
Television on the Internet: New Practices, New Viewers

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Abstract

Television is increasingly viewed through computers in the form of downloaded or steamed content, yet computer based television consumption has received little attention in HCI. In this paper we describe a study of the uses and practices of tech-savvy college students, studying their television consumption through the internet. We find that users personalize their viewing but that TV is still a richly social experience - not as communal watching, but instead through communication around television programs. We explore new possibilities for technology-based interaction around television.

Keywords

Television, internet, user study, computer-mediated communication

ACM Classification Keywords

H5.1. [Information interfaces and presentation (e.g., HCI)]: Multimedia Information Systems --- Video.

Introduction

With CHI's recent interest in computing for leisure, such as games and play [2; 13; 15], it is interesting that one leisure technology has been virtually ignored. Television is perhaps still viewed as a lean-back

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medium confined to its own platform and therefore irrelevant to CHI. However, during the last decade television has evolved from being consumed mainly in real-time on a television screen to now frequently being watched as downloaded or steamed content on a computer. Television consumption practices are therefore increasingly relevant to CHI. The area of HCI has mainly focused on either interfaces for interactive television [5] or issues such as users' communication *about* streamed or downloaded television content [9; 11]. Few user studies have looked at viewers' actual practices and how people access and watch television content through web-based and other computer based sources (with few exceptions such as [4]). Not only do these recent changes in content access and viewing have major consequences for many television market players (television stations, television and film producers and cable/satellite providers), but these changes also have implications for human-computer interaction such as interaction with the computer from afar, for example with a remote and the integration of lean-forward with lean-back applications.

In order to explore present uses and practices, we probed a particularly tech-savvy user group who has adapted their practices to the increasing Internet accessibility of television content. These users tend to be early adopters of successful technology, and as such serve as predictors of future habits of the broader population. After initial inquiring we found that many US college students decreasingly watch television in the 'traditional' way, on a television set, real-time; instead they piece together content to fit their own schedules and social life, watching television on whatever screen is available and convenient at that time. So although our group is not representative of the broader

population of young people in the US, we chose to study this group due to their nature as early adopters and their possession of state-of-the-art technology.

This paper describes our interview study of thirteen participants, focusing on their practices around television watching through computing technologies. We present major findings in terms of motivations for watching in a particular way, social issues around content viewing and how the participants assemble their own 'television channel' by selecting (more or less thoughtfully) content from both the internet and from 'traditional' television. The goal is to provide CHI (and possibly the broader area of HCI) with better insights into some of the changes in users' media consumption that the internet has and will produce. Research needs to address these changes in order for us to understand how adapted practices will rely on not only availability of technology and content, but also on users' own ingenuity and lack of awareness of previous conventions.

Related Literature

Television and the internet have often been compared and contrasted. In the WWW's early days it was not uncommon to predict that in the future we would surf the internet on our television set (in particular for the so-called 'T-Commerce' [21]) because it was already a fully adopted technology and people were more familiar with television than with a computer [8; 17]. Due to issues such as limited bandwidth availability and a dearth of services (YouTube went online in 2005 and file sharing of video files was not attainable before early 2000s with Napster) it was not feasible to watch live streaming television on a computer until very recently (see [1] for detailed issues of bandwidth for video

streaming in 1996). Before this, the internet and television was viewed as distinct media; for example, in 2000 Ferguson and Perse compared the use of internet with television watching. They found that they were alternatives in respect to relaxing and diversion, but that the WWW was not as relaxing to use as television [6].

It has been pointed out that television is increasingly being watched 'time shifted' through means such as TiVo's, DVD recorders and now the internet [4]. When scholars discussed technologies for video-on-demand or 'Internet Television' less than a decade ago, they disagreed fiercely on both format and on likely practices regarding watching television in such manner. In 2004 for example, Noll described the PC and the television as two unresolvably distinct technologies: "Most consumers do not care about convergence. The TV set is used in a passive manner to watch television and view videos. The personal computer is used to access and send email and to obtain information from various websites" [16]. Others were foreseeing about emigration from television to the internet and one pioneering service, iCraveTV, had already streamed Canadian television to their website in 1999, providing the first television service over the internet [12].

Other Platforms

Today it is possible to watch television content through numerous platforms and services. Apart from the television-based services such as TiVo and Sky+, many channels have started offering episodes of their programs online for everyone to watch (though most carry geographical restrictions). The integrating commercial service of Hulu (www.hulu.com) were just released four months previous to our study, enabling

users to access a great number of older and new television from one site, however, not all participants were aware of this service yet. Another method for viewing television content on a computer is via the TV tuner, often connected through the USB port and with a small antenna to place on top of the screen. With the appropriate software, the computer functions as a normal television. One of our participants watched almost all of his television this way.

