

Ad skipping and satisfaction among TiVo users by length of ownership

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A national sample of 61 DVR users completed an online survey that measured length of ownership, viewing satisfaction, and attitudes toward DVR functions. When compared to earlier samples totaling 198 users, DVR owners continued to report watching television, live and recorded, with more enjoyment and greater control. Satisfaction remains a significant predictor of ad skipping, but the novelty factor may be mitigating. Length of ownership is associated with a small decline in ad-skipping behavior.

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When Sony introduced the Betamax in 1976, the brand caught on and VCRs changed the way people watch television, particularly with regard to video rental behavior on such low-viewing nights as Friday and Saturday. Being first to market was not an advantage for the longevity of the Betamax brand and now one may wonder if the TiVo digital video recorder (DVR) will follow in the footsteps of Betamax. The big difference with regard to time-shifting is that VCRs never lived up to the threat of ad skipping (Klopfenstein, 1989), leading some to believe that TiVo likewise poses a tiny threat.

But to many, DVRs have become a clear and nearly-present danger to advertising-supported television (Harmon, 2002), primarily because of the relative ease with which programming is routinely time-shifted. Even cable companies like Time-Warner have developed their own DVRs that “skip” the ad-skipping feature (Olsen, 2003). The television networks, too, look for a way to combat ad skipping, by overlapping their schedules to thwart TiVo start-stop times and by embedding serialized mini-movies into their primetime lineups. Meanwhile, the advertising gurus predict the “end of the 30 second commercial.” About the only element lacking is published theoretical research on DVR behavior. So far there have only been a few descriptive proprietary studies and some academic conference papers.

An interesting unanswered question is whether or not there a novelty factor at work with this latest ad-skipping device. Perhaps people change the way they use their DVRs, in the way that VCR users evolved from time-shifting to video rentals, a process known as reinvention (Rogers, 1995; von Hippel, 1986). Early (old) adopters may become less enamored with innovative features than later (new) adopters. Skipping commercials is likely a novelty for

viewers, a propensity that may wear off over time. This study examines length of ownership, taking its cue from a study done on VCRs (Klopfenstein, Spears, & Ferguson, 1991). The utility of diffusion theory is that it helps us understand how innovations evolve. Our first hypothesis, then, is:

H₁: Ad skipping will be negatively linked to length of ownership.

And how is television satisfaction related to ad skipping? The standard measures of viewer satisfaction in previous studies (Perse and Ferguson, 1993, 2000) have been applied to DVRs in later studies (Ferguson and Perse, 2001, 2002). In the latter research, users reported enjoyment with their DVRs and greater avoidance with DVRs than with their VCRs. We expect that satisfaction with DVRs grows over time, similar to VCRs (Klopfenstein, Spears, and Ferguson, 1991). Thus, our second hypothesis is:

H₂: Satisfaction will be positively linked to ad skipping and length of ownership

Perhaps the real significance of studying DVRs now is that many observers expect these standalone devices to quickly evolve into integrated solutions for delivering multichannel services to set-top boxes (STBs). The direct-to-home satellite services already offer the DISHplayer and the DirectTV-TiVo receivers, with cable system operators presently exploring alliances with DVR services. It makes sense for a cable operator to move some of its video-on-demand program content to secure home-based storage, away from centralized disk space. When all 80 million cable and satellite million homes eventually have DVR capability built into their STBs in the not-too-distant future, the changes in viewing/recording behavior studied here will become even more important to the study of television viewing behavior.

Method

The number of homes with standalone DVRs is only about 3 million, more than four years after the introduction of the two dominant brands, TiVo and ReplayTV. The total number of TiVo DVRs finally hit one million only in November 2003, a slower diffusion rate than for satellite radio. Predictions for the future aside, the number of DVR homes remains small.

Thus, a random sample was deemed impractical for obtaining enough participants, as there are still too few owners. Many early studies in refereed journals (e.g., Levy, 1980; Levy, 1981; Levy 1983) and even a few later published studies (e.g., Greenberg & Lin, 1989; Rubin & Rubin, 1989; Sapolsky & Forest, 1989; Shatzer & Lindlof, 1989) used convenience samples to provide benchmarks for VCR behavior. Because this study is exploratory, a similar convenience sample of standalone DVR owners completed an anonymous online survey.

