A Case Study on Understanding 2nd Screen Usage during a Live Broadcast

A Qualitative Multi-Method Approach

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***Abstract*— Media multitasking with different 2nd screen devices – i.e., with tablets, smartphones and laptop computers that are used simultaneously with viewing a television broadcast – has rapidly become a common user behavior. While this behavior can be measured quantitatively in several ways, fairly little is known about the reasons and motives behind it. To compose a better understanding of the role that 2nd screens have in the viewing experience of the user, we conducted a case study with 12 participants by using a combination of qualitative data collection methods. Through thematic analysis we combined four ideal types, Commentator, Analyzer, Home Gamer and Active Follower, which exemplify the different meanings that 2nd screen usage has for the viewer.**

Keywords-media multitasking; 2nd screen; case study; user types.

I. INTRODUCTION

The emergence and evolution of mobile technology and mobile services have changed the media landscape irrevocably. Media users can now "go online" virtually in and from anyplace and have nearly unlimited access to media content and services from myriads of providers. Media businesses – from newspaper companies and TV broadcasters to digital content providers – are trying to re-invent their products and business models to suit the evolving needs of the mobile user. This re-invention needs empirically supported knowledge from all aspects of mobile device use.

Using mobile devices simultaneously with other media content is a change in user behavior that has emerged rather recently. An estimation from Nielsen [1] suggests that 69 % of US users aged 13 and above use tablets while watching TV at least several times per week. Google's survey [2] suggests that 81 % of smart phone users used it simultaneously with TV. These figures may be among the highest estimations, but it is nonetheless safe to say that this type of multitasking has become common very rapidly.

We call tablets, smartphones and laptop computers that are used simultaneously with TV viewing as 2nd screens. While media multitasking is an old phenomenon on a non-specific level (e.g. reading a magazine while listening radio), the fact that 2nd screens have the capability to be connected to the same media experience in a personalized way creates a whole new design paradigm for both media business and media research.

Currently, users' behavior with 2nd screen services is tracked through a variety of quantitative variables – e.g. amounts of downloads, clicks, traffic sources and use flows. These variables are mainly used for measuring service performance and the business impact of a specific service. Researchers, whose goals tend to be wider and more of a theoretical nature, have used mainly surveys and laboratory experiments to study the use of 2nd screens.

While quantitative methods such as tracking digital footprints or conducting online surveys may be the only practical way to study media use among the masses, our case study takes a qualitative perspective on 2nd screens and thus contributes to understanding reasons and motives behind the usage figures. In order to design 2nd screen services that support or enhance users' ways of using media, we need to understand why 2nd screens are used and how they could potentially change the media experience. These issues are particularly interesting in the context of live broadcasts, as they make synchronized information flow between the broadcaster and the 2nd screen possible. Consequently, our research question is defined as follows:

What kind of role does the 2nd screen have in the users' viewing experience during a live broadcast?

An entertainment program called the Voice of Finland (VoF) served as a practical setting for the research. We selected a sample of 12 adults aged from 20 to 38 years who considered themselves "followers" of the show and studied their 2nd screen use relating to the show. We used a mixture of data collection methods – media diaries, theme interviews and on-site observations – to provide a broad perspective on the research problem.

The article proceeds as follows: the next Section summarizes earlier research on 2nd screen usage, and Section 3 elaborates the qualitative case study approach and the combination of data collection methods utilized in this study. Empirical results are described in Section 4 and discussed further in Section 5. In Section 6, implications and limitations are considered.

II. STUDIES ABOUT THE USE OF 2ND SCREENS

A. *Media multitasking as a general phenomenon*

In research, media multitasking has been the most common viewpoint used to describe multiple media use. This concept covers a broad phenomenon including different

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media channels and both non-media [3] and media [4] multitasking activities: In this article, we concentrate on the latter: "the practice of participating in multiple exposures to several media forms simultaneously" [4].

