CONTENT DIVERSITY ONLINE: MYTH OR REALITY?

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ABSTRACT

With literally billions of Web pages constituting the publicly available Web, it is reasonable to assume that diverse types of material are easily available to users. Nonetheless, it remains an empirical question to see whether people actually access the vast diversity of resources theoretically available to them online. In this chapter, I draw on data about people's actual online behavior to assess whether users visit diverse types of content on the Web or whether their online information-uses mirror off-line behaviors. Findings suggest that although people turn to a variety of sources for information online, their actions seem to resemble off-line media consumption patterns. I explore why these behaviors are not necessarily a reflection of user preferences, rather they are at least in part a function of how content is organized and presented online, and skill differences among users.

The Importance of Studying "Exposure Diversity"

A vast amount of material is available to users of the Web. Search engines index the contents of billions of pages – by last reports one of the most widely used search engines, Google, claims to index over 8 billion – yet they admittedly only cover a fraction of all available content (Sullivan, 2005). Unlike with other media, once content on the Web is publicly available anyone with knowledge of its Web address can access it. This has led to much enthusiasm regarding the medium including justification for media deregulation by former Federal Communications Commission Chair Michael Powell (Manjoo, 2003). But does the Web really offer a panacea to concerns about diversity in the media landscape? In addition to looking at what is theoretically available to users, I argue that we must also consider what is realistically within their reach (Hargittai, 2000: 234-235.). In order to understand realistic accessibility as opposed to mere availability, we must consider what factors influence the types of material that people are most likely to retrieve online. In this chapter, I argue that the way content is organized on Web sites and users' ability to navigate the Web both influence what material is most easily accessible.

Napoli (1999) outlines a helpful framework for approaching questions about media diversity by identifying three different types: 1) source diversity; 2) content diversity; and 3) exposure diversity. Webster (this volume) offers a helpful summary of this approach and points out the dearth of research on "exposure diversity". His chapter explores the viewing habits of TV audiences in a multi-channel environment. In a similar vein, this chapter looks at the actual online actions of Internet users to shed light on whether the promises of the Internet for content diversity are realized when it comes to average users' utilization of the medium.

To explore this question I look at the options for and processes of finding information about local cultural events online. The availability of local content is of particular interest for discussions about media diversity as local content can easily be the first to disappear when national media buy up ownership of local media outlets. It is cheaper to syndicate a centrally created program than to run local versions across numerous outlets. However, this may be to the detriment of local information. Can the Web act as an alternative source of information about local events?

I use several methodologies to investigate what options are most realistically accessible to Internet users when it comes to locating information about local cultural events. In the next section, I describe the methods used in the study on which I base the findings in this chapter. Then I look at how content about local cultural events is presented on the most popular Web sites, portals or "point-of-entry" sites. Next, I discuss findings from a study in which I conducted in-person observations of one hundred randomly sampled adult Internet users' online experiences. Results suggest that the factors traditionally responsible for how people are able to access information about movies and other local cultural events are very much mirrored online.

Studying People's Online Information-Seeking Behavior

The findings in this chapter are based on an in-depth study of one hundred adult Internet users' online information-seeking behavior. In this section I briefly describe the methods of data collection and analysis. For more details about the methodology including sampling procedure, recruitment, the interview protocol, particulars about the in-person observations and description of the coding and classification scheme , please see Hargittai (2002; 2004).

To gain a thorough understanding of people's online information-seeking behavior, I collected data through in-person observations and interviews with randomly selected adult Internet users between the summers of 2001 and 2002 in a New Jersey county. The response rate for participation was 54 percent, considerably high given that respondents were asked to come to a university location, traveled up to half hour each way to the study location and spent on average an hour and a half with the researcher. Study subjects reported information about their Web and other media uses on a questionnaire and also supplied basic demographic statistics.