Other researchers have explored the idea of mobile television, that is, television streamed or stored on mobile phones, mobile game platforms or PDA. Some have looked at technical aspects [18] but others, more relevant to HCI, have explored user issues, such as how mobile television is used in everyday life [23].

Television Viewing

A great deal of research has examined television viewing since the birth of broadcasting in the late 1930s and 40s (in the UK, the BBC started broadcasting in 1936, however, with a five year break during World War II). Notable is the 'uses and gratifications' model of the 1970s that points out how television audience take active part in their own media consumption to obtain specific gratifications [3]. Gauntlett and Hill provided a longitudinal account of television-watching habits and social interaction around the television. Their study illustrates clearly the emergence of the video cassette recorder (VCR) and its slow but steady change of television habits among the UK population [7]. Nonetheless, they conclude that in

1996, when the study finished, the main method of watching television was still 'live'¹.

Taylor and Harper found that television viewing comprised patterns of viewing behavior adjusted to their participants' lifestyle. The television was used to unwind and relax or as a form of distraction when doing other tasks (e.g. ironing) [22]. Their participants' viewing habits were found to be highly structured in terms of time and place, which is curious considering the findings we report of here, where the internet has taken center stage as the medium for watching television.

SOCIAL WATCHING

One of the recent factors pointed out by researchers is the way in which television has become increasingly less social owing to new technologies such TiVos and the general increase in number of television sets in the home (e.g. [11; 20]). Where families previously had a television in the common area (typically the living room) and most often watched the same content together, television can now be tailored and consumed individually in one's own space and on one's own time. Earlier scholars, for example, looked at how families used television socially [14], where now, ideas have been proposed to promote shared television experiences using computing technologies [9; 11]. Numerous interesting aspects of communal viewing

¹ When referring to 'live television' in this paper it means watching television directly from the broadcast material as opposed to television recorded on a VCR or a digital video recorder. The traditional meaning of 'live tv' referring to television broadcast and consumed concurrently will not be used here.

practices emerge with the increasing possibilities for viewing platforms and content access.

So apart from a few some researchers' predictions regarding television's move (or partial migration) to the internet [1; 12], most previous literature and studies still distinguish clearly between the internet and television. One telling example of how television watching over the internet is being ignored can be seen in a series of recent home technology use reports from Pew Internet (2008). None of the four reports discuss the possibility, despite providing a thorough set of findings relating to internet use and television watching. One question for example asks whether 'the internet has decreased the amount of time they spend watching television', where 25% agree. Imagine one of our participants attempting to answer this question and it should be clear how the study is biased [19].

In our present study we are therefore attempting to fill a gap in the research of the internet as the new television content provider. While television has previously been deemed irrelevant as a computing medium, it is now 'invading' our research space at a rapid pace. The aim is to explore this new aspect of computer use and to provide insights into new issues of technology interaction.

Method

Our study was exploring the detailed television consumption behavior of a set of highly tech-savvy individuals. We focused on college students owing to their high level of technology use, their technology possession and their busy lifestyles. Another factor in our choice of this population was the fact that these participants were likely to be highly social and to have

greater opportunities to socialize around television and movie media than, for example, families or the elderly. All were recruited through personal contact or flyers around campus with the criteria that they watched or had tried to watch television or movies over the internet. We conducted hour-long, semi-structured interviews either in the participant's home or in a common area (e.g dormitory); they were digitally recorded and transcribed shortly after by the interviewer.

Participants

We recruited thirteen participants who all had a young adult lifestyle; they were students, living partly with roommates and partly with parents. Only one lived with his partner 'full time'. They all resided in Southern California and were between 19 and 23 years. Six were male and seven were female and all had a personal computer with high-speed internet access at home. For comparison we interviewed two people with 'adult' lifestyles, both in their 30s, who had a similar level of access to the internet (high-speed internet access at home and at least one computer), and who had knowledge of the opportunity to watch television over the internet.

Analysis

By using elements from grounded theory, we categorized participants' activities and practices in terms of television watching, both through real television and through the internet (real-time streamed or downloaded). We looked at the nature of the participants' media consumption and how they distributed this between different platforms and different methods of acquisition. Before providing

detailed analysis and descriptions, the participants' general practices and habits are detailed.

General Television Practices and Habits

The participants reported watching between half an hour and twenty hours of television in total, over the internet or on a regular television set, per week. Their habits differed according to the time of year; for those who described a difference in viewing time between the school year (September to June) and the summer time (July to August), the number of hours during the summer were nearly double the number of hours during the school year, most often due to increased school-related activities.

