

December 2003

Social and Usage Process Motivations for Internet Use: Differences between Light and Heavy Users

Tom Stafford
University of Memphis

Follow this and additional works at: <http://aisel.aisnet.org/amcis2003>

Recommended Citation

Stafford, Tom, "Social and Usage Process Motivations for Internet Use: Differences between Light and Heavy Users" (2003). *AMCIS 2003 Proceedings*. 289.
<http://aisel.aisnet.org/amcis2003/289>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2003 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

SOCIAL AND USAGE PROCESS MOTIVATIONS FOR INTERNET USE: DIFFERENCES BETWEEN LIGHT AND HEAVY USERS

Thomas F. Stafford

Fogelman College of Business and Economics

University of Memphis

tstaffor@memphis.edu

Abstract

Differences between light and heavy users of the Internet are investigated, using theoretical expectations derived from recent research on Internet diffusion and Uses and Gratifications theory. Measures of Internet usage process gratifications and Internet socialization gratifications were utilized to test for differences between light and heavy Internet users, and it was expected that light users would be more socially motivated in their Internet use while heavy users would be more motivated by gratifications related to usage processes. Results indicate that heavier, not lighter, users of the Internet on AOL are most highly oriented toward the social communication functions of the medium; heavy users are also quite usage-oriented. Though somewhat motivated by social gratifications, light users are most motivated by the access to resources and searching utilities of Internet usage processes.

Keywords: Internet, ISP, diffusion of innovation, uses and gratifications

Introduction

Looking back on its consumer introduction and early growth phases, the Internet has dramatically changed society in terms of its communication, acquisition and consumption behaviors. It was predicted soon after its introduction to the general public that the Internet would have important social implications (Armstrong, and Hagel, 1996), and recent years have been spent recognizing and observing this social impact as it manifested itself in the consumer marketplace. Instant messaging, e-mail, web logging, and the like, are all emblematic of the new and important social role that the Internet plays in daily life.

In the process of adopting the Internet as a communication channel, society has been evolving away from traditional mass-exposure media, in favor of the emerging interactive medium (Drèze and Zufryden, 1997; Stafford and Stafford, 1998). Along the way, individual communication patterns have also evolved toward a more interactive model, as individuals proceeded to utilize the new capabilities of the Internet medium (Rogers and Albritton, 1995). And, while much of the recent focus on the Internet has been on the transactional properties of the medium for e-commerce purposes, scholars have always recognized that the evolution of the Internet would serve both transactional and communicative goals (Drèze and Zufryden, 1997; Eighmey and McCord, 1998; Lohse and Spiller, 1998).

This study reports on social implications of the diffusion of the Internet in the consumer population. It is expected that the continued diffusion of the Internet into the general public will have far-reaching implications for communication patterns and social interactions in society. Diffusion Theory and Uses and Gratifications theory (U&G) are utilized here to investigate motivations and enjoyments related to Internet usage. A large sample of America Online users are surveyed, and subsequent analysis performed with U&G measures seeks to identify differences between heavy and light users with regards for their preference for, and usage motivations related to, social and communication-related gratifications for Internet use.

Uses and Gratifications for Internet Use

Researchers freely recognize the media-like capabilities and characteristics of the Internet (cf., Armstrong and Hagel, 1996; Eighmey and McCord, 1998; Kanan, Chang and Whinston, 1998; Turban, Lee, King and Chung, 2000). In considering the Internet from a media-use perspective, robust theoretical models from previous investigations of various media can be applied; one of these is Uses and Gratifications (U&G), which is a special model of communications theory useful for understanding adoption of new media technologies.

Internet uses and needs are well understood within the U&G framework (Eighmey and McCord, 1998; Stafford, in press). This media use theory was comprehensively applied in studies of the television medium as a technological innovation, decades ago (Katz, 1959; Klapper, 1963; McGuire, 1974). Findings from U&G television studies have already been applied in Internet research (Eighmey and McCord, 1998; Newhagen and Rafaeli, 1996; Rafaeli, 1988), but only by applying measures previously developed for specific television use. However, Internet-specific U&G measures have recently been demonstrated in the MIS literature (e.g., Stafford and Stafford, 2001) and are useful in the present context.

Applications of U&G theory in television research have consistently found motivations that were dichotomized between content or process related gratifications (Cutler and Danowski, 1980). Content gratifications concern the *messages* carried by the medium, and process gratifications concern actual *use of the medium*, itself. Process gratifications are evidenced by Internet users randomly surfing the Web for browsing enjoyment (Hoffman and Novak, 1996), whereas content gratifications are more related to the desire for specific site-related informational content such as stock quotes or news (Stafford and Stafford, 1998). Even though television U&G studies and early Internet studies based on television measures found the same consistent process/content dichotomy of motivations, more recent Internet-specific U&G research has identified a new dimension of *social* gratifications for Internet use, in recognition of the interactive social dynamics that are supported by the network (Stafford and Stafford, 2001).