The main component of the study session involved sitting at a computer and looking for various types of material online. Respondents chose the computer platform and browsing software of their preference. They were then asked to find information ranging from local cultural events to tax forms, information about political candidates, health material and other content. The questions were presented in sequence one at a time and subjects were given unlimited amounts of time to work on each task. The participants were not offered any advice on how to look for content; they had to rely on their existing know-how and experiences. They started out with a blank homepage and it was up to them to find their way to a search engine or any other Web site on which they proceeded to find the requested material. For example, a user may have gone to a search engine and typed in a query to find information. Alternatively, others went directly to a Web site about which they had previous knowledge. A third popular option was to click on links on portal sites and follow the Web site recommendations on the proceeding pages.

Respondents represent a diverse group of Internet users ranging from salespeople to administrative assistants, students to teachers, military personnel, architects and retired people. They range in age from 18-81, half are female (51 percent), the median level of

education is a college degree. Table 1 presents specifics about the demographic background of sample respondents. Regarding their Internet experiences, most participants can be considered veterans as the median number of years people had been using the medium is six years. Nonetheless, the sample also includes some novice users with 13 percent having gone online two years within the time the study took place. Subjects differ considerably in the amount of time they spend surfing the Web weekly. While some respondents only go online for a few minutes daily others are constantly connected with up to 30 hours of Web use each week. Such diversity among study participants allows us to gain an idea of average users' online experiences instead of limiting findings to a very particular online population. Moreover, we are able to explore the relationship between users' demographic characteristics experiences, and people's online abilities.

To understand what types of information sources adult Internet users are most likely to consult on the Web, I analyzed participants' online actions. I developed a coding scheme for classifying each move a user can make to go from one Web page to the next. Hargittai (2004) describes this method in detail. The resulting summary documents of people's online actions include every move participants made with information about the Web sites they visited, how they got there and how much time they spent on each page. These data allow us to aggregate information about the types of Web sites people visit during their online sessions and how they seek various types of material on the Web. I draw on this nuanced coding of the data to explore below how users look for information about local cultural events online.

In addition to the data described above – demographics, user experience and online actions – I also aggregated information about how much time people spent looking for content and whether they were able to complete tasks successfully. I coded the sessions for

completion rate of each task and amount of time spent on each query measured in seconds. These measures reflect people's online abilities and comprise the dependent variable in the analyses below. Before presenting the results of the statistical analyses, in the next section I discuss how information about cultural events is organized online.

The Availability of Cultural Event Information Online

Information about movies is quite easily accessible on the Web. Several portal sites have movie links directly on their homepage. (By "portal sites" I refer to point-of-entry sites such as Yahoo! or MSN that are often set as default browser pages by Internet service providers and constitute the first page users see when they go online.) In contrast, information about other types of entertainment is much less prominent on the welcome pages of such aggregator sites.

Consider, for example, the layout of categories on Yahoo's homepage as shown in Figure 1. While there is a "Movies" link right on the homepage, there is no equivalent direct link for those seeking information about theatres or orchestra performances. (The illustrations shown in this chapter are from the time of the study, 2001-2002, to reflect what study respondents saw when they participated in the study. Yahoo's Web site directory today, in 2005, also prominently displays a "Movies" category right on the homepage while continuing to have no direct link called "Theatre".) If a user is looking for movie information, she is given the link quite prominently on the homepage. This is the case on other portals used by study respondents as well (e.g. `att.net` or `excite.com`). In contrast, those looking for theatre information on Yahoo's homepage would have to know that it is located under the directory heading "Arts & Humanities". Moreover, it is not enough to click on that link to access the Theatre category. It takes one more click on the link "Performing Arts" to finally see a link labeled "Theatre".

On one of New Jersey's regional portals, www.nj.com, the "Movies" and "Theatre" link were featured at the same level at the time of the research project. This site was popular with several participants of the study; nine of them used it for finding various types of content. On nj.com, both "Movies" and "Theatre" links were prominently visible when one clicked on the Entertainment link on the homepage (see Figure 2 for details). However, once a user clicked on the "Movies" link she was taken directly to a search engine for movie listings (see Figure 3 for a copy of what the user saw on the resulting Web page). In contrast, if she clicked on the "Theatre" link she had to guess the next step, because there was no obvious schedule information on the resulting page. If she guessed "right" (picked the second link shown on Figure 4) then she was finally on a page where she could look for theatre performance schedules (see Figure 5 for the resulting page).

