Understanding Secondary Content Practices for Television Viewing

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ABSTRACT

Secondary content experiences related to television viewing have been a frequent topic of study in the TVX community. While many new interfaces have been created and studied in the small scale, we are not aware of any larger quantitative work to study current practices now that many secondary content experiences are publicly available. We conducted a survey with a broad sample of the American population to explore current secondary content use. We report on our findings, including that 80% of these experiences occur before or after viewing the primary content, and not as simultaneous experiences, and that social posting about television content remains quite low, even for one's favorite show. We conclude with implications for the design new secondary content systems based on our findings.

Author Keywords

Television; Second Screen; Survey; Related Content; Mobile Devices.

ACM Classification Keywords

H.5.1 Multimedia Information Systems: Video; H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

INTRODUCTION

The experience that a viewer has with a television program is no longer limited to the 30 or 60 minutes that they spend watching the linear content of the program. Secondary information about television programs is now widely available in the form of Tweets, Facebook posts, Tumblr GIFs, fan forums, official content from show websites, actor bios and episode summaries on sites such as IMDB and Wikipedia, and second screen apps specifically created for shows or networks.

This explosion of online content has the power to transform

a television watching experience – from reading up before the program, through gathering additional information and understanding during the program, to connecting with others during and after the viewing experience.

While the TVX community has been exploring second screen interactions around television content for many years, little is known about what people are actually doing in practice when it comes to supplementary content. Multiple research systems have been built that have provided companion apps on mobile devices [13, 18], parallel feeds of related content [2, 3], social interactions [7, 8], and related sports stats [6] – among many others. These systems were often tested in the field at specific events, or in multi-week field studies. But none is currently deployed at scale in the world.

It remains unclear how these types of experiences have made it into real-world, natural use in the 14 years since TVX started (as EuroITV) and researchers began to create these types of systems. What types of secondary content experiences are people currently engaging with? What types of information are they seeking? When do they seek this information with respect to viewing the program content?

We set out to answer these questions through an online survey aimed at a wide section of the American population. In this survey, we asked participants a variety of questions relating to their secondary content use in order to better quantify the spread of these technologies into the world.

The insights from this analysis helped us to focus new secondary content experiences towards the types of content people want to engage with, on the devices where they want it, and at the appropriate time to not interfere with the program. We offer several implications for design based on our findings.

RELATED WORK

A wide variety of secondary content systems have been created over the years, both in academic settings as well as commercially viable solutions. A variety of studies have mostly explored their use qualitatively, without providing quantitative insights as to the prevalence of use in the broader audience.

Early work in this community explored social television systems [7, 8]. In these systems, users could exchange textual or voice content with each other during a television

broadcast. While in field studies heavy use was observed, these types of systems never made it into the mainstream of readily available technology on set-top boxes or streaming sites.

The types of secondary content around TV programs that did emerge into public use were primarily on social network sites such as Twitter or Facebook. Multiple researchers in the TVX community [15, 16] have studied the use of these social platforms for particular shows or events. However, little academic work has sought to quantify the use of these social platforms for TV-related content more generally. Twitter's own TV page points to MacMillan [11], which shows that while there were 350,000 Tweets in a month relating to Game of Thrones (#GoT), these only maxed out at 18 Tweets per minute during one of the 60-minute episodes, showing that Tweeting during a show was hardly a mass phenomenon. Nielsen's Social Content Ratings [14] shows a similar pattern, with only tens of thousands of users Tweeting for the top TV shows during the week of January 8th, 2017, the most recent week available, for shows with audiences in the millions of viewers.

Other research has focused on timecode-synchronized feeds of related content for television shows. Parallel Feeds [3] provided a stream of content related to events in the show, such as links to related Wikipedia pages or related YouTube videos. Fan Feeds [2] took this further and allowed fans to create their own related content feed for others.

Companion apps, taking this idea of related content to a point of rich navigation, have also been created in research environments for shows such as Justified [13] and Game of Thrones [18]. Television networks have created their own apps for popular shows as well that have been more widely released. Amazon and IMDB partnered to create X-Ray [1], which provides additional content about actors in particular scenes of popular shows and movies. However, to our knowledge the use of these services has not been longitudinally studied in real contexts of use.

Hillman et al. [9] have explored fandom communities on Tumblr and how viewers create their own fan fiction as well as the use of animated GIFs on the platform to express reactions to events in a television program. However, it is not clear from this research how many viewers participate in these activities.

Overall, while many platforms exist today for secondary content interaction, it is not clear how often they are used and when they are used with respect to watching the program content. We set out to answer these questions through a survey deployed to a broad US-based audience.

METHOD
We conducted a survey in June 2016 to explore secondary content interactions. This was towards the end of the TV season, while popular shows such as Game of Thrones were in their final episodes of the season and traditional network television had just gone on its summer break. Therefore asking about interactions that participants had performed in the past month would capture the peak of the TV season as many shows aired their season finales.