Media multitasking has been on the research agenda for around 10 to 15 years; for example, Pilotta et al. [5] found out already in 2004 that only 16 percent of the US media population did not engage in simultaneous media usage. Popular viewpoints in prior research on media multitasking include the ability to process information and perform tasks in multitasking environments, gaze distribution between media and age-based differences in multitasking behavior [6].

Our case study focuses on multiple media use that is related to a specific, live TV program. In a more general laboratory study on concurrent TV and laptop use, Brasel et al. [6] found out that participants switched their attention between a television and a laptop at an extremely high rate. The computer dominated the television for visual attention, and the gazes captured by the television were shorter than gazes captured by the laptop. However, the time was split between more web pages than channels.

B. *From media multitasking to program-related 2nd screens*

Most of the media multitasking around TV – say, email checking or online shopping – is unrelated to TV watching and only part of it enriches the actual program content and watching experience [7][8]. The simultaneous, program-related use of other devices during a TV broadcast has gained less attention in academic research than the wider phenomenon of media multitasking. To date, studies taking the user perspective have been conducted mainly at the level of industry reports using the terms 2nd screen or social TV [9], and academic studies are still scarce.

One stream of research has focused on developing and designing 2nd screen devices and solutions both for controlling TV programs/services and for enriching TV programs with interactive features such as quizzes and voting [10]. Cesar et al. [7] summarize the roles of a program-related 2nd screen through a taxonomy of three activities: content control, content enrichment and content sharing.

Another stream of academic studies on 2nd screens has focused on social media (e.g. Twitter, Facebook or instant messaging) usage during TV broadcasts. For example, Han et al. [9] used a qualitative convenience sample consisting mainly of students and found five motivational categories for the complementary use of text-based media (mainly instant messaging and social media) during live TV broadcasts: communicating about impressions of a broadcast, information sharing and seeking, feelings about co-viewing, curiosity about others' opinions and program recommendations.

In addition to established social media channels, some research has also been done on social TV applications such as GetGlue, Intonow and Miso in the US. Basabur et al. [11] emphasized in their field trial that program-related use of social TV applications is characterized by the innate need for social validation: a place to show off the knowledge, compete on who makes the funniest comment, and validate the feeling that friends think alike and belong together.

More recent academic research has focused on 2nd screen applications that are offered by TV companies to enrich the viewing experience of one specific program (like the VoF and the HomeCoach application in our case study). The use of these applications is in line with more general media multitasking: interest in 2nd screen applications and the intention to use them is higher among people who are used to using other media during television viewing [12]. However, some studies have pointed out a critical view on the potential of program-related 2nd screens, emphasizing the strengths of TV as a low-effort medium and reporting fairly low usage rates of interactive features unique to specific TV programs [10][13]. Also in the study of Courtois et al. [12], respondents were only slightly interested in using program-related 2nd screen applications and preferred using established social media channels instead of specially designed applications. On the other hand, in the study of Basabur et al. [11], participants appreciated the idea of getting different aspects of the 2nd screen in the same application if the integration with established social media was smooth.

C. *2nd screen and entertainment programs*

The program genre plays an important role in, for example, the use of TV in general, and more particularly in the use of social TV [11][14][15]. For example, the genre of television content had stronger effects on gaze duration distributions than individual psychological differences in the study by Hawkins et al. [16].

Social features have been pointed out to be especially suitable for sports, reality TV, quizzes and home decorating shows [14][15]. A study by Geerts et al. [15] relates this to the plot structure of a show claiming that people do not talk while engaged to a plot. Also Basabur et al. [11] concluded in their field trial that the program genre affected how much effort users were ready to put on making and reading comments on the 2nd screen. If the program required a lot of attention, like dramatic shows, users experienced creating links and informational posts to a 2nd screen as distracting; however, simple commenting was still accepted and fans of shows knew the patterns of the shows and became skillful in knowing when they can take their eyes off from primary TV content.