It is curious that nj.com had decided to make it so difficult to get to this page when, in fact, the directory structure of their site as per the page's URL suggests that it was quite high in the directory hierarchy (http://www.nj.com/njtheatre). That is, the fact that "njtheatre" is immediately after the domain name "www.nj.com" signals that the theatre directory is a top directory on the nj.com site similarly to the movie directory. Again, these images are copies of what users saw in the study in 2001.

A look at nj.com in 2005 shows similar organization of content although a link to theatre schedule information is no longer available anywhere on the Web site making that material even harder to access. The heading "Movies" and "Theatre" are still accessible at the same level. However, it is no longer possible to find a page – no matter how far down one tries to drill in the site – that gives the user the option of searching for theatre show times in the area. The one seemingly relevant link is specified as an advertisement and links to a page with show times for Broadway musicals. A user may be lead to believe that there

are no theatre performances available in Central New Jersey. This is an incorrect assumption since such award-winning theatres as the McCarter Theatre in Princeton put on performances regularly. Moreover, McCarter Theatre and other local arts establishments have Web sites of their own publicizing their events. However, without a central searchable repository they are harder to reach than sites of large venues whose performances are aggregated in large data bases.

Another hurdle to finding certain types of content online concerns one's geographical location. Some Web services offer information about events by localities but only aggregate content for metropolitan areas. For example, America Online offers localized listings but only for certain metro areas. On the main welcome screen of AOL's interface under the heading "My Places" the user has the option of clicking on the link "Local News". (see Figure 6.). The destination page (replicated in Figure 7) shows the list of possible Local News locations. If a user is looking for information about Central New Jersey then he or she must choose from among New York, North Jersey or Philadelphia (indicated on the figure with circles). There is, however, no local events page for Central Jersey.

Although the organization of movie content and information about other cultural events may simply mirror the organization of these cultural industries in the offline world, it is important to recognize that content organization and presentation on the Web for the most part mirrors existing industrial organization instead of offering alternative avenues for reaching audiences and allowing them to find detailed local content. Theoretically, there is no reason why a large online database about all national theatrical or symphony performances cannot exist and offer a one-stop access to such information. However, there is no such service and finding information about such cultural events is just as disparate in the online landscape as it is through more traditional methods.

Even if a user knows what steps to take on the portal sites described above, he or she is not presented with a national database of theatre information in the end. Unlike movie schedules that are aggregated nationally, other types of performances are harder to find online. Users looking for jazz or orchestra performances are also left without a central data base to offer information. In the next section, I present the results of an empirical study testing whether the above described differences in how cultural event information is organized online influences people's ability to find local event information.

Accessing Cultural Event Information Online

The above description of how cultural content is organized online suggests that movie information may be easier to access than other performances due to its more centralized system. Thanks to the research project described earlier regarding users' online information-seeking behavior it is possible to test this hypothesis empirically. In one of the tasks, respondents were asked to look for information about local cultural events, in particular, the schedule for a movie or theatre performance. It was up to participants to decide whether they would look for a movie listing or another type of cultural event such as theatre and orchestra performances, symphony or jazz concerts. These specifics were not imposed on subjects in order to explore a task reflective of their own interests.

On the aggregate, eighty-five percent of the one hundred respondentsin the study k were able to complete this task successfully. On average, they spent a little more than two minutes on the task. Those who were successful averaged less than two minutes, with the unsuccessful searchers spending over four minutes on this task on average. According to the survey participants filled out about their earlier Web-use experiences, 61 percent had looked at a movie or TV Web site in the previous thirty days and 64 percent had looked at a

Web site for music or concert information so the task was not completely foreign to the majority of users.

