

## INTRODUCTION TO ISSUE 2: IT, MASS MEDIA AND OTHER DAILY ACTIVITY

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Given its focus on people's daily activities, this second issue of IT&Society should be seen as the natural extension of the first issue. Where Issue I examined the impact of the Internet on *social activity and sociability*, this second issue concerns *all other* daily behavior that could possibly be affected by IT use. Because these questions are clearly linked, and because many of the data sets, authors and approaches are similar, much of the ground will be familiar. The findings, however, are completely new, and they represent a developing theoretical direction for the study of information technology and society. How has increasing Internet use changed (or not changed) the way that people live their daily lives?

The Internet can serve a number of different functions—personal communications, information gathering, entertainment, shopping and bill paying and the like—and the extent to which time on the Internet changes other daily activities may in part be determined by its functional use.<sup>1</sup> With this functional perspective in mind, many of the articles in this issue are particularly focused on the impact of IT on alternative communications media, especially TV and print media.

However, time on the Internet may also impact other daily activities as well. New IT time could conceivably come from alternative *free-time* activities, such as hobbies, fitness or social time, simply because users prefer to spend time on the Internet. The time might come from time spent on *travel*, since telecommuting or online shopping could reduce the need to leave one's home. More broadly, it could come from *work or education*, perhaps as these activities are accomplished more quickly and easily with the new technology. Alternatively, time spent on *house, child and family care* could possibly be displaced, as people find an additional way to avoid facing these often unpleasant daily tasks. Finally, *personal care* activities, such as eating, sleeping and grooming could be affected by the allure of or even pressure created by the new technology, as seems to have been the case in the early days of television. Basically, there are many possible theoretical expectations for how and why

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<sup>1</sup> See Exhibit 1 in the second article by Robinson et al. in this issue for a typology of functional use.

Internet use could impact any part of daily life. It remains an empirical question to find which of these activities are in fact affected.

As with many social science questions, there is no single answer that emerges from these studies. The analyses in this issue run the gamut—the authors reach a variety of different conclusions based on a variety of different data sets, using a variety of empirical methods. Some conclude that the Internet has had little, if any, impact on the way people spend their daily lives, while others contend that the Internet appears to have displaced nearly every other daily activity. The point of this issue is to again bring these diverse studies into a single forum, allowing the reader to compare and judge the conflicting approaches and findings. The editors expect, at the least, that this issue offers the beginning of an exciting and fruitful scholarly dialogue.

The organization of this issue follows that of issue 1 with time-diary articles followed by time-estimate studies.

### **TIME-DIARY STUDIES**

The social science method that perhaps has the ideal capacity to test all of these hypotheses and possibilities is the *time diary*. Hence, as in Issue 1, studies using the diary approach are covered first. In this issue, seven such studies are included (two more than the five in issue 1) and these include three U.S. diary studies, one from Canada, one from England and two from the Netherlands.

The first diary article, based on the 2002 SIQSS time-diary study, employs the newest and most detailed diary approach with over 5000 respondents aged 18 to 65. This time-diary study takes advantage of the power of the Internet itself as a survey data-collection method, in that it captures more of the multi-tasking (called “secondary activities” in diary terminology) that seems to have increased as people have incorporated new IT (such as the Internet, cell phones and PDAs) into their lives. The SIQSS diary has the further advantage of obtaining a more detailed account of primary activities, because it focuses on only 6 hours of the respondent’s day rather than the full 24 hours examined in diaries using telephone, mail or personal data collection modes. The authors find that the time spent on the Internet appears to displace many other daily activities. In terms of absolute time reductions, the activities that appear to be most affected by Internet use are sleep, TV and work. However, once the amount of time that individuals spend on each activity in a given day is taken into account, it is found that hobbies, socializing and reading show the largest proportional reduction in time. Thus, it is discretionary time that appears most likely to be traded off against Internet use. Total time spent on these activities is reduced by more than 20% among those who spend more than an hour a day on home Internet use.

