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How is Digital Video Recorder (DVR) Changing the Way We Watch Television

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Abstract: Pioneered by TiVo, the digital video recorder (DVR) is leading a revolution in the television industry. Introduced in 1999, the DVR gives television audience more control than they have ever had, leaving the advertisers scrambling to keep up. The relatively new technology enables television viewers to record their favorite shows and watch them at a later time when it is convenient for them. Often time, commercials are skipped, which pushed Nielsen Media Research, the company that measures television ratings, to reflect this new trend in its surveys. Although only an estimated 10 percent of all American households are equipped with digital video recorders, the percentage is expected to rise to 25 by 2007, according to Nielsen. Started in late December 2005, the company has been providing three numbers – The number of people who watch a show live, the number of people who watch it live or within 24 hours, and the number of people who watch it live or within a week. This gives the advertisers more accurate information on the effectiveness of their advertising dollars. It is surely going to be a factor in the negotiations between advertising agencies and television networks, but its significance remains to be seen. The study will conduct preliminary analysis on the initial numbers of the new Nielsen surveys, and the response from the networks and advertising agencies. It will give insights into the DVR's impact on the future of the television industry.

Keywords: Television, Media Technology, DVR, TV Ratings

Background and Overview

DIGITAL VIDEO RECORDER (DVR) is a device that records video to a hard drive-based digital storage medium. The term includes stand-alone set-top boxes, such as TiVo, and computer software that enables video capture and playback to and from disk. Major cable television providers such as Time Warner Cables also provide the service with their digital cable box. Some of most notable advantages over the traditional VCR (Video Cassette Recorder) include the fact that it provides longer recording time and records without a tape. Users are also given more

flexibility as programming can be done with many options such as recording “first-run only” and recording two programs simultaneously. Most of all, the service is offered at reasonable prices. An 80-hour DVR box by TiVo is at one-time \$69.99 fee with a roughly \$10 monthly subscription, while cable providers generally charge under \$10 for the monthly rental fee with their digital cable service. Since the California-based TiVo introduced the first DVR in 1999, the device has been slowly but steadily gaining popularity. According to Advertising Age, about 10 percent of U.S. households have a DVR, and the number is expected to rise to 35% by 2010 (Atkinson, 2006).

DVR Penetration Counts

Time Period	Households % of Total	Persons 18 to 45 % of Total
May 1-7, 2006	5.5	7.3
July 10-16, 2006	7.2	9.3
Sept 25 – Oct 1, 2006	8.9	11.5

Source: Nielsen Media Research

Devices such as DVR are one of the new gadgets that are changing the way people watch television, along with the recently developed video iPods, video-on-demand, YouTube and video cell phones. Meanwhile, major networks such as ABC, CBS are also streaming their hit shows on their websites with high

quality video and limited commercials if the viewers miss the live broadcast.



Discussions

Starting in December, 2005, Nielsen Media Research has been reporting separate streams of ratings data, including households viewing programs as live broadcast, those playing shows back via DVRs within 24 hours, and those playing the shows back within seven day.

According to the Boston Globe (Associated Press, 2005), Nielsen has, until late 2005, bypassed DVR homes when it signs up the estimated 9,000 families that make up the national sample of homes. These so-called Nielsen families provide the basis for ratings, which make a show a hit or a flop and determine the rates for commercial spots.

The Networks vs. Advertisers

The DVR debate between the networks and advertisers has been focused on the effectiveness of television commercials as some believe that DVR households are encouraged to skip more commercials. This has brought the attention to the advertisers as they began to pressure Nielsen to change the way ratings are reported. The networks want to be paid for viewers who watch live and recorded shows, but now advertisers only pay for viewers who watch the original broadcast (Story, 2006).

MindShare, a media agency, conducted an online survey on the consumers’ primary reason for purchasing a DVR. Among those who already own a DVR, 88 percent said they purchased it because it gives them the ability to record programs and watch them when it is convenient. The study also revealed that as high as 79 percent of respondents said they purchased a DVR because it gives them the ability to skip commercials (Consoli, 2005).

