TV Watching Behaviors: Implications for Social and Mobile

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ABSTRACT
The convergence of TV content with online social network and the ubiquitous presence of mobile device present a new design space. We conducted interviews that included feedback on a mobile, social TV application prototype to explore this space and to gain understanding of people's current practices around TV watching. Our interviews helped us gain insights into current TV watching practices, question certain assumptions with existing social TV applications, and identify key design parameters for such future applications.

Author Keywords
Check-in, communal TV watching, community support, shouting, social network, social TV, television watching.

ACM Classification Keywords
H5.m. Information interfaces & presentation: Misc.

General Terms
Design.

INTRODUCTION
Recent studies indicate that TV watching is shifting gears from a communal experience to a solitary one [3]. This shift is a result of social, cultural and technological settings. The increase in the number of TV sets and TV-watching devices such as computers, laptops, tablets, and smartphones in a household fosters the solitary consumption of television in places beyond the living room. The explosion of TV channels also makes it hard to reach consensus on which channel to watch together. Finally, digital technologies that enable time-shifted viewing also challenge a synchronized communal TV watching experience.

Can we use technology, a catalyst for solitary TV viewing, to restore and foster the social aspects of TV viewing? This question has spurred development of many prototypes [2, 4, 5, 7]. Some of their key features include: overlaying rich communication content on broadcast TV; providing television presence through buddy list, avatars, or ambient displays; supporting synchronous and asynchronous communication of co-located or distant TV consumers using text, audio, and video; and capturing user's viewing habits such as viewing history and a list of favorite shows.

The recent success of social networking services has led a resurgence of interest in social TV. Also, these services have established new cultural norms around constant connections, status updates, and sharing. As a result, the new practices increase the likelihood of using social TV [1] in our daily lives and influence the design of various social TV applications features.

The frequent use of mobile devices while watching TV opens up a new design space. The idea of using overlays on TV and using TV as a communication channel can cause visual distractions and interfere with the TV watching experience [3]. In this respect, mobile devices can provide a secondary display to complement the primary TV display and an alternate means for communication and socialization. Peel, Miso, GetGlue, SocialGuide, and Numote are some new social TV applications targeted for the mobile platform. They build on people's existing practice of using mobile devices for checking and posting updates on social networking websites and for texting while watching TV.

In this paper, we explore the use of mobile devices for social TV. Our main focus is (1) to study the potentials of and challenges with the convergence of social network and TV, (2) to understand the role of mobile devices for socialization around TV, and (3) to explore the use of a social network platform focused on socialization around TV content and accessible from mobile devices. In order to do this, we conducted a number of interviews that included feedback on the design of a mobile, social TV application prototype that we developed called Mochi TV. The objectives of the interviews were: (a) to identify interesting behavioral patterns with TV watching and online social networking; (b) to investigate people's current needs and desires for socialization around TV; and (c) to obtain user feedback to improve the design of future mobile social TV applications. We gain insights into viewers' shifting preferences between solitary and communal watching, question assumptions regarding "check-in" feature of current social TV applications, and suggest design considerations for the "check-in" feature.

PROTOTYPE – MOCHI TV
We created Mochi TV, a mobile, social TV application, as a vehicle to explore the use of secondary display and a specialized social network for users to interact and share TV related content. We showed this prototype in our interviews to obtain feedback on the use scenarios. The initial prototype included features commonly present in current social TV apps as well as new features. In particular, Mochi TV allows users to "check-in" to TV shows, share and view comments related to certain shows, and view real-time social trends. We also provide a new set

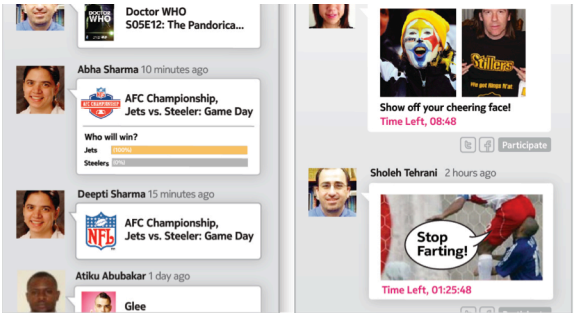

Figure 1: Main page displays user's latest posts or "check-in" information to the show (left) and Sprinkles page displaying virtual face painting and speech bubble (right).

of tools, known as sprinkles, that enables users to create their own show-specific content (see Figure 1). We describe each along with the design rationale.

Check-in to TV Shows

Finding shows of mutual interest often becomes the starting point of communication. To facilitate this process, we implemented a "social check-in" feature that allows users to post the shows they are watching to friends within their network. The concept of "check-in", popularized by Foursquare and Google Latitude, allows users to "check in" to a physical place. This concept is widespread among location-based services and has been adopted for other types of activities including listening to music and watching TV (e.g., Spotify, GetGlue, and Numote). Thus, we included this mechanism to support the emerging norm of announcing activities in online spaces.