Were participants in the sample who looked for movie listings more successful in their quest to find relevant information than those who looked for other types of local cultural events? Results suggest that nine percent of those who looked for movies were unable to find it while 33 percent of those who looked for other types of material were unsuccessful. It seems that indeed, movie information is easier to find online.

More refined analyses are necessary in order to draw a link between content organization and accessibility of content to users. It may be that certain types of people are more likely to look for movies than others and those may be the people who are better at searching for online material in the first place. It is indeed the case that older people were less likely to search for movie listings. We know from research exploring age differences among Internet users that older adults spend less time online (Loges & Jung, 2001) and are less likely to find various types of material (Hargittai, 2003). Other demographic characteristics and previous experience with this particular task may also influence people's success with this task so it is important to account for them when analyzing predictors of task completion.

To test whether it is really the case that movies are easier to find online than other types of local entertainment, I turn to statistical analyses of the data I collected in my study about how users find information regarding local cultural events. I ran a discrete-time logit on hazard for completion of the task (Allison, 1985). I created a person-record file using ten-second intervals. This new data set allows us to take into account how long people took to complete tasks in addition to information about whether they were successful in finding the requested information. The following is the model specification:

$$\text{Log } (p/1\text{-}p) = \beta_0 + \beta_1 \log(t) + \Sigma\beta_j x_j + \varepsilon$$

I use an approximation of Weibull hazard (logged time indicated as log(t) in the model) because theoretically it makes the most sense to assume that there is a log-linear increase in the hazard across time for completing a task (whether that be successful completion or giving up on a task). The model predicts the likelihood of having completed the task in any one time interval.

The model includes information about user demographics, presence of children in the household, quality of equipment, social support networks, autonomy of use and experience using the Web. There is also a variable controlling for recent experience with this particular task ("looked at movie site"). Additionally, I added a variable signaling whether the respondent had looked for movie time listings as compared to details about other local cultural events. There are two additional dummy variables. They indicate whether the respondent's first move when working on this task was to go directly to a movie site or a theatre site. Also, to account for any system-wide changes in the Web during the course of the study, I include a control variable for the amount of time – measured in days – that had elapsed since the first respondent's study session.

The findings presented in Table 2 suggest that controlling for individual characteristics, the conditions of one's use and experience with the task; those who looked for movie listings in response to this task were statistically significantly more likely to complete the task successfully in any one time interval than those who looked for other types of local cultural events. In short, users do a better job in finding movie schedules online than other types of cultural event information. Moreover, those who typed in the URL of a movie site also had a higher rate of completion. In this analysis, I also controlled for having typed in the URL of a theatre. This variable, however, does not show any

relationship with ability to complete this task. The reason for this may be that theatre sites are not always as user-friendly and scheduling information is not as readily available, as on the aggregated movie sites.

Is it generally the case that the traditional outlets are the first point-of-entry for users seeking content online? More than with most other tasks administered in the study, many respondents' first reaction was to look for this type of information in traditional media sources such as the online version of their local paper. Among those who looked for movie information in response to seeking local cultural events, 16 percent of respondents used moviefone.com, ten turned to AMC Theatre's Web site, and seven went to Hollywood.com. That means that over a third of all respondents or 43 percent of those looking for movies went to a large commercial aggregator site. A surprising number of people looked for such information using local sources. Nine percent of users went to the New Jersey portal nj.com, five tried to access the information through the Princeton Packet's online presence and some tried using a local university's homepage.

For another task, users were asked to look for music they could listen to online. In this case, the majority of users went to the Web site of their preferred radio station (28 percent), a music portal (18 percent), searched on a sales site such as Amazon.com (14 percent) for samples or consulted AOL's music channel (12 percent). Only three among the one hundred respondents went to the Web site of an artist directly. This suggests that there may be little room for unknown bands to find new audiences as people go to established sources (known radio stations) or large retailers (e.g. Amazon) to search for material.