In a qualitative study by Han et al. [9], it was reported that communication about one's impressions of a broadcast was the strongest motivation for using instant messaging and/or social media during entertainment program broadcasts. This motivation means exchanging mutual thoughts or opinions, developing a bond of sympathy, using the content of a broadcast as a topic of conversation and talking about persons on air. The second most frequent motivations with entertainment programs were 'information sharing and seeking' and 'feelings of co-viewing'.

III. QUALITATIVE CASE STUDY APPROACH

Earlier research has used mainly surveys and laboratory experiments to study the use and users of 2nd screens. Our

goal was to compose a deeper and more coherent understanding of the role that 2nd screens can have in the personal viewing experience – not to generate statistically generalizable results from a specific form of data or evaluate the performance of the 2nd screen application itself. A qualitative case study approach was found to best suit the purpose of our research: Case studies focus on understanding the dynamics that are present in single settings [17], and qualitative data offer insight into complex processes that cannot be reached with quantitative data [18].

The advantages of qualitative data collection methods are known, but so are their disadvantages. Reflective methods like interviews, where the respondent reflects his or her media experiences, are known to have reliability issues [6]. Respondents do not remember their doings correctly, and nor are they aware of everything they do [19]. On the other hand, direct observational methods do not reveal the motivational background or users' own interpretations. Further, data collection that is conducted in laboratories or in controlled settings fails to address the natural complexity of the media experience in an interpersonal context [20], for example.

Based on the rationale above, we designed a research framework that had its groundings in contextual inquiry. Contextual inquiry is an ethnographic research method that aims to find naturally used roles, attitudes and behaviors to support design work [19]. We collected the data with multiple qualitative methods, both observational and self-reflective methods, to overcome the disadvantages that a single method may have had. All prerequisites and requirements relating to 2nd screen devices or their use were discarded once the participants were chosen. In other words, we encouraged natural use of 2nd screens – in contrast to Brasel et al. [6] and Tsekelevs et al. [10], for example.

A. *Case: The Voice of Finland*

The VoF offered versatile possibilities for 2nd screen interaction and thus also a rich practical setting for the research. The show is based on a Dutch concept, the Voice of Holland, developed by Talpa Holding NV in 2010 and now franchised to over 20 countries. In the show, a group of amateur singers compete against each other under the guidance of professional artists. In Finland and in several other countries it is one of the most popular shows on TV. The VoF's 2nd screen channels included active and actively promoted Twitter and Facebook channels, partly simultaneous broadcasting with different content through the program's web page, and a specifically developed, free and interactive 2nd screen application – HomeCoach – that was synchronized with the live broadcast (Figure 1). The application (Kotivalmentaja in Finnish) was freely available for Android and iOS smartphones during the season and it offered different functionalities in different phases of the VoF, from guessing the course of the show to evaluating the performances and cheering the contestants. In a sentence, at the time of the study the VoF was the most comprehensive attempt to bring together TV broadcast and 2nd screens into one rich media experience.

B. *User participants*

The user participants for the study were chosen from a participant pool which was formed on the basis of a recruitment questionnaire. The questionnaire was advertised