In the examination of differences between consumers as regards their Internet use, there may be consumer segments that respond more readily to process gratifications, as well as segments that are more motivated by social gratifications. One specific area where differences are likely to be found is with regard to usage rates; to the extent that theoretical differences may be presumed between different categories of users, U&G dimensions can be useful as operational measures for assessing these differences (Stafford, in press).

Internet Usage Rates and Social Implications

Motivations related to the process of Internet use and the social benefits of Internet use have the most promising capabilities to differentiate between groups of users who access a given technology such as the Internet more or less frequently (cf., Adams, Nelson and Todd, 1992, Emmanouilides and Hammond, 2000, Kraut et al., 1999). There are several ways to look at motivations for Internet use. One relates to simple demographics; it has been observed that heavy users frequently use the Internet for social purposes (Emmanouilides and Hammond 2000, Karahanna and Straub 1999), and Internet utilities related to social interaction can be considered a motivating factor influencing Internet use. For example, e-mail represents a key reason for initiating on-line sessions (Emmanouilides and Hammond 2000); in the home, where much consumer use of the Internet transpires, e-mail appears to be the *primary* motivation for use of Internet (Kraut et al. 1999).

In diffusion-based perspectives of Internet adoption (e.g., Stafford, in press), “less heavy” users (operationally, the laggards or late adopters) are concerned with learning how to use the technology; they might seek interpersonal support and guidance, rather than mediated information. By contrast, earlier adopters (operationally, the heavy users) are more likely to use mediated information than interpersonal sources of information in making usage decisions (Mahajan, Muller and Bass, 1990; Midgley and Dowling, 1978). So, while heavy-use innovators might be expected to be media motivated (Mahajan, Muller and Bass, 1990; Mahajan, Muller and Srivastava, 1990) and would be expected to be more interested in the technology, light use non-innovators are thought to be primarily socially motivated (Uray and Dedeoglu, 1997). In light of diffusion theory findings on technology use, light users of the Internet might be expected to be more motivated by social aspects of the network (Stafford, in press).

Even so, the evidence is largely anecdotal. In the one instance related to Internet use levels that is not demographically oriented (e.g., Stafford, in press), the evidence is generally related to innovation behavior and usage levels are only implicated indirectly as an operationalization of adopter status. For that reason, it will be useful to examine a large sample of Internet users for differences in social motivations for Internet use across differing usage levels.

Method

Data was collected from a large sample of AOL users for analysis. Respondents were presented with a questionnaire adapted from Stafford and Stafford (2001), who developed a list of measures characteristic of Internet-specific Uses and Gratifications dimensions, including both usage process gratifications and social gratifications. In the current survey, each measurement scale exhibited acceptable levels of internal consistency. The social gratification scale produced a coefficient alpha of .80, and the usage process gratification scale produced an alpha of .8354. These U&G dimensions and their associated measures are represented in Table 1.

Table 1. U&G Measures Adopted from Stafford and Stafford (2001)

Social Gratifications ($\alpha = .80$)	
Chatting (live interactions)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Friends (people who are important to you)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Interaction (communicating with people)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
People (social interactions, in general)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Process Gratifications ($\alpha = .8354$)	
Resources (online services and utilities that you use)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Search Engines	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Searching (looking for specific information)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Surfing (browsing the web, not necessarily with a specific goal)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Technology (information technology – computer systems that you access, learn about, or use when online)	
Very Important	___:___:___:___:___:___:___ Very Unimportant
Web Sites	
Very Important	___:___:___:___:___:___:___ Very Unimportant

Respondents were instructed to indicate how important each specific aspect of using the Internet was to them, personally, by using the scales to indicate their opinion. Each potentially gratifying aspect of Internet use was presented with a 7-point semantic differential scale anchored by Very Important/Very Unimportant. As discussed above, the general expectation of this study was that light Internet users would be more socially oriented in their use of the network and its applications, while heavy users are more usage-process oriented. This translates into the expectation that media usage processes (i.e., process gratifications) would be more characteristic of heavy users, while Internet-mediated socialization would characterize light users. These assumptions were tested on a large sample of Internet users.