However, network executives said the impact by DVR is exaggerated. Alan Wurtzel, president of research and media development for NBC Universal, wrote in Media Week in May 2006 (Wurtzel, 2006), that “commercial avoidance has been part of the TV business as long as people have felt the need to get off the couch and head to the kitchen.” He added that an analysis of Nielsen ratings shows that the commercial ratings impact from surfing in non-DVR households – who watch only live TV- is actually greater than in DVR homes.

How Quickly Do DVR Users Watch the Recorded Shows?

According to a database released by Nielsen in November 2006, only 52.7 percent of DVR users who watched prime-time shows on CBS tuned in during the live broadcast in the last week of September in 2006. An additional 19.4 percent of viewers watched their recorded CBS shows later that day. About eight percent tuned in one day later and seven percent two days later. Nearly 4.7 percent did so after three days and the rest watched even later (Nielsen Media Research, 2006).

Tom Dorsey, a television columnist writing for the Courier-Journal of Louisville, wrote that some shows gain significant ratings if delay viewing is counted. “The Office” generally picks up a seven to 11 gain in delay viewing, and “House” jumps by 1.4 million viewers when the replays were added.

According to an analysis released by Nielsen in September 2006 on DVR playback viewing, among viewers age 18-49, 76 percent played back broadcast network primetime programs within 48 hours. During the same time, 84 percent watched primetime shows they recorded off basic cable networks (Nielsen Media Research, 2006).

Chart I: The Percentage of Broadcast Primetime Programming Played Back within Two and Three Days

	Same-Day	2-Day	3-Day
Monday	41	75	81
Tuesday	45	75	81
Wednesday	49	70	82
Thursday	45	80	89
Friday	28	68	77
Saturday	73	93	98
Sunday	60	80	87

Source: Nielsen Media Research

Top 10 “Time-shifted” Primetime Television Programs of 2006

Rank	Program	Network	% Increase in Viewership
1	Studio 60	NBC	10.9
2	Heroes	NBC	9.1
3	Gilmore Girls	CW	7.9
4	America’s Next Top Model	CW	7.7
5	30 Rock	NBC	7.5
5	Friday Night Lights	NBC	7.5
7	The Nine	ABC	6.7
7	Supernatural	CW	6.7
9	Kidnapped	NBC	6.6
9	One Tree Hill	CW	6.6
9	Smallville	CW	6.6

Source: Nielsen Media Research

Note: Data from December 26, 2005 to December 17, 2006. Household ratings include Live and Same-Day Time-shifted viewing.

Skipping with DVR

Compared to broadcast networks, cable networks are known for running longer commercial breaks (Steinberg, 2006). Some in the industry predicted that cable operators will be more heavily affected by

the new system. They believe that the average viewership on cable networks will drop drastically during commercial breaks, and the preliminary data presented by Nielsen in a client meeting in November 2006 supports that viewpoint (Erichson & McDonough, 2006).

Percentage of Minutes Viewed by Persons 18-49 in DVR Households during Primetime

Time Period	Broadcast Live	Broadcast Live + 7 Days	Cable Live	Cable Live + 7 Days
May 1- 7	53.2	46.8	83.4	16.6
July 10-16	70.1	29.9	78.4	21.6
Sep 25 – Oct 1	58.6	41.4	82.1	17.9

Source: Nielsen Media Research

Sean Cunningham, President of the Cabletelevision Advertising Bureau, which represents over 100 cable networks, was quoted by Ad Week as saying “There isn’t any reason for any of my members to opt in until all of the fixes are in”. Tim Brooks, Executive Vice President of Research at Lifetime, was quoted in the same article as saying that the commercial ratings need to be tested for a year before the cable industry would feel comfortable using them as currency (Blum & M, 2007).

The College Factor

In response to decades of complaints from television executives, Nielsen has begun to count college students who live away from home in its rating poll in January 2007. According to the New York Times, networks that produce more college-friendly shows are excited about the news, saying it will boost rat-

ings, which means more advertising dollars (Story, 2007).

“It is going to validate what advertisers have always assumed, which is that college students are watching our programming,” said Jeff Lucas, a senior vice president at Comedy Central, as quoted by the New York Times. The network produces hit shows such as “South Park” and “The Daily Show With Jon Stewart”. Both shows are popular among college students.

