth of respondents expressed concerns about navigation problems—“difficult to find things/complicated” was cited by 15% of respondents, “difficulty in finding out what is there” was cited by 3% of respondents, and “not having a guidebook to the Internet” was cited by 3% of respondents. Only 9% of respondents said “cost” was the least attractive aspect of the Internet, perhaps reflecting the relatively higher wealth of current Internet users alluded to earlier.

Most desirable improvement—make it easier to use.

When asked, “If there could be one improvement in the Internet, what would that be?” respondents focused on making the Internet easier to use. Two-fifths of respondents said, “make the Internet more user-friendly,” or “easy/improved access,” or “having a map address” or “more powerful search commands.” These improvements (see Table 5) address the navigational problems mentioned previously. One in nine users wanted “quicker speed in accessing information,” addressing the traffic problems also mentioned previously.

Conclusion

Our preliminary results suggest that while the race/ethnicity divide among users and non-users who

are aware of the Internet is not highly significant, there continues to be income, education and gender differentials. And, perhaps most disturbingly, there appears to be a prominent racial/ethnic divide between respondents who were aware of the Internet and those who were not [6]. Moreover, the bias of our survey (like similar phone surveys of the American public) in favor of richer and more educated people leads to an underestimation of the already significant magnitude of this divide. Consequently the enduring concern over the inequities of access to the important social, economic, political, and personal resources made possible by the Internet appear to be justified by our research. Our survey also highlights the need for increased ease of use. Without improvements here, frustration levels will remain high and potential user benefits will, to some extent, go unrealized. **C**

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