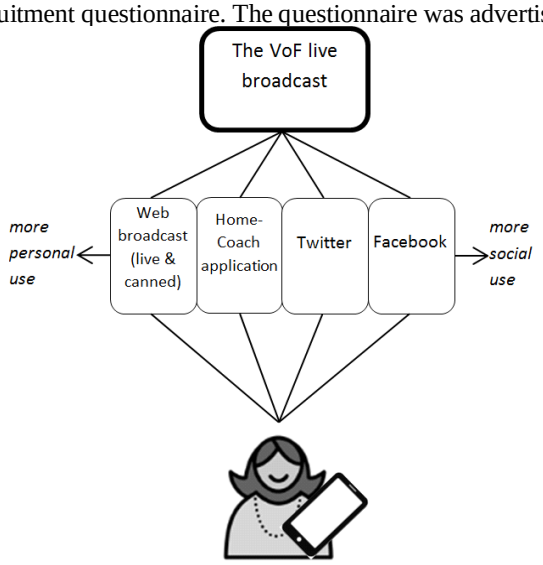

Figure 1. The VoF and the official 2nd screen channels

on the VoF Facebook page. Besides demographics, we collected information about general 2nd screen use and watching habits. From the 261 people that filled in the questionnaire, we picked 12 adults who watched the show in different social settings and whom we regarded as early adopters or early majority (as defined by Rogers [21]) in broadcasting-related 2nd screen application adoption. The 12 participants who resided in Southern Finland and were aged from 20 to 38 are summarized in Table 1.

C. *Media Diaries and Contextual Interviews*

All participants were asked to fill in a qualitative and mostly open-ended media diary for seven consecutive days, and they were interviewed both in the beginning and at the end of the diary period.

TABLE I. THE PARTICIPANTS OF THE STUDY INCLUDED NINE FEMALES (F) AND THREE MALES (M).

	Age	**Household type; living**	**Described typical VoF watching situation**	**Home Coach**
F1*	20	With a friend	With a friend	Yes
F2*	20	With a spouse	With a spouse	Yes
F3*	24	Alone	With a group of friends	Yes
M1	28	Alone	Alone or with a friend	Yes
F4*	32	With a spouse	Alone	Yes
F5	34	Alone	Alone or with a friend	Yes
M2	35	With a spouse and 2 children	With family	No
F6*	35	Alone	With a friend	Yes
F7	35	With a spouse and 2 children	With family	Yes
F8	36	With a spouse and 2 children	With family or with a spouse	No
F9*	37	With a spouse and 3 children	With family	No
M3	38	With a spouse and 3 children	With family or with a spouse	Yes

* Participated in the on-site observation

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The first interview happened in all but one occasion in the participant's home, i.e., in the context where she or he viewed the VoF. In the interview we were interested in the personal 2nd screen usage motives and habits on one hand, and in the social context (both virtual and physical) in which this usage happens on the other. We encouraged the participants to provide their own interpretations, e.g. by asking "*How would you describe your use*" instead of "*How do you use (the 2nd screen device in a certain situation)*". All interviews were recorded and transcribed for further analysis.

The main purpose of the pre-structured media diaries was to provide a longer temporal viewpoint on the research question: While the weekly live broadcasts were in the central focus of the study, show-related 2nd screen channels were active also between the shows. The content of the media diaries was walked through with the participants to ensure that they understood what was required from them. In the diaries we asked the participants to make notes on their 2nd screen use before, during and after a chosen TV viewing event, and the tasks they did relating to VoF each day. We also asked the participants to describe the social setting where the viewing happened, and even the emotions and feelings that were attached to the situation. With the question setting we also aimed to provide rich stimuli for the second interview, which was conducted on the basis of the filled-in diary.

D. *On-Site Participant Observations*

In addition to media diaries and contextual interviews, we conducted six participant observations in the participants' homes – i.e., in their typical watching environment – during the VoF live broadcasts on Friday nights.

Two researchers were present in each observation. The observation sessions started with an explanation of the process (i.e., research methods and use of data) and were followed by an interview, as described in the previous section. The participants and other people present were free to ask questions at any time. These discussions that preceded the observation also served as a way of building trust – or rapport, as described by Guest et al. [22] – with the participants. This trust-building session was an essential part of the participant observation, since natural behavior was encouraged. The main challenge of participant observation, namely, the possible impact of the observer on the behavior of participants, was recognized. However, it was justified to use this method because asking clarifying questions immediately on-site enabled us to study the motivational background and users' own interpretations, which are central to our research question. Additionally, in this multi-method approach, the results do not build solely on observation, but the diaries and interviews complemented the picture.