Social Trends

Selecting a show among the many TV channels available can be overwhelming for viewers. The list of trending shows often functions as a useful resource for viewer guidance. These TV ratings have existed for a long time. What is new is the use of social networking sites that house data on people's sentiments and interests, as a data source for trending shows. We mine this source for shows people "liked" and "disliked" and compute the real-time popularity; a feature also supported by SocialGuide. Besides trending shows, we list shows that are popular within a user's social network.

Sprinkles

Sprinkles is a set of tools that enable users to create their own entertaining material based on the TV content. The goal is to go beyond chatting and allow users to express creativity and emotions through the content they share. We provide tools that expand a user's role from a mere consumer to an author of entertaining content. Sprinkles include a quick poll tool for creating polls and getting votes, speech bubble tool on captured images for sharing witty comments, and a virtual face painting tool for painting one's photo with colors or flags.

INTERVIEW

We conducted interviews to understand current TV watching behaviors and to validate our assumptions underlying the features of Mochi TV. Twelve participants were recruited through a local research firm. Three separate pairs of participants and six individual participants were interviewed for a total of nine interviews. Paired interviews allowed us to explore the nature and content of the communication that the paired friends have around the same shows they watch. The participants' age ranged from 18 to 40 years of age. They were full-time, part-time, and unemployed workers, students, and homemakers. The male to female ratio was 5:7. All the participants owned a smart phone. On average, our participants watched TV for about 2-3 hours a day and were very active (i.e., frequently checked updates and posted comments) on social networking sites. We interviewed participants for about 40 to 60 minutes at our office. Participants were encouraged to share their experiences, anecdotes, views, likes and dislikes. Some of the questions asked were: "How often do you use social network to share TV related content?", "When do you share, before or after the show?", "What do you like and dislike about social networking?" We also demonstrated our Mochi TV prototype, allowed them to interact with it, and solicited their feedback.

FINDINGS

Solitary Watching Reinterpreted

Solitary TV watching was dominant among our participants. However, people's interpretation of this was different from our initial thought. For our participants, solitary watching was often by choice and made in favor of convenience and efficiency. They did not perceive this negatively. They simply enjoyed watching their shows during their most convenient time, with the aid of a DVR. For people, who did not like missing out on any part of a show, solitary watching was more of a conscientious decision to avoid distractions caused by others. Escape from a constant connection was another reason that we found to be interesting. "*TV is free from privacy issues. You are watching it and that's it*," said one single male participant in his early thirties. Although he was an active Facebook user, he was concerned with privacy and appreciated the privacy TV offered. For some participants, TV watching was one of the few ways to spend "downtime" freed from not just their work, but also from the constant demands of social networks.

Occasions for the Communal Watching

While solitary watching was prevalent among our participants, they still engaged in communal watching for special occasions or for specific genres of shows. One participant, highly sensitive to being disrupted while watching shows, said that she would invite people to watch the Oscars every year. She enjoyed playing games and guessing the winners together. However, she admitted to taping the show and would watch it again to make sure she

did not miss anything. The effort to arrange the communal watching also happened for specific genres, most notably, a sports game. Two male friends who were sport fanatics reported that they would occasionally get together with a few other friends for watching sporting events.

The desire to spend time with family or friends was another reason for occasional communal viewing. One participant, who was living by herself, said she recorded the "Daily Show" and saved it until her boyfriend visited because that is the show they both enjoyed watching together. Another participant, who was in a long distance relationship, reported watching "Heroes" with her boyfriend through Skype. A teen participant said that she and her male friend were constantly texting each other using their mobile phones while watching the women's soccer world cup.

Delayed Sharing versus Immediate Shouting

While our participants preferred solitary watching, they were still interested in talking about the shows. In terms of having direct conversation on the shows, our participants said they would often wait for an opportune time to talk rather than calling someone immediately. This was due, in part, to a preference for face-to-face conversation and also the insignificance of the topic. So, often times, the sharing happened in a delayed fashion.

However, when people experienced intense emotions, they had a strong urge to release them via social networking sites. For example, one participant said she was infuriated when Jason Mesnick dumped Melissa on the "Bachelorette" show. She rarely made posts about TV shows on Facebook, but for this time, she immediately tweeted using her smartphone to express and dispense her anger. Another participant said that she cried after watching the final episode of "Sex and the City" and immediately used her smartphone to express her emotions on Facebook.

Specific Responses to the Prototype

Overall, our study participants gave mixed-reviews to our prototype. Some people said it is "useful," "kind of fun" and "great", while others expressed doubts and concerns about it. Since all of our participants were actively using mobile devices for social networking, the concept of using mobile, social TV application was well accepted. The majority of the participants felt that there was too much noise on public social networking websites. They valued the specific focus of Mochi TV. Some participants claimed that an application like Mochi TV helps reduce their hesitation with sharing information about TV watching. For instance, a middle-aged homemaker reported she rarely made posts about TV shows on Facebook because they were neither memorable nor celebratory. However, she would feel more comfortable sharing within our application, since other users are doing similar things.