However, some advertisers question how attentive college students are while watching television as they are usually doing multiple tasks at the same time –doing homework on the computer, listening to music, sending text messages to their friends, and leaving the television on in the background.

But Brad Adgate, senior vice president of research at Horizon Media, told the New York Times that advertisers are still willing to pay more to networks

because of the perceived lifetime value of the college market. "If you can get them using your product at age 20, they could be using it for the next 60 years." (Story, 2007)

However, although the college market is highly valued by advertisers, the limitation of the data is the small sampling. Nielsen contacted the roughly 450 families in its sample who had children in college. About 30 percent of those families agreed to let Nielsen put a meter in the college student's dorm room or off-campus apartment. Some family did not agree simply because their children did not have a television set at school.

But once Nielsen expands the size of its samples, college students living away from home can make a big impact on the ratings. With an average of 24.3 hours of television viewing time per week among college students, the rating could increase anywhere from 3 to 12 percent--almost a full point in some cases once these viewing habits are factored in the company estimates viewing levels for the adult 18-24 demographic (Mahan, 2006).

Nielsen's Plan to Rate Commercial Viewing Postponed

In response to advertisers' demand to provide rating on commercial viewing, Nielsen originally planned to launch commercial ratings in November 2006. The announcement immediately generated heated debate in the television industry on how accurate the numbers would be and whether they should participate. Later Nielsen decided to postpone the plan until December 2006, then again in November the company announced that the first electronic data will be released on May 31, 2007. In a statement released on January 16, the company said, after consulting more than 100 clients, it will offer a new Average Commercial Minute electronic data file that provides an average rating for the commercial minutes in each television program. The file will be made available for six streams of viewing data as the following:

Stream #1	Live viewing
Stream #2	Live viewing plus DVR playback on the same day
Stream #3	Live viewing plus DVR playback in 1 day
Stream #4	Live viewing plus DVR playback in 2 days
Stream #5	Live viewing plus DVR playback in 3 days
Stream #6	Live viewing plus DVR playback in 7 days
Source: Nielsen Media Research	

Despite resistance from some cable networks, Nielsen said all broadcast, cable and syndicated programming will be included in the electronic data file. And for the months of May-August 2007, the ratings will be labeled as "evaluation" data and made available to clients at no charge.

Conclusions

According to Tom Dorsey of the Louisville Courier-Journal, programs recorded on DVR that are watched at another time represent less than 10 percent of the weekly Nielsen ratings, but that could mean the difference between winning and losing, and perhaps boosting advertising revenue (Dorsey, 2006). However, as DVR becomes more popular and the so-called "digital consumers" continue with their multi-platform consuming habit, the impact can be more significant and complex.

According to Susan D. Whiting, President and CEO of Nielsen Media Research, about 30 percent

of all media time is spent with more than one medium, and four out of five television viewers are interacting with other forms of media as they watch television (Whiting, 2006).

In order to meet the needs of both the networks and advertisers, Nielsen will have to change the way it gathers data and reach out to non-traditional mediums. The company announced on February 3, 2007 that it would launch what it calls the "Anytime Anywhere Media Management" initiative, and include components such as new meters to measure video viewed on portable media devices, and measurements of online streaming videos. It will also develop new research for viewing audience engagement in television programming.

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Professor Tung is currently an assistant professor at Kean University in Union, NJ. His areas of research and interest include images of minorities in the media, Asian and Asian-American cinemas, documentary production and journalism. He has written papers in those areas and presented them in academic conferences. At Kean, he teaches Mass Media, Video Production, and International Cinema. Before moving to the United States, Tung was a reporter for the English-language Taiwan News and had covered Taipei City Hall and the Taiwanese Legislature. He is also a contributor for GothamGazette.com, a Columbia Online Journalism Award-winning news website, and has been reporting on the Chinese community in New York City. One of his documentaries, Daughters From China, has been featured in several film festivals, including Vancouver Asian Film Festival, Asian American Film Festival of Dallas, and was aired on Speech TV. He also received the Best Documentary Award in the Honolulu International Festival IN 2005. Tung is also a faculty fellow of the National Association for Television Programming Executives 2007.

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