During the VoF live broadcast, the researchers took notes on the behavior of the participant, from time to time asking clarifying questions; for example, when it was unclear what the participant did with the 2nd screen. It was agreed beforehand that the other researcher would focus especially on the 2nd screen use, while the other observed the social context of the viewing event. All the observations were videotaped, with the permission of everyone involved.

After the broadcast, the participants were briefly interviewed on the basis of the observations. This was done to asses both the typicality of the viewing event and the validity of the researchers' interpretations.

E. *Thematic Analysis*

Thematic analysis is a flexible analysis method that allows the use of different types of qualitative data. There is no explicit way of practicing this widely used method, but as a general definition it is used for identifying, analyzing, and reporting patterns (i.e., themes) within the data [23].

In this study the collected data – i.e., the transcribed interviews, media diaries and observation reports – were first initially coded separately by the researcher who interacted with the participant in question. The results were then shared and discussed within the team to build mutual understanding between the researchers. These discussions were especially important since the research team was a multidisciplinary one with backgrounds in psychology, marketing and technology.

From the initially coded data, we identified themes that would most clearly define the role of the 2nd screen use in the viewing experience. From these themes we combined four ideal viewer types and named them as Commentator, Analyzer, Home Gamer and Active Follower. The purpose of these ideal types is to illustrate the different roles that the 2nd screen serves in a TV viewing experience. Ideal types are common mental constructs in social sciences; they do not conform to reality in detail, but rather approximately [24]. Each of these types has a different use motivation and a different way of using 2nd screens.

IV. RESULTS: DIFFERENT VIEWER TYPES

A. *Commentator*

A Commentator mainly uses the 2nd screen because of two reasons: it provides social amusement and gives novelty value. Commentators like to watch interesting TV shows with others and they enjoy observing and commenting on various aspects of the show spontaneously as they pop up. In the case of the VoF, they are not only interested in the music or the competition but also in the styling, musicians, audience and the speakers. Some Commentators searched these details online while watching. The show provides a forum for spotting interesting people and trends and the 2nd screen can support this. As the 2nd screen solution of the VoF did not support this kind of trend spotting, some commentators felt that it is irrelevant or disturbing, as it interferes with observing and commenting. For this user group, information on their interests, such as brands of clothing or members of the house band, could make the 2nd screen more attractive.

For Commentators, watching TV and using 2nd screens is often a social event. Watching the show together with others gives a possibility to spontaneously exchange opinions of anything seen in the show. Commentators are also willing to try out new things, and 2nd screen applications are one opportunity that they want to check out with their friends or family. 2nd screens can be used together or at least shown to

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others once in a while. For those commentators who watch TV alone, Facebook, instant messaging and Twitter can serve as the social aspects. Commentators are an optimal target group for social 2nd screen solutions or social media which give interesting information on trends and various aspects of the show. However, the 2nd screen should not require intense concentration, as there may be interesting issues on TV to observe any time. Some commentators fluently use several 2nd screens, social media and 2nd screen applications during one TV show, while some prefer to concentrate on the main screen – in order not to miss any important moments.

The following observational note demonstrates how Commentators constantly comment on the different aspects of a program and how the use of a 2nd screen together with a friend blends in with this commenting:

> One of the competitors, Eve Hotti, has started to sing. *"I would like to win a prize that includes a stylist that would style us like that, looking so nice."* Annikki says. Annikki and Mira compliment Eve's make-up and clothes. Mira sings along with the song and comments on the name of the performer: *"It would be nice to be Mira Hotti."* [The last name refers to "hot" in Finnish]. Annikki evaluates the performance with the HomeCoach application as good and tells this evaluation to Mira. When one of the judges gives the feedback in the show, Annikki comments: *"He [the judge] has become more masculine. That hair fits him well."*
>
> (Observational note, Annikki 35 years)

B. *Analyzer*

For an Analyzer, the 2nd screen serves as a tool for obtaining relevant additional information related to the content of the TV program. In the case of the VoF, this information helps them in analyzing the potential success of contestants. Receiving real-time updates of other viewers' reactions to the performances gives them a means to anticipate the results of the show and compare the general reaction of the audience to their own opinions. It is typical of them to ponder on the reasons for the success of certain performers – whether it is due to song selections, feedback from coaches or lack of similar contestants.