Nine hundred and fifteen AOL users were recruited to complete a U&G questionnaire during a one-week period at the AOL Opinion Place site. Survey respondents were reasonably balanced across age and gender categories, with 16.6% of respondents between 18–24 years of age, 21% between 25–34, 19.8% between 35–44, 20.4% between 45–54, and 22.2% reporting 55 years of age or older. Of these, over 48% were men, and 51.9% were women. In order to assess the theoretical expectations related to the usage levels, the respondent group was divided into light and heavy user groups. This was achieved by a quartile split based on responses to a semantic differential scale that asked “How frequently do you use the Web?” The scale was anchored by frequently/infrequently and had 8 response points. The mean on the question for the sample was 5.78, and the first quartile was demarcated by a score of 5; the fourth quartile was indicated by 7. 199 of 915 users were in the first quartile of response, while 107 were in the fourth quartile. This split operationally defined light and heavy users for purposes of analysis.

Analysis of variance was performed in SPSS 10.0, based on the quartile split of the sample and the process and social gratifications measures shown in Table 1. Results demonstrated distinctive differences between light and heavy users, but not in the directions expected.

Results

As shown in Table 2, in comparing light and heavy AOL users, there were significant differences for every variable in both gratification dimensions. As expected, heavy users considered Internet media usage processes to be more gratifying than did light users. However, the expectation that light users would be more socially motivated was not borne out. In fact, for all of the variables comprising both process and social Internet usage gratifications, heavy users scored higher than light users.

Table 2. ANOVA Results

Variable	Gratifications	F	p > F	Mean/Heavy	Mean/Light
Chatting	Social	8.756	.003	3.935	3.236
Friends	Social	6.167	.014	5.832	5.352
Interaction	Social	32.254	.000	5.477	4.281
People	Social	14.877	.000	5.290	4.518
Resources	Process	30.295	.000	6.308	5.442
Search Engines	Process	34.116	.000	6.336	5.317
Searching	Process	38.216	.000	6.421	5.472
Surfing	Process	89.580	.000	6.047	4.035
Technology	Process	15.201	.000	6.009	5.332
Web Sites	Process	59.326	.000	6.467	5.271

There are several general trends to consider. First, means across both usage levels were typically in the “important” range, consisting of scores that ranged above the midpoint of the 7-point scales that were used. There was a single exception to this: mean scores for the “chatting” component of the social gratification dimension were below the scale midpoint. Light users produced a mean of 3.2, while heavy users produced a mean of 3.9 for “chatting.” This is puzzling, since means for “interaction,” a variable that seems related to Internet chat, ranged from the low 4’s to mid 5’s.

The sharpest distinctions between light and heavy Internet users were in the form of the means for “interaction” on the social gratification dimension, and for “surfing on the Internet usage process gratification. The light user mean for “interaction” was 4.28, as compared to 5.477 for heavy users. Light users scored 4.035 on “surfing,” while heavy users scored 6.047. The highest mean on the social dimension was 5.832 for “friends” in the heavy use group, and 6.467 for “web sites,” also among heavy users. The lowest means were 3.236 (among the light users) for the “chatting” aspect of the social dimension and 4.035 for the process variable “surfing,” also among the light users. Clearly, light users were not entirely process-oriented, but it also can be said that they were not as socially motivated as heavy users, either. Even so, the strongest means for the light user group were process-oriented: “resources” at 5.44 and “searching” at 5.47.

Discussion

A diffusion of innovations perspective generated the expectation that light users would be socially motivated; it has been a standard precept of diffusion theory that innovators get their information from mediated sources, while new users seek the more credible information found in interpersonal sources when deciding about new ideas and things to try (cf., Mahajan, Muller and Bass, 1990; Mahajan, Muller and Srivastava, 1990; Midgley and Dowling, 1978). Based on this robust finding in the diffusion literature, a generalization to the diffusion of the Internet was made.

In light of the finding that social gratifications were arguably more impactful among heavy users, we have to speculate that the Internet is a unique sort of innovation as compared to telecommunications technologies diffused in the past. Conventional wisdom on diffusion theory arising from studies of phone system adoption has tended to suggest that new communication technologies will diffuse based on interpersonal communication motivations (e.g., Krishnan, Bass and Kumar, 2000), as per the venerable word-of-mouth effect which is considered to be a factor internal to the market of potential adopters. However, emerging views suggest that external factors such as the ready availability of easy-to-use service providers specifically like AOL, rather than internal [adopter group] factors related to the “social contagion” diffusion effect, are more predictive of Internet adoption (cf., Rai, Ravichandran, and Samaddar, 1998).