The second article is by the University of Maryland team, who collected traditional telephone-based diaries from 1775 adult respondents. This analysis

finds that IT users (defined both with “yesterday” diary measure and “long-term” follow-up measure) show consistently lower times on sleep and TV. Other analyses find interesting comparisons between the yesterday users compared to the long-term users. Among those using the Internet yesterday, significantly more time is spent on education and less time working (perhaps because the yesterday was a day off or a day at school) than nonusers. In contrast, the analysis of those using the Internet in the last month (“long-term” users) finds that Internet users report significantly *more* paid work than nonusers, while education differences are not significant. Similarly, yesterday users spent *less* time in travel and personal grooming, while long-term users spend *more* time on travel and grooming. In the long-run comparison, users also spent significantly *more* time reading, which contrasts with the findings of early TV studies showing reading declines (Robinson 1972). Rather than offering evidence that the Internet is displacing print media, these findings suggest that IT users are actually more active in these information-gathering activities than are nonusers.

The third article in Issue 2 addresses one of the limitations of many time diary studies—their short-term focus on a single day. In this article, Fu, Wang and Qiu go beyond the typical “snapshot” one-day data by taking advantage of an Alfred P. Sloan Foundation study in which full 168-hour weekly diaries were collected from all family members in approximately 450 dual-earner households. Among parents in these households, an average of 4 hours per week was devoted to IT use. These IT users spent roughly one hour per week less on sleep and 5 hours less on paid work than nonusers. Among the children in the survey, the 5 hours given over to IT was offset by 1.5 hours less time on other hobbies/games, an hour less grooming, an hour less studying and an hour less on other activity.

The next article relies on a national 1998 telephone diary study conducted in Canada with more than 10,000 respondents. Based on these data, Pronovost is also able to make comparisons of IT users versus nonusers using both a yesterday and long-term measure of IT use. He finds that respondents reporting IT use in their day’s diary reported less sleep than nonusers, but no less time watching TV, and more time reading, corresponding and doing hobbies; these differences largely held up after adjustment for several, demographic predictors. In contrast, when the analysis focused on longer-term users, users watched significantly less TV than nonusers, but sleeping times were the same.

The fifth article in Issue 2 utilizes a panel time diary study of about 1000 households in the U.K. The methodological advantage of a panel study is that it makes it possible to draw causal implications not possible using single-time surveys. In this analysis, Gershuny finds almost no significant displacement effects, although those who became *new IT users* over the one-year period of the study report less time doing unpaid work (a trend found among nonusers and among previous users as well), studying, engaging in hobbies and doing nothing. Gershuny concludes that these results show no evidence of a “privatization

effect” of home IT use, since no notable changes in media use were found in any of the three groups across the span of the study.

The next two articles examine for the first time the relation of IT and other activity from weekly time-diary studies in the Netherlands, specifically the Time-Use Study (TUS) conducted there in the Fall of 2000 with about 1800 respondents aged 12 and above. DeHaan and Huysmans are able to link these data to earlier diary studies conducted in 1985, 1990 and 1995. IT use during the diary week has increased steadily from 18% in the 1985 sample to 60% in 2000, while usage per user has remained relatively stable—3.5 hours in 1985 to 3.9 hours in 2000. In the 2000 TUS, the authors find that, while Internet users have about 3 hours more free time than nonusers (due to less paid work and family care), no specific free-time activities stand out as significantly different. While at the bivariate level, users do sleep and watch TV less, these differences do not hold after adjustment for demographic factors. As in the above studies, reading (especially books) by IT users is slightly *above* average; users also report more cultural activity but less volunteer activity. Returning to the main focus on social life in issue 1 of *IT&Society*, deHaan and Huysman find almost no difference in the socializing and visiting activity of users vs. nonusers.

In the final article in this section on diary studies, van Eijct and van Rees examine this same Dutch TUS diary study from the perspective of media user types, taking advantage of the detailed media content incorporated into these Dutch diaries. The authors find 8 factors emerging from a factor analysis of the 19 categories of media content included in the diaries. Only two of the factors involve Internet use, one for serious information content and one for less serious content. The first factor tends to be characterized by respondents who are younger and male, the second more by females, but also by respondents of above average education. In other words, their analysis suggests that at the same time Internet use is: 1) not a single media factor and depends on the purpose and audience for its use and 2) independent of use of other media for other purposes. The authors conclude that these results indicate that media use is far more nuanced than suggested in Bourdieu’s theoretically ideal types of media users.

### **TIME-ESTIMATE QUESTIONS**

The next set of articles relied on respondent estimates of time spent using IT and other media. The Neustadtl and Robinson article examines traditional and new questions on TV and newspaper use in the 2000 General Social Survey (GSS), which for the first time included a module of questions on IT use that were asked of almost 2300 respondents aged 18 and older. The authors find that Internet users report watching significantly *less* TV and reading newspapers *more* often than nonusers, but that the differences do not vary systematically with extent of Internet use and do not hold after adjustment for demographic factors. The results are also mixed for the new set of “benchmark” GSS questions on usage of the Internet compared to other media

for for health and politics: heavy Internet users were much more likely than nonusers to consult other media sources, while lighter Internet users used these sources less than nonusers. Overall, the authors conclude that there is little evidence for a displacement effect of Internet use, since Internet users appear to spend more time on traditional media, especially print media.