Analyzers are not only interested in seeing other TV viewers' responses, but they also want to express their own opinions and thus have an impact on the statistics of the show. As they value the accuracy of the information, it is also characteristic of them to evaluate performances precisely and even fine-tune their evaluations several times during a performance. Their commenting has a wider time frame: Analyzers may even compare the program content to previous program seasons, while Commentators spontaneously comment on things as they pop up in the program. As analyzing requires concentration on the program in question, Analyzers mainly use one 2nd screen at a time and are an optimal target group for program related 2nd screen applications. The 2nd screen application related to the VoF was especially liked by Analyzers.

The following observational note illustrates how Analyzers really put their effort into expressing their opinion precisely with a 2nd screen and how comparing one's own opinions to those of other viewers' becomes a part of 2nd screen usage:

> Tiina and Kimi are listening to performances closely and Tiina evaluates each with the HomeCoach during the song. They discuss about the song choices and the competitors that they believe will continue the competition from each team. During the performance of Antti Railio, Tiina first gives a rating with the HomeCoach that the performance is excellent. While the song goes on, she fine-tunes the evaluation and finally decides to use the Wow button [the best rating in the application] and tells about it to Kimi: *"I will give him a Wow"*. Before the song ends, Tiina shows Kimi the evaluations that others have given with the application: *"See, almost everyone says that this was excellent."*
>
> (Observational note, Tiina 20 years)

C. *Home Gamer*

For a Home Gamer, the 2nd screen brings engaging extra activity besides watching the show. Home Gamers are excited about possibilities which support playful competition between the TV viewers. Although Home Gamers are naturally interested in the competition between the contestants of the show, they may be even keener on competing with other TV viewers through the 2nd screen or on their own gaming habits that they have generated around the program. When competing with other TV viewers, it is important to see one's own points and placement in the 2nd screen application, for example. Good rewards or recognition through the application may also motivate them.

As the VoF was broadcasted on Friday nights, it was also a time for starting a weekend with the family or getting together with friends. In these contexts, a well-designed 2nd screen application can give an extra spice for watching the show together and create playfulness in the audience. For example, one group of four friends organized 'VoF parties' to watch the show, eat and chat together. Each one of them used her own iPhone to guess which contestants can continue in the show. The answers were first hidden and then revealed simultaneously. Although the 2nd screen application did not actually support this kind of competition, it encouraged them to play together.

Some home gamers wished for a 2nd screen solution which would truly support them in competing with each other – not only competing with other TV viewers. In some families or friend groups, the gaming habits could reach even a bit more serious level. For example, in one family everyone's guesses were recorded to an excel sheet to calculate the points and the winner was announced after the show with excitement. In another family, children had their own competition: they guessed which contestants continue and bet on their last candies. In guessing competitions the 2nd screen and social media sometimes served as a way to receive extra information – publicly or secretly - for supporting one's guess, but it could be designed to support these playful activities in a much more focused and engaging ways.

The following observational note and interview quotation demonstrate how a 2nd screen application can enable playfulness even if the person is watching TV alone:

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> Heli is really focused on watching the the VoF in her favorite armchair. She uses the HomeCoach application actively during the program and rates each competitor as quickly as possible at the beginning of each song. Right after the show, she checks her points and placement in the weekly competition like she does every week: *"It brings more excitement, a new twist when you can't wait to see if you guessed right. I actually won one weekly competition. I got some kind of widget but I sold it. But it feels great to be right."*
>
> (Observational note and interview quotation, Heli 32 years)

D. *Active Follower*

For an Active Follower, the primary role of the 2nd screen is to follow and walk along the journey of certain personas in the program. In the case of the VoF, these personas were competitors, coaches and/or hosts. The 2nd screen becomes meaningful to Active Followers through showing support to one's favorites and becoming an active fan. It provides an opportunity to get closer to the people in the program than by watching traditional linear broadcast without a 2nd screen.