The survey was deployed on Amazon Mechanical Turk to an audience of 153 diverse participants aged 19-69. 56% of participants were male and 47% had college degrees (compared to 42% nationally). Income ranged from <$15k to >$150k per year. In earlier work, we have found that these panels accurately represent technology usage behaviors within 7% of larger, professionally-commissioned market research samples and are accurate enough to discover which behaviors are common, prevalent, or rare in the broader American population [4]. Data from similar studies has been presented at TVX in the past [5].

Specific questions from the survey will be discussed below in the Findings. Broadly, we asked about particular secondary content experiences that participants had engaged in within the past month, and at any time in the past for their favorite show. We asked about recent experiences in order to reduce bias in self-reporting, as people are more likely to remember specific recent interactions. In addition to the type of experience, we asked questions around the timing of that interaction with respect to watching the show as well as the devices that they used to access both the primary and secondary content.

FINDINGS
In this section we will explore the specific questions that we asked and the data received from our participants. We will refer heavily to the tables shown on the next page, which summarize the data received. Overall, this data helps to quantify current use of secondary content experiences on a variety of platforms, and thus to understand the opportunities for new content experiences that can be created for mass-market adoption.

Secondary Content Consumption
Table 1 shows the percentage of respondents who have engaged in particular secondary content consumption interactions in the past month. The most popular category of content was "Additional Information about the Show," with 73% of participants looking for this type of information. "Information about Actors" followed closely behind, with 62% of participants looking for this type of information in the past month.

Most interesting to us are the types of interactions that participants were not engaging in. Only 15% were reading celebrity news articles about actors, and only 6% were engaging with fan fiction. Interestingly, if asked to choose between viewing social content from the show's official account (or actor's accounts) versus seeing content from fans, 67% of participants chose the official show content

What additional/related content have you looked at for a TV show you watched in the past month?	
ABOUT THE SHOW	73%
Trailers/Teasers for future episodes	49%
Information related to the episode (summaries, details about a scene)	40%
Behind the Scenes Videos, Actor/Director Interviews	29%
Episode Recap Videos	25%
ACTOR INFO	62%
Actor Bios/Profiles (e.g. IMDB, Wikipedia)	45%
Actor Filmography (Other movies/shows they have been on)	32%
Social Network Posts from Actors/Shows	27%
Celebrity Articles / Gossip about Actors	15%
SOCIAL	50%
What other people are saying about the show (Posts about the show, comments, Tweets, etc.)	50%
FANDOM	43%
GIFs/Memes about the show	41%
Fan Fiction (i.e. stories written by people using characters from the show)	6%

Table 1: Percentage of respondents who have looked for particular types of secondary content in the past month.

Which of the following information sources have you used in the past month to find additional information about a TV show, actor, or character?	
DATA SOURCES	
IMDB	68%
Google/Yahoo/Bing Search	64%
Wikipedia	62%
TOP SOCIAL SOURCES	
Reddit	47%
Facebook	41%
Twitter	32%
OTHER SOCIAL SOURCES	
Instagram	15%
Tumblr	5%
Snapchat	4%

Table 2: Percentage of respondents who turned to particular information sources for secondary content in the past month.

Think about the show you feel most passionately about. Which of these have you done?	
Read content online about the show (reviews, interviews, official social network posts, etc.)	90%
Talked to/messaged a friend about the show.	69%
Posted on social media about the show	42%
Joined an online community about the show	22%
Created content related to the show (GIF, Meme, Review, Fan Fiction)	7%

Table 3: Percentage of respondents who have engaged in secondary content behaviors for the show that they feel most passionately about.

used social sources such as Instagram, Tumblr, and Snapchat were the least frequently used.

With all of the attention in the TVX community about "second screening" – or looking at information related to a show simultaneously to watching a program, we were interested in when people were looking for this information. Consistent with findings from Holz et al. [10], we found that relatively few instances of related content consumption occurred while watching a particular show. When asked to think about the last time that they looked for related television content, only 20% of participants had looked while the show was on. 60% looked after the show, while another 20% had looked before the episode started.

Secondary Content Creation

Turning from consumption to creation, we now look at the percentage of participants who were involved in creating a wide variety of related content for television shows. As shown in Table 3, we asked participants to think about their favorite television program, and the types of interactions that they had engaged in about this show.

While 90% of participants had consumed secondary content related to that show, only 42% had posted online about that show, 22% had joined an online community about the show, and only 7% had created content about that show, such as a GIF, meme, or review. We note here that these behaviors could have occurred any time in the past (even years ago) for a participant's favorite show, thus indicating a likely upper bound on these behaviors that is still rather low, and lower than we expected.

Age Differences

We observed age effects in social network interactions including creating a GIF/meme (t=5.15, p<10^{-7}), and going to Tumblr (t=6.59, p<10^{-6}), Instagram (t=2.95, p=0.005), Snapchat (t=3.60, p=0.009), or Reddit (t=3.67, p=0.0003) for related information, where younger participants were significantly more likely to engage in these interactions. There were no differences based on age in viewing second screen content before, during, or after a show or in other aspects presented in the tables.

showing a strong preference for an official voice from the show and more insight from the actors themselves.