Much the same conclusion emerges from the Cole and Robinson analysis of the media and other time -estimate questions in the UCLA national surveys, which interviewed more than 2000 respondents aged 12 and older. Internet users aged 18-64 report more reading of print media, more videogame playing and music listening than nonusers, both before and after MCA adjustment for demographic factors. While users reported 5 hours less weekly TV viewing than nonusers, that difference was mainly accounted for by these demographic factors. In an analysis of separate subjective media use UCLA questions, Cole and Robinson find Internet users reporting less importance of TV and other sources for information than nonusers did; however that did not hold for entertainment content.

In their analysis of 1999 SIQSS questions asked of 4133 national respondents, Nie and Erbring find Internet users reporting that they estimated spending consistently less of their time watching TV, reading newspapers, shopping and commuting in traffic, the more they estimated using the Internet. Only for the TV question, however, did almost as many respondents say their time on an activity had decreased (46%) than remain unchanged (50%) after being on the Internet. On the other hand, some 21% of respondents said their time doing work at home had *increased*, compared to only 7% who said it had decreased – indicating a significant invasion of work into the home. (Two years later, Scarborough Research (2001) found 70% of their sample estimating their TV use had remained the same, with 23% saying less and 7% more; slightly lower percentages said their magazine, newspaper or radio use had decreased. The Pew Internet Project similarly found 23% of their Internet respondents estimating reductions in TV use (and 14% in newspaper use) as a result of their going online, with 72% saying no change (Horrigan 2002).)

The final article by Horrigan and Schement examines the alleged reductions in purchasing of recordings as a result of accessing that content free from Napster and other Internet sites. Based on a 2001 Pew Internet and Daily Life Project survey of more than 2000 national respondents, the authors find that people who use the Internet for information seeking are 2½ times more likely to be online purchasers of products (including music recordings) than those who do not; online purchasers are also more likely to be more fervent Internet users in general, to be music listeners and to be white, female and married. The authors argue that the act of downloading represents a step toward ultimate consumer purchase, a step that has been widely misunderstood by the music industry. Finally, they offer three policy suggestions to improve relations between the industry and its consumer base.

**TABLE 1: SUMMARY OF FINDINGS REGARDING TV AND OTHER MEDIA**

Media Activity	TV		Reading		Radio/stereo	
	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term
ARTICLE	Unadj / Adj		Unadj / Adj		Unadj / Adj	
1. SIQSS	NA	-/-	NA	-/-	NA	0/0
2. Univ. of Maryland	-/-	-/-	+/+	0/0	0/0	0/0
3. Sloan Family	-/0	NA	0/0	NA	0/0	NA
4. Canada	-/-	0/0	+/+	+/+	0/0	0/0
5. UK	0/0	NA	0/0	NA	0/0	NA
6. Netherlands A	-/0	NA	0/0	NA	0/0	NA
7. Netherlands B	NA		NA		NA	
8. Pew 1998-00	0/0	0/0	+/0	+/+	NA	
GSS	-/0	NA	+/0	NA	NA	
9. UCLA	-/0	NA	+/+	NA	+/+	
10. SIQSS	-/NA	NA	-/NA	NA	NA	
11. Pew	NA		NA		NA	

**OVERALL**

Like most evidence in the social sciences that attempts to integrate the results from several sources, methods and authors, there is far less than unanimity of results and conclusions about time displacement and the Internet. At the risk of oversimplification, an overview of the findings in this issue is summarized in Tables 1 and 2. The designation + in this table refers to positive relations (more Internet use is associated with increases in that activity), the designation - with negative relations or time displacement and 0 with no significant relation. In each cell of Tables 1 and 2, the bivariate or unadjusted relation is shown first and the multivariate relation after the slash (/) sign. Results are also shown separately for short-term comparisons (yesterday) and long-term (weekly, monthly or longer-run IT use). The term NA means that the study contains no applicable data to test the hypothesis in question.