Conclusion

While the Internet is undoubtedly a medium like no other regarding the amount of diverse content it makes available to users, sources closely tied to traditional media and

organization of content remain the most easily accessible even in this new environment. In particular, local content that is hard to aggregate into national data bases seems to be considerably less within the reach of users than content that is packaged for widespread consumption. The observations presented based on average Internet users' online experiences suggests that mere presence of content diversity online does not guarantee its ease of accessibility.

One possible explanation for how users access content online given the vast amounts of resources is to assume that they gravitate toward their preferences. Given the myriad of information sources online, we may expect that users choose whatever they deem most relevant. If this is the case then users are simply exercising their choice by going to sites that mirror traditional media. However, it would be wrong to assume that the content users access is necessarily a reflection of their preferences. Several factors such as online content organization and user skill are at work when users browse material on the Web and these influence what content people are more or less likely to access.

The most popular portal sites represent enormous media companies (Manjoo, 2003). Although it is not necessarily the case that they are all owned or affiliated with big traditional media companies, they are certainly parts of significant ventures. The amount of advertising and resources that go into these services allows them to far surpass what a small unaffiliated Web site can achieve in popularity and exposure. Another factor that influences what types of content users reach concerns their online abilities. Users differ considerably in how well they are able to navigate online materials. Those who are more skilled will be more likely to find the types of content of direct relevance to their interests. However, others will be more dependent upon the information presented on easily accessible sites such as big portals.

Overall, it would be wrong to assume that the mere presence of diverse material on the Web will result in users accessing a smorgasbord of content. As presented in this chapter, an interplay of many factors determines what information is most realistically within the reach of users. It is important to draw a distinction between available and accessible content online. When we assess the state of online content diversity we must rely on data about users' actual behavior in addition to considering what content exists on the Web. As shown in this chapter, Internet use can reflect offline content utilization regardless of what is theoretically available to users.

Table 1. Descrtiptive statistics about sample participants

	Mean	St. dev.	Median	Minimum	Maximum
Age	42.96	15.86	42	18	81
Education[a]	16.21	2.72	College	Less than high school	Ph.D.
Family income[b]	$98,394	$57,452	$80-89,000	$17,500-19,000	>$250,000
Number of years since first use of the Internet	6.28	3.38	6	0	16
Number of hours browsing the Web weekly	8.62	9.39	7	8 minutes	70 hours

Figure 1. Yahoo's directory categories containing movie and theatre information, 2001 (time of study). (Arrow and circle added to point out relevant sections of the image.)

Figure 2. The entertainment category links on local Web portal nj.com.

Figure 3. Nj.com's Movie search page (2001).