The sample was composed of early and later DVR adopters ($n = 61$) who participate in internet forums at <http://www.avforum.com>. Forum participants were invited to complete the survey during August 2003 for the purposes of academic research. Previous samples had been drawn in October 2000 ($n = 121$) and October 2001 ($n = 77$), but length of ownership was not measured.

Demographics

Respondents were overwhelmingly male (50, with 11 females).¹ Age ranged from 18 to 68 years ($M = 39.1$, $SD = 11.6$). The sample was well educated. The greatest proportion had completed college or some education beyond college (63.9%). These characteristics are consistent with the earlier samples.

Length of Ownership

Respondents were asked to report (in months) how long they had owned their DVRs. The responses ranged from 1 to 48 months ($M = 22.28$, $SD = 12.66$, $n = 60$). The median response was 21, so equally dividing recent adopters from older adopters was accomplished by recoding a new dichotomous variable based on ownership ranging from 1 to 20 months ($n = 29$) and from 21 to 48 months ($n = 31$). Additional groups were also created using one-year divisions borrowed from previous VCR research, with categories for 1-11 months, 12-23 months, 24-35 months, and 36-48 months, with respective cell sizes of 15, 20, 10 and 15 (Klopfenstein, Spears, & Ferguson, 1991).

Ad Skipping

Respondents completed a set of 9-point Likert statements about their use of the various DVR functions. Ad skipping was measured by asking how often (0 = never, 8 = always) they fast-forwarded past commercials. Ad skipping ranged from 4 to 8 ($M = 7.23$, $SD = 1.13$, $n = 60$), indicating that everyone reported at least a moderate desire to skip over advertising.

Respondents also were asked how often they fast-forwarded past unwanted program segments, fast-forwarded past unwanted people, paused live programs, recorded and watched programs scheduled at inconvenient times, used on-screen interactive program guides (IPGs) to select programs to watch, used electronic on-screen schedules (EPGs) to choose programs to record, used the instant-replay button, instructed the DVR which programs they like, and used the slow-motion button.

Television Satisfaction

Several sets of questions focused on the benefits of watching television with the DVR. First, respondents indicated their agreement with the statement "I find watching TV more

enjoyable with my DVR than before I started using one” (0 = disagree, 8 = agree). Respondents also completed three questions about how satisfied they are with television viewing derived from prior research (e.g., Perse & Ferguson, 1993, 2000).² Responses to these three questions were summed to create a television satisfaction score. Television satisfaction ranged from 0.0 to 24.0 ($M = 14.37$, $SD = 4.18$, $\alpha = .83$). DVR enjoyment was a unidimensional item that ranged from 5 to 8 ($M = 7.76$, $SD = 0.57$).

Table 1 About Here

Results

Pearson correlations were computed for ad skipping and length of ownership (see Table 1). A statistically significant negative relationship was found ($r = -.30$, $p < .05$, $n = 60$). Mean levels of ad skipping for early adopters ($M = 7.62$, $SD = 0.68$, $n = 29$) were compared to late adopters ($M = 6.87$, $SD = 1.34$, $n = 31$), a corresponding significant difference was found ($t = 2.77$, $df = 45.1$, $p < .01$). Four group comparisons showed a significant difference in ad skipping ($F = 4.37$, $p < .01$) with Tukey B post-hoc differences between owners with 3 or more years with their DVRs ($M = 6.47$, $SD = 1.56$, $n = 15$) versus those with either fewer than a year ($M = 7.47$, $SD = .83$, $n = 15$) or one to two years ownership ($M = 7.70$, $SD = 0.47$, $n = 20$). The first hypothesis was supported.

The second hypothesis was only partially supported. Ad skipping was related to satisfaction ($r = .28$, $p < .05$) but general satisfaction was unrelated to length of ownership

($r = -.08$, n.s.). Enjoyment of the DVR was unrelated to length of ownership ($r = .21$, $p = .11$).