Participants were not always comfortable disclosing their choice of TV shows or watching habits. For example, one male participant confessed that he is a fan of "Sex and the City" but does not like to share this because "*it is a show for women.*" Similar guilt or shameful feelings were shared by participants who watched so-called lowbrow shows such as "Jersey Shores" or "Keeping up with the Kardashians."

Participants were also conscious about the number of check-ins. "*I will certainly not use it to post every single TV show that I am watching. That would be just sad*," said one participant, who tried to reduce her TV watching time. While people expressed mixed views on the "check-in" feature, they were largely positive about the "check-out" feature, that is, knowing what their friends have been watching.

A common concern, among many participants, was the difficulty of finding friends who happen to watch the same show at the same time. Sporting events were the only exception to this. Participants who were interested in sports said they were more likely to use this application synchronously with other friends while watching sports games.

One recurring feedback was a request for a simple and easy means to form groups based on shows of mutual interest. They suggested displaying these groups prominently on the main page instead of individual check-in activities. The rationale was the difficulty of finding friends with similar tastes amongst the live feed of every check-in activity.

Teenage participants were interested in the polling and bubble filling features in sprinkles. One teen female commented that the bubble feature was hilarious and that she could see it being used by her friends. People who were interested in sports liked the face-painting feature.

DESIGN REVISITED

Our interviews reveal issues that call for re-designs in the check-in feature and how information is displayed.

Check-in Incognito

People are hesitant about publicizing their TV watching activities due to the negative cultural connotations attached to TV consumption or perceived inappropriateness of the show itself. To mitigate the stigma from certain check-in activities, we suggest a redesign that enables users to manage the disclosure level of their identity attached to a check-in. Depending on user needs, they can be anonymous or they reveal full or partial identity. This flexible identity disclosure provides a better outlet for one's check-in activities and allows anonymous people to create a group around shows that they would otherwise be reluctant to disclose publicly. By doing so, we support people with a mechanism to serendipitously discover an unexpected mutual interest amongst a subset of people in their public social network.

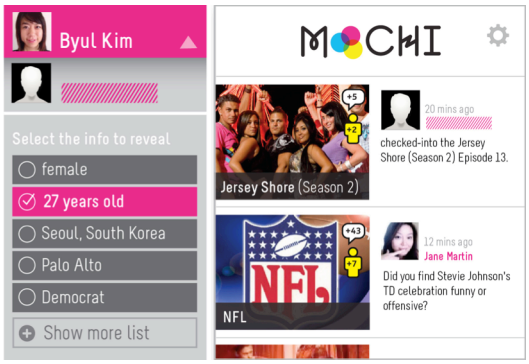

Figure 2: Check-in incognito (left), group by show (right).

Check-in Do Not Disturb

A check-in announces the users TV watching activities. Upon user selection, they can supplement it with "do not disturb" to ensure that they are not interrupted during TV watching. It also displays the remaining time in the show, so that others know when the user is available.

Check-ins Grouped by Shows

We shifted the priority of our main page from indicating other viewers' presence to reporting updates of the shows users subscribe or check-in to (see Figure 2). This change is based on our participant's frustration with browsing through each individual's status updates in order to find friends who were watching the same show. On our main page, we reveal the latest comments, and indicate the number of new members and comments to the shows.

CONCLUSION

Using mobile devices as a hub for social TV interaction is gaining popularity due to the widespread use of mobile devices for social networking. Designs for such devices need to incorporate an understanding of the behavioral patterns and social needs of users with respect to TV watching. In this paper, we conducted a preliminary set of interviews and solicited feedback on a mobile, social TV application to help us explore this design space.

We found that viewers have fluctuating needs for socialization around TV content. Most of the time people enjoy solitary TV watching. However for specific show genres (e.g., sports, award shows) and for special occasions the need for communal watching increases. Also, when emotions run high, people do feel the need to communicate and share their emotions. In this case, a mobile device is a convenient tool for quick shout outs. Social TV applications should therefore consider the characteristics of these special genres or occasions.

Self-consciousness of watching too much TV and the guilty pleasures associated with certain shows question the value of the "check-in" trend present in various mobile-based social applications. A thoughtful "adaptation" rather than mere "adoption" of such a feature is needed. We propose three changes to "social check-in" based on feedback during the interviews: incognito, do-not-disturb, and group by shows. With respect to the incognito aspect, designs should incorporate innovative means of providing anonymity and rewarding users without making them conscious of their TV watching behavior.

Current social networks face the problem of being overcrowded and overloaded with a lot of information. Our viewers expressed their hesitation to make posts on such social networks either due to the fear of being judged by others or the lack of glamor in their posts. For this reason, a specialized social network for TV provides a space for people to be more open, less self-conscious and discover like-minded people.

We plan to experiment with our revised prototype and conduct an extensive field study in order to gain a deeper understanding of the users' fluctuating desires linked to sharing TV-related activities.

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