All of participants had one or more television sets both at home with their parents and most had television sets at their school residence. Most commonly one television set was located in the living room and five of the participants also had a television set in their bedroom. Most of them would also occasionally watch television in public areas of the dormitories or at friends' houses.

When considering television watching through the computer, either downloaded or streaming, the participants watched between less than an hour and thirteen hours per week on average. Four did not watch television over the internet regularly but did so only on a case-by-case basis. They would watch missed episodes of a show or in one case catch up on a particular series that their friends had started watching regularly. The remaining nine watched between two thirds and all of their television as either streamed or downloaded content. In terms of specifically downloading television to watch later, four of the six male participants and one of the seven female

participants would occasionally download shows and then watch content later. One participant argued that the quality of a downloaded video is higher and others said that this was in some cases the only way they could get a hold of particular material. It was also preferred because it was easier to freely move through the media by rewinding, pausing and fast-forwarding. They used news groups or Torrents, a peer-to-peer sharing program.

Results

We now continue to describe the detailed results of our analysis. The results are structured into three parts, describing participants' perception of television, looking closer into practices and motivations for viewing streamed content on a computer and finally, exploring participants' communal viewing habits.

The Concept of Television

The understanding of television as a real-time medium, confined to a specific device, was not the perception of our participants. This recent change indicates that the notion of television content is increasingly blurred. It was unclear to the participants what material qualifies as television; some times they did not immediately consider clips from television viewed for example on YouTube as actual television, despite this being the original source. Others were more inclusive in their replies to where they watched television. One male participant stated: "One of my favorite TV programs is 'Friends'. I do watch that on YouTube too if I just want a funny scene right there", emphasizing that as long as the material originated from television, it was considered such. However, television mainly seemed to encompass content that was watched in its full length (not necessarily in one sitting however) but it was

apparent that our participants had not given much thought to the exact (new) definition of television before the interview. Their focus was on the content material, and most referred to 'shows', 'episodes' and to a certain extent 'movies' watched on computers as television.

TRADITIONAL TELEVISION

In order to understand the participants' view of television we asked about their perception and use of traditional television, that is content viewed on a television set from cable, satellite or aerial antenna.

With traditional television consumption we witnessed a sense of powerlessness or care-freeness in terms of content. The primary use of a television set was not necessarily controlled by the participants themselves, which was also affected by only five of them actually having a television in their bedroom. One participant for example answered to why she was watching a specific news program: "because my brother left the TV on" (female, 23). Another participant was describing her television viewing in terms of a social situation: "I just saw this movie [...] it was on TV and we were all watching it" (female, 19). The participants who more specifically determined what to watch on the television set either had a favorite program that was not available online or enjoyed live sports events. One participant for example was an avid swimmer in high school and therefore followed the Olympic trials at the time of the interviews (female, 19).

Although the participants initially perceived television as the content they watched on their TV set, many re-conceptualized this during the interview. Traditional TV constituted the random content and social setting but

preferred selections of content was accessed through the internet.

Watching Television Shows over the Internet

The most common type of material that the participants watched over the internet was episodes of television series. Three female participants watched their favorite show primarily in this way, through the network's own website. They both watched it because the time of broadcast did not suit them: "[The show] is on Sundays at ten, [if] I don't get to watch it around that time [I watch it over the Internet] and I feel more comfortable watching it in bed" (female, 22). Two other participants watched one of their favorite shows ('The Office') solely from the internet (streamed, not downloaded) because they had not followed the regular 'season' on television. One of them explains: "...I kind of caught on to 'the Office' later, so when all my roommates started watching it, I just caught on to it" (Male, 19).

One of the joys of television according to the participants was, as opposed to watching a 'new' episode, to focus on favorite clips. Almost all participants viewed clips of television, either series or news clips online occasionally, for example for entertainment. One participant explains about his favorite comedy 'Friends': "...we have the DVDs but if there are funny moments that I remember, I always check it on YouTube" (male, 20). Other participants would exchange clips with friends, sending links to particularly funny parts over IM or email.

One of the surprising findings was how participants did not necessarily feel the need to keep up with episodes for social purposes. Very few of the participants expressed behavior indicating that they used the

internet to get 'up to speed' with friends' viewing of specific series. In fact television was not time-critical other than for personal gratification.

REMOTE WATCHING

We asked the participants if they had ever watched something 'remotely' with anybody else, if they had been talking either over the phone or online with somebody while watching the same television show. The majority of the participants had tried this (eight out of thirteen). Two exemplified it with talking on the phone, two others said they had IM'ed while watching a show (online or on television) and four of them had texted their friends while watching the same show, in two cases sporting events. In comparison one of the two 'adult' participants remembered the rare occasion of being on the phone with someone while watching television. Although the sample size is small, it does suggest that being 'excited' about content (a show or a sporting event) is quite common among college students and due to the vast availability of communication media, they commonly communicate about television both regarding real-time events and with 'same-time' watching, (such as when links to clips are sent over IM and participants continue the conversation while watching the same clip).