When it comes to where users are turning to find this information, we can look at Table 2 for more details. IMDB, web search, and Wikipedia were the most common sources with over 60% of users turning to each of these within the past month. Social sources such as Reddit, Facebook, and Twitter come in next with between one third and one half of participants turning to each of these. Lesser-

LIMITATIONS

This study only explores behaviors in the United States. Understanding secondary content experiences in other markets remains a topic for future work. We are also lacking the qualitative data to more deeply explore why particular participants engaged in the behaviors that they mentioned. We have conducted a few preliminary interviews in this area, however a full qualitative exploration is beyond the scope of this short paper. Finally, we rely on a sample from Amazon Mechanical Turk. While we have shown in other work [4] that these samples can be trusted to provide results within about 7% from larger, prohibitively expensive market research studies, we have seen some instances where for particular questions the responses are off by more than 7%. Findings should be taken to be approximations of the broader US population and to indicate what many people are doing, some are doing, or few are doing.

DISCUSSION

This data has allowed us to get a deeper picture into what people are actually doing out in the world when it comes to secondary television-related content. What we have found most interesting is that most secondary content experiences occur after a program (60%) with only 20% occurring while the program is on. This validates earlier smaller-scale studies (e.g. [10]) and shows that this behavior is the norm and not the exception in the broader population. With the large focus on second screening and real-time companion apps at TVX, perhaps there is a need for a deeper focus on systems that help prepare viewers for an episode or help them deconstruct and share afterwards.

When it comes to sharing, we were surprised by the relatively low frequency of social and creation behaviors around television content. For their most loved television program, only 42% had ever posted online about it, and only 7% had ever created any sort of content about it. If this is for the show they are most passionate about, social numbers for other programs are bound to be even lower. It is worth exploring more deeply through qualitative interviews why people are averse to sharing viewpoints and media around television programs. Fear of spoiling [15] and differing political views [19] might be some of the reasons, and developing systems that help combat these issues could offer promise in increasing social behaviors around television content.

What is promising is that the data most often sought by viewers is structured data that is readily available online. Information about the show (air dates, number of seasons, shooting locations, etc.), actors (biographies, photos, filmographies, etc.), and related media (such as trailers, episode summaries and behind the scenes clips) could easily be aggregated to create a compelling post-viewing experience.

It would still be interesting to investigate this topic further and to observe viewers as they go through a post-show content exploration experience. This would help understand exactly what they are engaging with, in what order, how they discover new related content, and how other members of the household factor into this content exploration. We leave this to future work beyond the scope of this short quantitatively-focused paper.

IMPLICATIONS FOR DESIGN

The emergence of online video portals to find and watch large numbers of popular television series has dramatically changed the opportunities to create secondary content interactions. Content portals such as Netflix, Hulu, and Yahoo View provide viewers with a single place to gain access to vast content libraries.

While these sites have already done some work to integrate secondary content experiences (e.g. Amazon X-Ray [1], or the Tumblr GIFs and Behind the Scenes clips in Yahoo View), our survey points to new opportunities.

Focus on After the Show

Television is often watched because it is an immersive experience [12] that takes people out of their living rooms and into rich new worlds. This is fairly incompatible with being removed from this world to engage with secondary content while a program is being watched.

Our participants demonstrated a clear preference for viewing related content after a show was over, or before it started, accounting for 80% of recent secondary content interactions. Systems that attempt to engage users in related content to should focus on this time frame so that viewers can focus on the program and engage with related content before or after the program with more of their attention.

Aggregate Content Based on Structured Data

Most of the media that users were consuming relating to a television show was based on structured data that is readily available. While 64% of users turned towards a web search for this data, media platforms can easily aggregate this data in one place.

Basic show metadata and actor information, such as that from IMDB and Wikipedia can be used to find additional content. News articles about the actors, recent social media posts, clips of them from YouTube and other online video sources could all be aggregated together with biographies and links to related shows directly in the post-viewing experience instead of launching viewers directly into the next episode.

Provide More Targeted Social Experiences

We have observed that viewers are often hesitant to post to social media, even about their favorite shows. Creating more targeted social media experiences, harkening back to systems that connect users 1-1 (e.g. [8]) or in small groups (e.g. [2]) can help overcome reluctance to post and share content from favorite shows to broad and heterogeneous networks.

One way that this could be done is with time-synchronized comments in small social groups. Another way could be with easy-to-create simultaneous small-group watching experiences, similar to Shamma et al.'s system for online video clips [17].

CONCLUSION

In this short paper, we have explored current practices around secondary content viewing and creation in the broader American population. We have identified that viewers most commonly look for information about a show or an actor after a show is over, not while it is playing. We have also shown that fewer than half of participants had created content relating to their most favorite show, showing that content creation (including social content such as Tweets and Facebook posts) remains a niche activity for most general TV watching. Exploring ways to increase social engagement in television programs remains an area for future work.

ACKNOWEDGEMENTS

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