Concerning television, most studies in Table 1 find no relation with Internet use, especially after control for other factors. This is in line with the findings from the A.C. Nielsen (1999) study cited by TV industry executives, which found no lower viewing among personal computer purchasers. Four of the present studies (Sloan, TUS, GSS and UCLA), in contrast, do find a significant bivariate difference initially, but one that is largely explained by Internet users having higher education, lower age and the like. The U.K. panel study similarly found an overall lower TV viewing figure for IT users, but one that did not hold when new users, prior users and nonusers were examined separately. The main exceptions are the SIQSS Internet diaries, the University of Maryland telephone and Canadian telephone diary studies, and these do provide the most persuasive evidence of a displacement effect of TV by IT. Industry researchers place most

**TABLE 2: SUMMARY OF FINDINGS REGARDING OTHER DAILY ACTIVITY**

Other Activity	Sleep		Work/Education		Family care	
	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term
	Unadj / Adj		Unadj / Adj		Unadj / Adj	
ARTICLE						
1. SIQSS	NA	-/-	NA	-/-	NA	0/0
2. Univ. of Maryland	-/-	0/0	+/+	-/-	-/-	-/0
3. Sloan Family	-/-	NA	-/-	NA	0/0	NA
4. Canada	0/0	-/-			-/0	-/0
5. UK	0/0	NA	-/0	NA	0/0	NA
6. The Netherlands	-/0	NA	-/-	NA	-/-	NA

reliance on an A.C. Nielsen (1999) study that found no lower TV viewing among personal computer purchasers.

The more interesting, and counterintuitive (given the zero-sum nature of time as a variable), findings concern higher reading times among IT users. This shows up after multivariate adjustment in almost half of the studies, and the relation usually holds after these multivariate adjustments for various background predictors are taken into account. Notably, only the SIQSS study shows significantly lower reading times among IT users.

Outside of the UCLA study showing *higher* music listening the more one uses the Internet, none of the other studies find any significantly higher or lower radio or music listening by IT users—as shown in the third column of Table 1.

More persuasive evidence of the linkage between Internet usage and other information media comes from a 30+ year panel study conducted by Jennings (in review), although his emphasis was on the popular use of the media.

Table 2 covers non-media activity, and it provides some support for Internet users getting less sleep, but mainly in the SIQSS and University of Maryland telephone-diary studies, and to a lesser extent in the Sloan family and Canadian diaries. Using an estimate question, no such sleep difference was found in the UCLA estimate question (not shown in Table 2).

There is also some evidence of lower paid work and higher education among users, a finding that needs further study to understand whether this means Internet users are working at home, are interviewed on a day off from work or just work fewer hours for other reasons. Almost no studies provide consistent or persuasive support that more IT use is associated with less housework, child or family care.

Overall, then, there is some evidence that Internet use is associated with lower times at work, in TV viewing and in sleep. However, like the findings about social life in Issue 1, the evidence is scattered, often insignificant and sometimes explained by simple background factors. To offer a more historical perspective, this collection of articles suggests that IT has not affected the

communications environment to the same degree that TV did nearly more than half a century ago.

Television still continues to consume 3 to 10 times as much of people's time as IT. Historically, and unlike other modern technologies, TV truly revolutionized how people spent time (Robinson and Godbey 1999). It seems doubtful that IT will ever have a similar temporal or consistent impact on our daily lives.

#### REFERENCES:

- Horrigan, J. B. 2002. Getting Serious Online: As Americans Gain Experience, They Use the Web More at Work, Write Emails with More Significant Content, Perform More Online Transactions, and Pursue More Serious Activities. *Pew Internet & American Life Project*. Available at: <http://www.pewinternet.org/reports/toc.asp?Report=55>
- Jennings (in review). *Public Opinion Quarterly*
- Nielsen/NetRatings 1999. "TV Viewing in Internet Households. A Report by Nielsen Media Research", May 1999; <http://www.nielsen-netratings.com/>
- Robinson, J.P. 1972. Television's Impact on Everyday Life: Some Cross-National Evidence. In E. Rubinstein *et al.*, *Television and Social Behavior*, Vol 4: pp. 410-431. Washington, D.C.: Government Printing Office.
- Robinson, J.P. and Godbey, G. 1999. *Time for Life: The Surprising Ways Americans Use Their Time*. University Park, PA: The Pennsylvania State University Press.
- Scarborough Research 2001. First Internet Study Reveals Changes in How Online Consumers Use Traditional and Internet Media"; May 2001; <http://www.scarborough.com/>