In consideration of previous communication innovations, the telephone diffusion process is instructive. Phone adoption trends seem to have evolved in response to both economic and social desires in society (Flynn and Preston, 1999); when considering simple telecommunications functionality, the phone diffusion process was more influenced by social variables related to lifestyle (Dordick, 1993), yet when telephone technology was adapted to provide more media-like services, such as audio information services over the phone system, distinct media motivations surfaced to explain adoption patterns (Atkins, 1995). Interestingly, one of the most important societal characterizations of telephones has been that of a “public good” that acts through information exchange effects to reduce transaction costs in normal life (e.g., Artle and Averous, 1973). The Internet has widely been considered to have similar economics effects (e.g., Bakos, 1998), yet, in comparison to telephones, it is something considerably more than just a communication resource.

The Internet is simply different from innovations we have studied before, and its adoption processes are not like those we have seen with previous media or communications innovations (Rai, Ravichandran, and Samaddar, 1998). Aside from the well-understood utility of networked computing, the Internet also provides a robust interpersonal communications venue that operates in parallel, perhaps even in synergy, with the machine communications venue provided by the network. As such, it would appear to represent an entirely new mode of human discourse and interaction (Roger and Albritton, 1995). Experienced heavy users, operating with the benefit of greater experience and understanding, naturally would be the ones mostly like to perceive this potent combination of functionalities, and this may be the reason for the results we see here.

Certainly, there is more than enough anecdotal evidence of the power of e-mail as a motivation for heavier Internet use (e.g., Emmanouilides and Hammond 2000; Kraut et al., 1999), and we have known for some time that heavy Internet users find social uses for the Internet. The apparent fact that diffusion processes work differently for Internet adoption and usage decisions (i.e., new users are not as socially motivated as diffusion theory would suggest) simply implies that the Internet is a medium that is different from what has been studied in the past for many theoretical expectations generated studies of single-direction mass exposure media to be contextually irrelevant. If anything, the more you learn about the Internet, the more you use it, and the more you find to use it *for*. It is truly an emergent meta-medium, capable of untold layers of functionality for users.

Implications

Since the balance of customers available to adopt Internet services are likely to be the less-than-heavy users who are not already committed to a service on a regular basis, the results of this study do not offer any particular guidance for recruiting new users as much as they offer useful considerations for retaining current heavy users. Heavy users, it appears, prize the usage processes of the Internet, so service providers would do well to ensure trouble free and seamless service connectivity to maintain satisfaction among a usage group that is clearly motivated by usage process gratifications.

However, given that heavy users, the customers of choice for most markets, are also socially motivated, service providers would also do well to look to increasing the quality and range of applications that provide social connectivity. Spam, as a highly visible and volatile issue among Internet users, might well serve as a point of friction to high volume customers who care as much for

how they use the Internet as they do for whom they use it to communicate to. These are the e-mail power users, so spam is likely to be a more significant issue with this group

Conclusion

915 AOL users were surveyed in an effort to determine whether theoretical expectations about the social utility of Internet use drawn from diffusion theory would pertain to the new media usage models that are emerging in recent Internet usage studies. While it was found that light users are not as socially motivated as expected, it was also found that there is a strong social component to Internet use, particularly among the heavy user. If customer retention is important, it is suggested that ISP operators can focus on ensuring reliable, trouble-free use for their high-volume customers, since they are likely to be more motivated by the usage processes related to the Internet. Yet, operators ought to be thinking about how to prevent undue restrictions and inconveniences related to social use of the Internet for these heavy use customers, as well, since heavy users appear to be equally process and socially motivated in their network use.