Feelings of greater control were also not associated with DVR diffusion ($r = .17$, $p = .20$)

Discussion

The dropoff in ad skipping related to length of ownership was statistically significant in a fairly small sample, but the practical significance is not immediately apparent. It is clear that a decline exists, but there is no hard evidence that the decline itself does not level off at a high level of ad skipping that is still unacceptable to advertisers. Nevertheless, it is also possible that the novelty effect continues to weaken DVR owners' interest in ad skipping over additional time. Certainly remote control users, who are now nearly ubiquitous, seem to have lost interest in continually muting the audio portion of commercials. Moreover, channel flipping to avoid commercials has not undermined the advertiser-supported system of television. More research is needed to determine the effect size over time.

Satisfaction was not related to diffusion of DVRs and is better suited to studies of uses and gratifications. Previous work has linked ritualistic and instrumental motivations for DVR use (Ferguson & Perse, 2001; 2002). Given the moderate enjoyment of television in general found in this study, it is interesting that the average DVR owner was greatly enamored with the device.

The DVR owners in this study may not be typical of the population of potential DVR users as a whole. They are probably better educated, make more money, and perhaps might not even be opinion-leaders, although these variables were not measured in this study. Future research should explore DVR owners over time to explore how the demographics, social characteristics, and even attitudes about television change

This study is, of course, limited by the nature of the self-selected samples. Familiarity with web surfing in a sample recruited on the Internet may have biased the amount of reported channel use on television. The mostly-male forum participants likely reflect viewpoints of the

afficionado rather than the causal user. Lindstrom (1989) noted that early adopters of the VCR were heavy TV viewers. He observed, "In general, recording activity follows TV activity, with lighter television usage roughly translating into lighter VCR recording activity" (p. 44).

Sapolsky and Forrest (1989) also note the validity problems with self-reported "avoidance" with VCR zipping. Proprietary data from Nielsen may shed some light on actual behavior.

The ultimate importance of studying DVRs lies in the threat these devices pose to advertisers whose messages have become easier to avoid as viewers learn to manipulate real-time. Prognostications on the future of television advertising in a DVR world have speculated that empowered viewers may see fewer commercials (e.g., Brown, 2000). Recent proprietary studies (e.g., The PVR Monitor) have confirmed the threat. Future research should look at the economic impact of altered viewer behavior. Whether DVRs themselves will remain viable standalone devices or not, we cannot predict. But it is clear that the added functions are here to stay, in some form or another.

Notes

¹We cannot assess if this imbalance reflects a male-dominated ownership and use of DVRs or our method of data collection. Gender differences in use of DVRs should clearly be an area for future research.

²Satisfaction items were: “How valuable did you find your television viewing in the past week,” “How pleasing was your television viewing during the past week,” and “How satisfied were you with your television viewing during the past week.” All items used nine-point response options.

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Table 1

Correlation Matrix of DVR Attributes and Length of Ownership

<i>DVR Attributes</i>	Length of Ownership (Pearson r)	n	Mean	SD	Minimum	Maximum
Ad Skipping	0.30*	60	7.23	1.13	4	8
Segment Skipping	0.23	59	5.90	2.10	0	8
Person Skipping	0.19	55	4.95	2.64	0	8
Pausing Live TV	0.02	60	5.03	2.43	1	8
Timeshifting	0.02	59	7.42	0.70	6	8
IPG Use	0.20	59	5.81	2.11	1	8
EPG Use	0.19	59	5.25	2.56	0	8
Instant-replay	-0.03	58	5.03	2.79	0	8
Learn viewing habits	0.10	57	4.29	2.52	0	8
Slow-motion button	0.16	58	3.07	2.03	0	8
<i>Viewing Attributes</i>						
Satisfaction	-0.08	56	14.37	4.18	0	24
DVR Enjoyment	0.21	59	7.76	0.57	5	8
Feel greater control	0.17	60	7.95	0.22	6	8
* $p < .05$						

December 16, 2011

Jason Chambers
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Dear Dr. Chambers:

Enclosed are five copies of our entry in the research paper competition. It's a brief paper, but that should make the reviewers happy. We are hoping for the opportunity to present it to the Advertising Division of AEJMC.

Thanks. Please let us know if you have any questions.

Sincerely,

Douglas A. Ferguson, Ph.D.
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Elizabeth M. Perse
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