Through 2nd screen usage, Active Followers look for additional information about the facts, backgrounds, learning, history and career development of their favorite personas. They are looking for an insider feeling, a feeling of being a part of the program and the lives of people in it. The interest in personas is not limited to the broadcast or the program season: they are also interested in getting updates about the life and career of their favorites after or outside the program. They follow contestants through different media, both traditional and digital, during the whole program season. TV broadcasts are already enriched by magazines, tabloids and websites, and the 2nd screen adds an extra spice to that.

Active Followers want the possibility to participate in live broadcast, discuss and cheer their favorite performers. Social media is an important part of 2nd screen usage through the willingness to express and share the support of persons with other viewers or friends. This need can be fulfilled by using Twitter or Facebook or by using program-related applications. For Active Followers, an ideal 2nd screen application would be one that gives an opportunity to follow your favorites during and outside the broadcasting time.

The following interview quotations illustrate the central role of following certain persons in the program and how it is reflected in the use of the 2nd screen:

> *"I think this year they have managed to promote the career of all artists slightly better than last year. Their personality has been shown and I have seen that they have got gigs." … "I did not use the application anymore during the final week because my favorite performers were not in the competition anymore" … "I tried sharing the HomeCoach results in Twitter, but I was disappointed that it did not share who I was cheering."*
>
> (Interview quotations, Anna 34 years)

V. DISCUSSION

Table 2 summarizes the key differences between the ideal user types that stem from the data. The role of the 2nd screen for each type is further elaborated by describing the key contextual aspects and motivational factors. Motivations for 2nd screen usage are categorized by following the well-established research stream of uses and gratifications. This research perspective emphasizes that the audience may use the same media in different ways and to meet different needs according to their own wants and contexts (cf. Katz et al. [25]). It has been widely used especially in assessing motivations to use media [26]-[29], and in different studies they are roughly categorized into motivations related to information benefits, entertainment benefits and social benefits [9]. A similar categorization can be also found in the literature of perceived value, in which categories are named after utilitarian, hedonic and social value, respectively [30]. Compared to the majority of earlier research in 2nd screen usage [10]-[13], our results describing the different roles, contexts and motivations that 2nd screen have in the users' viewing experience shift the emphasis from usage intention figures and interface design to understanding user experience.

The primary role of the 2nd screen in the viewing experience is different for different viewer types. Our results include all three activities from the taxonomy of Cesar et al. [7], namely content enrichment, content sharing and content control, but give more detailed description of different role these activities can take in viewing experiences. For Commentators, the 2nd screen supports first and foremost the social aspects and commenting. It can be used together in order to strengthen the social ties in the living room or alone in order to avoid the feeling of watching alone. Key contextual aspects include other people and the role of different 2nd screens. Analyzers, instead, use the 2nd screen to support the analysis and anticipation of results. In their context the program content, directing the subject of analysis, has a more central role in 2nd screen usage. In addition to reality shows, detective stories, for example, could have suitable program content for this kind of 2nd screen usage. For Home Gamers, the competition and social gatherings or parties organized around the program are essential for using the 2nd screen. Finally, Active Followers concentrate on following persons in the program, and their context for the 2nd screen is influenced by multiple media channels in addition to TV.

Viewer types can be roughly compared by concluding that Commentators emphasize social motivations, Analyzers are motivated mainly by information and Home Gamers emphasize entertainment. However, all 2nd screen user types have motivations related to all three aspects: information, entertainment and social aspects.