References

- Adams, D. A., Nelson, R. R. and Todd, P. A. (1992), "Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication," *MIS Quarterly*, 16, 227-247.
- Armstrong, A.G., and Hagel, J. (1996), "The Real Value of Online Communities," *Harvard Business Review*, 74 (3), 134-141.
- Artle, R. and Averous C. (1973), "The Telephone System as a Public Good: Static and Dynamic Aspects," *Bell Journal of Economics & Management Science*, 4(1), 89-100.
- Atkins, D. (1995), "Audio Information Services and the Electronic Media Environment," *Information Society*, January-March, 75-83.
- Bakos, Y. (1998), "The Emerging Role of Electronic Marketplaces on the Internet," *Communications of the ACM*, 41 (8), 35-42.
- Cutler, N.E. and Danowski, J.A. (1980), "Process Gratification in Aging Cohorts," *Journalism Quarterly*, 57, 269-77.
- Dordick, H.S. (1993), "America Calling: A Social History of the Telephone to 1940," *Telecommunications Policy*, (17(5)), 397-398.
- Drèze, X., and Zufryden, F. (1997), "Testing Web Site Design and Promotional Content," *Journal of Advertising Research*, 37 (2), 77-91.
- Eighmey, J. and McCord, L. (1998), "Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web," *Journal of Business Research*, 41, 187-194.
- Emmannouïdes, C. and Hammond, K. (2000), "Internet Usage: Predictors of Active Users and Frequency of Use," *Journal of Interactive Marketing*, 14, 17-32.
- Flynn, R., and Preston, P. (1999), "The Long-Run Diffusion and Techno-Economic Performance of National Telephone Networks: A Case Study of Ireland, 1922-1998," *Telecommunications Policy*, 23(5), 437-457.
- Hoffman, D.L. and Novak, T.P. (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing*, 60, 50-68.
- Kannan, P.K., Chang, A., and Whinston, A.B. (1998), "Marketing Information on the I-Way," *Communications of the ACM*, 41(3), 35-40.
- Karahanna, E., and Straub, D. W. (1999), "The Psychological Origins of Perceived Usefulness and Perceived Ease-Of-Use," *Information & Management*, 35, 237-250.
- Katz, E. (1959), "Mass Communication Research and the Study of Popular Culture: An Editorial Note on a Possible Future for this Journal," *Studies in Public Communication*, 2, 1-6.
- Klapper, J.T. (1963), "Mass Communication Research: An Old Road Resurveyed," *Public Opinion Quarterly*, 27, 515-527.
- Kraut, R., Mukhopadhyay, T., Szczypula, J., Kiesler, S., and Scherlis, B. (1999), "Information and Communication: Alternative Uses of the Internet in Households," *Information Systems Research*, 10, 287-303.
- Krishnan, T.V., Bass, F.M, and Kumar, V. (2000), "Impact of a Late Entrant on Diffusino of a new Product/Service," *Journal of Marketing Research*, 37, 299-278.
- Rai, A., Ravichandran, T., and Samaddar, S. (1998), "How to Anticipate the Internet's Global Diffusion," *Communications of the ACM*, 41(10), 97-106.
- Turban, E., Lee, J., King, D., and Chung, H.M. (2000). *Electronic Commerce: A Managerial Perspective*. Upper Saddle River, NJ: Prentice Hall.
- Lohse, G.L., and Spiller, P. (1998), "Electronic Shopping," *Communications of the ACM*, 41(7), 81-87.

- McGuire, W.J. (1974), "Psychological Motives and Communication Gratification," in *The Uses of Mass Communications: Current Perspectives on Gratifications Research*, J. Blumler and E. Kaatz, Eds.. Beverly Hills, CA: Sage Publications.
- Mahajan, V, Muller, E. and Bass, F.M. (1990), "New Product Diffusion Models in Marketing: A Review and Direction for Research," *Journal of Marketing*, 54, 1-26.
- Mahajan, V., Muller, E. and Srivastava, R.K., (1990), "Determination of Adopter Categories by Using Innovation Diffusion models," *Journal of Marketing Research*, 27, 37-50.
- Midgley D.F. and Dowling, G.R. (1978), "Innovativeness: The Concept and Measurement," *Journal of Consumer Research*, 4, 229-242.
- Newhagen J. and Rafaeli, S. (1996), "Why Communication Researchers Should Study the Internet: A Dialogue," *Journal of Communication*, 46, 4-13.
- Rafaeli, S. (1988), "Interactivity: From new media to communication," in *Advancing Communication Science: Merging Mass and Interpersonal Processes*, R. Hawkins, J. Wieman, and S. Pingree, Eds. Newberry Park, CA: Sage.
- Rogers, E.M. and Albritton, M.M. (1995), "Interactive Communication Technologies in Business Organizations," *Journal of Business Communication*, 32, 177-195.
- Stafford, T. F. (in press), "Differentiating between Adopter Categories in the Uses and Gratifications for Internet Services," *IEEE Transactions on Engineering Management*, special issue on Internet Diffusion.
- Stafford, T.F. and Stafford, M.R. (1998), "Uses and Gratifications of the World Wide Web: A Preliminary Study," in *Proceedings of the 1998 American Academy of Advertising Conference*, D. Muehling, Ed. Pullman, WA: Washington State University.
- Stafford, T.F. and Stafford, M.R. (2001), "Identifying Motivations for the Use of Commercial Web Sites," *Information Resources Management Journal*, 14, 22-30.
- Uray, N. and Dedeoglu, A. (1997), "Identifying Fashion Clothing Innovators by Self-Report Method," *Journal of Euro-Marketing*, 6, 27-46.