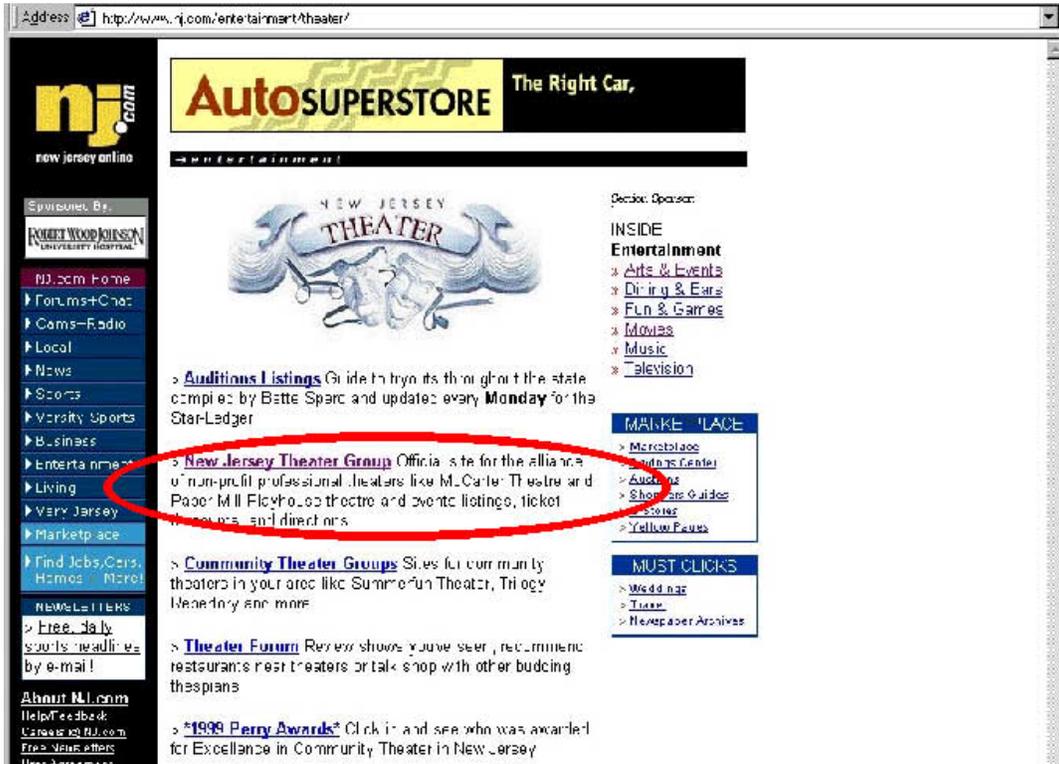**Figure 4. The page that comes up after a user clicks on Theater on nj.com's homepage (2001). Circle added for emphasis.**