From the information viewpoint, Commentators are interested in spotting trends and getting conversation topics from funny details in the program. The motivation of communication about impressions of a program, which was pointed out in earlier research as a strongest motivation in case of entertainment programs [9], applies especially in this user category in our study. Analyzers are more interested in accurate information and statistics from the program, while Home Gamers appreciate information related to competitions and quizzes between viewers. Active Followers want to get to know their favorite persons in the program in detail.

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Entertainment is especially important for Home Gamers who look for playfulness and additional activity from 2nd screens. It is also characteristic of Commentators who look for humorous comments and want to keep up-to-date. Analyzers are entertained by the feeling of acquired expertise and correct analysis.

The social motivations of Commentators and Home Gamers focus more on their own social circle, typically people in their own living room. Instead, Analyzers and especially Active Followers are keener on a wider social circle formed by the program viewers. The latter types are also interested in participating in the program through a 2nd screen but the emphasis differs: Analyzers want to contribute to results, while Active Followers want to feel that they are part of the program and live broadcast.

VI. CONCLUSION

A. *Academic Implications*

From an academic point of view, we qualitatively explored a phenomenon of 2nd screen usage to address the lack of published studies. The limited prior research has focused more on the simultaneous use of social media with TV, but our research covered a broader set of 2nd screen activity including a show-specific application with synchronized content. The described viewer types and the motivations that drive their behavior in the context of media use can serve as one viewpoint for further academic debate considering 2nd screens. In addition, our findings contribute to the body of knowledge regarding the wider phenomenon of media multitasking.

B. *Practical Implications*

From a practitioner's point of view, TV broadcasters and application developers can use our results in developing 2nd screen solutions that serve better the needs of different user types. Rich, contextual data helps designers to emphasize the role of service users and gives inspiration for enhancing the user experience of designs. Understanding the different tendencies and habits that viewer types have is necessary in designing and targeting future applications – especially since 2nd screens also provide new possibilities for advertisers. Our results are applicable especially to reality TV, but to some extent also to the entertainment program genre more generally.

C. *Research Limitations and Future Research Directions*

This case study has four limitations. Firstly, it focuses on only one TV show with a limited number of participants that were considered both as followers of the show and active 2nd screen users. The insights of this study help in understanding and targeting different 2nd screen user types, but forming statistically justified design principles or business calculations would require the results to be tested with a larger sample size and quantitative analysis in the future. The future study with more participants also could reveal new viewer categories for example from the late adopters of 2nd screen applications excluded in this study. Secondly, as the program genre, for example, has been suggested to affect the use of 2nd screens [9], the viewer types could be refined and/or compared through a study that would target different genres. Thirdly, although the limitations of data collection methods – e.g. the researchers' influence in participant observation – were narrowed down in this study by using a combination of complementary methods, the results could be validated in the future through a research with different methodological choices like video ethnography. Fourthly, and since TV and media concepts are often international, cross-cultural research would be highly desirable.

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TABLE II. DIFFERENT ROLES OF 2ND SCREEN IN THE VIEWING EXPERIENCE

	Commentator	**Analyzer**	**Home gamer**	**Active follower**
Role of the 2nd screen	social amusement and commenting	support for analysis and anticipation of results	tool for playful competition	following and supporting persons in the program
Key contextual factors for the 2nd screen	other people, social media, different 2nd screens	program content, other viewers' opinions	social gathering / party around the program	different media channels around the persons
Motivation: information	spotting trends, information about various aspects of the program	accurate information and statistics that support analysis	information about points and placement in the game, inside information to support one's guess	background information of personas
Motivation: entertainment	trying out new things, keeping up-to-date, humor	expertise, joy of successful evaluation	playfulness, additional activity	getting closer to persons, feeling of being part of the program
Motivation: social	experience of watching together, using the content as a topic of conversation, using the 2nd screen together	possibility to influence and contribute, curiosity about the opinions of others, analyzing further	competing with others, spending time together, rewards and recognition	participating in live broadcast, feeling of community / fan group around the program

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