Communal and Social Aspects of Television Viewing

As described in the section about traditional television viewing, the 'old-fashioned' television set was most often considered a tool for social watching. The participants generally expressed joy and pleasure regarding watching television and movies together with others; only one participant said she did not watch television with other people. We found a distinct difference between content and setting for social and

individual watching; the most common type of television that was watched together was movies, mainly watched in the common room with roommates (for nine of the thirteen participants). Four of these participants also watched comedy shows, drama shows and sports shows together with others, mainly as coincidental encounters around the television in the common area (with roommates or in their family home). This illustrates well the college lifestyle and contrasts with the 'adult' interviewees; these primarily watched movies on their television set with their spouse, but they did not perceive television as a social activity, probably because they did not reside in a larger social group.

Participants were generally not watching content over the internet together with others. Apart from one example where three roommates were watching a DVD on one of the participants' laptops, there was a clear distinction between watching from the internet, which was a solo activity, and watching on the television set, which could potentially be a social activity². The nature of socialization around the television was unsurprisingly based on serendipity. Most participants would socialize chiefly with their roommates if they happened to be around, or their family when staying home over the summer. As one participant expressed: "Well, I only really watch TV with my roommates. [...] if they were

² It should be noted that none of the participants had a computer connected to their television, making it impossible watch downloaded or streaming content on the television. This is probably more a characteristic of their dormitory/shared apartment lifestyle where dwellers are not 'settled' and therefore have not spent time and money on elaborate equipment yet, since other research shows that this setup is not that uncommon [4].

watching [a show], maybe I would happen to be watching it too, because it happens to be on".

PLEASURE FROM TELEVISION

Generally participants were positive about television content and their selective watching. They expressed notions of 'escapism' and 'stress-freeness' alongside entertainment and general enjoyment when talking about television. As one participant express: "[...] my life is not really that interesting. I was telling my roommate how it's not fair that all the people on TV get to go on a bunch of adventures and we just have to go to class everyday" (male 19). On the other hand eight of the participants still found television time-wasting to a certain extent or at least conditionally (television was considered a waste of time if there were more pressing things to do or if viewing exceeded a certain amount of time). They clearly recognized that for them, television viewing often indicated procrastination, but they also enjoyed the delay of doing schoolwork. Television was often used as distraction from studying, illustrated by many of the participants who often watched television during the day, for example in between classes.

Conclusion

We set out by asking how the extensive possibilities for television viewing are affecting and influencing early adopters' viewing practices. The practices that we examined offer insights into new challenges and possibilities for technology development and HCI: firstly the challenge of television migrating to 'work' computers, and secondly the possibilities for diverse socialization around television. We discuss each in turn.

We found that users were highly content with accessing selected television on their computer. Television has

changed from being confined to one platform to being part of broader computer use, as facilitator for both content acquisition and replay. The participants had general positive views of television and instead of perceiving it as time-wasting, they found it empowering that they could pick and choose to such a great extent. In the future, it is therefore plausible that the computer will play an even bigger part in terms of entertainment and leisure. It is important not to ignore this new platform for mass media, but instead embrace it as technology designers and consider it an integrated part of computer use. As much as computing technology is used for information retrieval, it is now also used for entertainment retrieval.

Secondly, we found that television was indeed increasingly a solo experience. However, for our participants solo watching was not a negative experience. We witnessed numerous examples of participants watching content and clips for the pure fun of it, indicating that instead of watching 'whatever is on' (which might be the real problem that people like Putnam should be emphasizing [20]), they selectively choose exactly the content they find enjoyable. They still have 'water-cooler conversations' about their experiences, but these have shifted from discussing last night's new episode to be broader discussions about particular programs. This is not necessarily a problematic change; we do not see scholars criticizing book clubs where individuals read a book on their own, then meet up to talk about the story. On the contrary, this is the normal function of such as social construct. One possible consequence, however, is that television content in the future will rely much more on personal recommendation and embedded advertisements, since people will be less likely to simply assume that there

will reliably be material of interest on television Thursdays between 8 and 10 pm.

In terms of human-computer interaction, the most important change in terms of television moving to computers is the increased possibility for social interaction around content. There are numerous ways to support social aspects of television from tagging shows for recommendation to friends to built-in text chat channels. Instead of viewing the computerization of television as a degeneration of the medium, we should as researchers embrace and explore these new methods of socializing around content. Television will continue to be a social medium as long as people are socializing with others.

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