Figure 5. Nj.com's Theatre page (2001) white circle signaling the "Theatre Schedules" link. Circle added for emphasis.
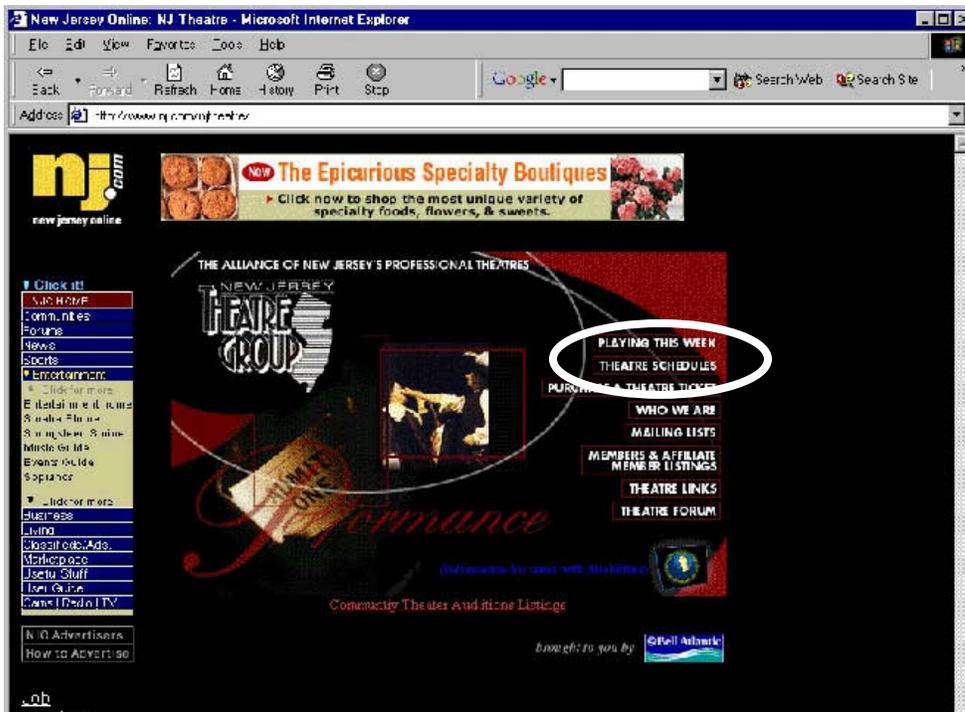
Figure 6. AOL's welcome screen with the "Local News" link designated by the red circle (added for emphasis).
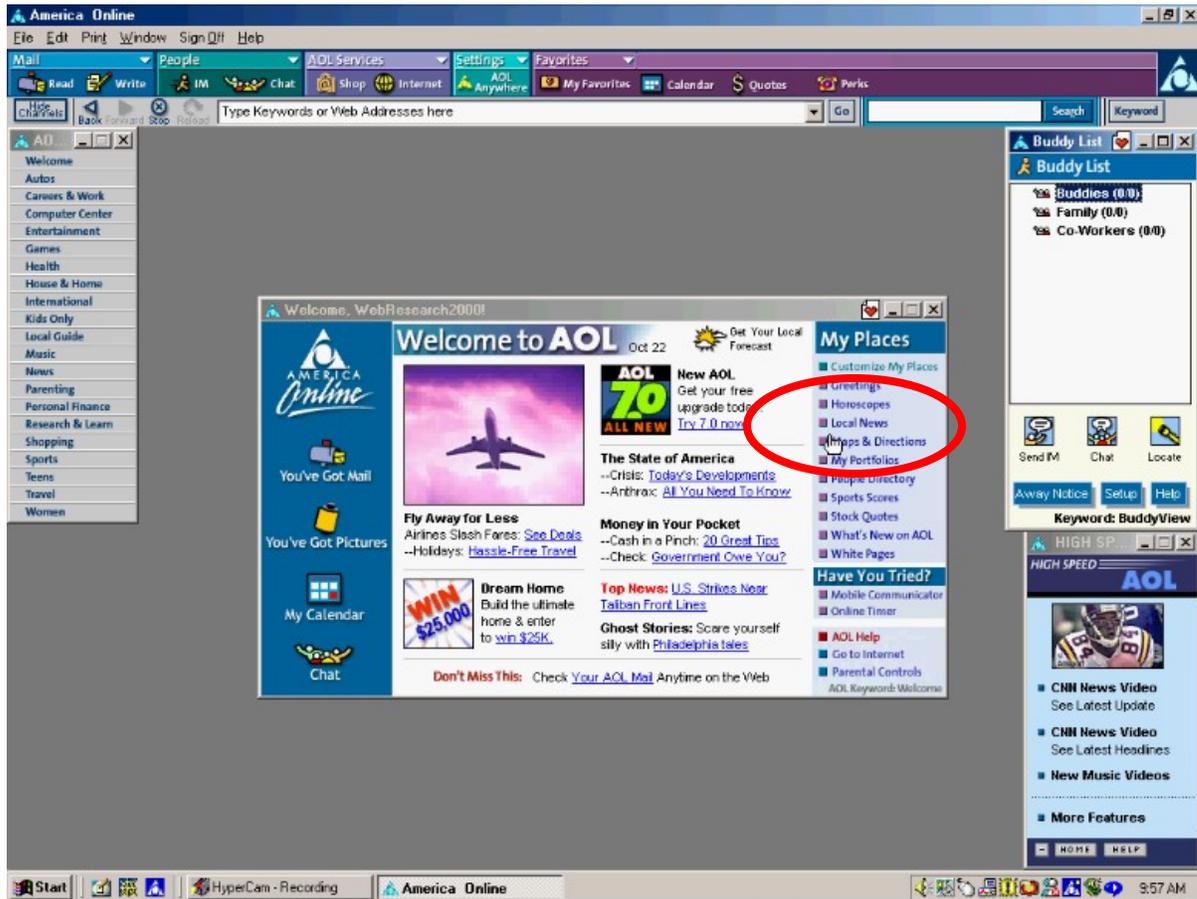
Figure 7. AOL Local News options (circles and errors added for emphasis).
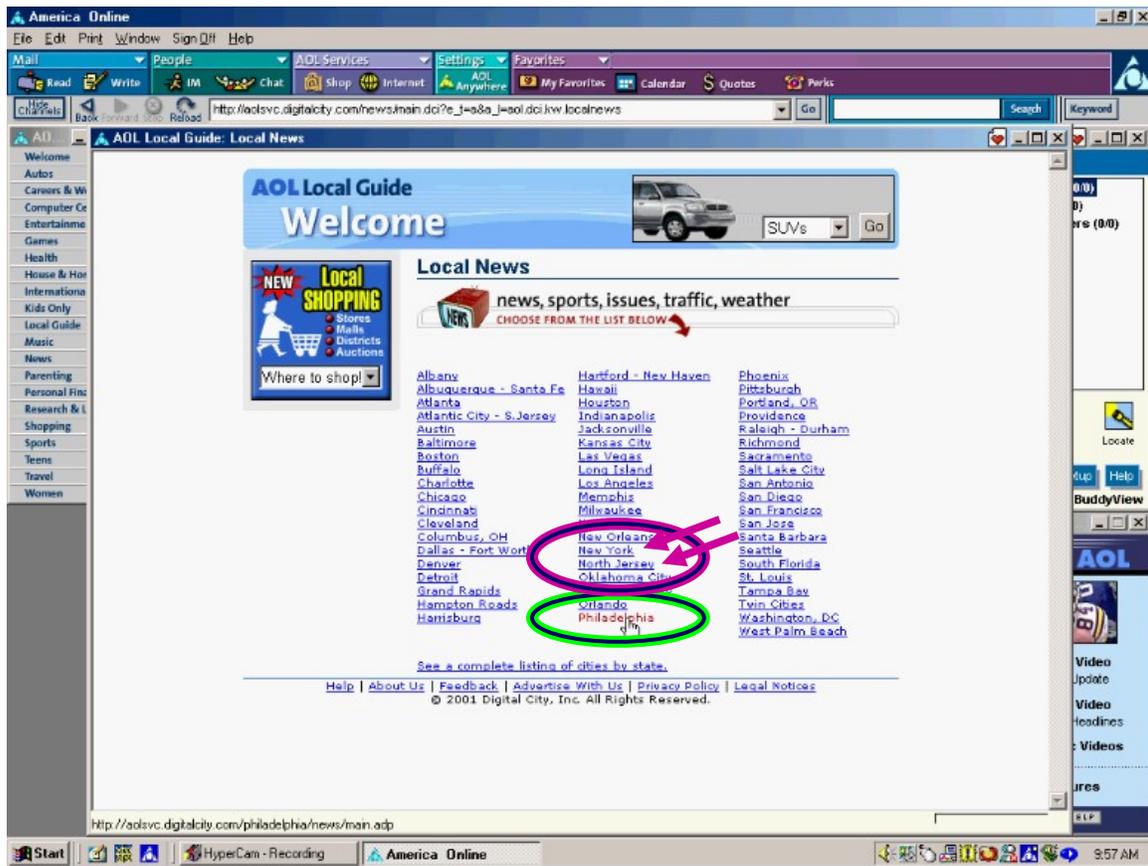
Table 2. Discrete-time logit predicting hazard for completion of task for finding information about local cultural events (standard errors in parentheses).

Female	**-0.809****	(0.254)
Age	**-0.035***	(0.014)
Education	0.079	(0.047)
Black	-0.714	(0.429)
Family income	0.115	(0.213)
Child in household	-0.330	(0.314)
High speed	-0.029	(0.332)
Social support	0.042	(0.023)
Net advice	**-0.174***	(0.068)
Free Net use @ work	0.473	(0.266)
# Access locations	**1.125****	(0.383)
Time on Web/week	0.088	(0.201)
Use years	0.203	(0.337)
Looked at movie site	0.242	(0.360)
Movies for task	**0.924***	(0.433)
Direct movie site URL	**0.744***	(0.301)
Direct theatre site URL	0.942	(0.750)
Time into study	0.004*	(0.002)
Weibull Hazard	0.834***	(0.184)
Intercept	-9.390***	(2.840)
N	1,405	
Wald chi2	86.782	

*** $p<0.001$; ** $p<0.01$; * $p<0.05$; two tailed

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