Relevance of Existing Viewer Elements in Game Streams

Ajay P Thundathil
Full Sail University

Abstract

Live Game Streams have become the new phenomenon by which people consume entertainment. The elements in a video game stream that showcase the streamer behavior, streamer-viewer interaction, screen/audio composition and general features (Anderson, 2017) together add to the motivation of the viewers to engage in this experience. However, to the knowledge of this study, a high level analysis of the impact of the existing elements in a video game stream has not been done in a systematic manner. This analysis presents the result of a survey that is taken by the viewer community (n = 517) on their opinion of the existing elements (n = 58 elements; streaming behaviors, stream features and other concepts). Each element is presented with the viewer's aggregated ranking of them. Furthermore, this study also performs an analysis of the results to provide insights that can better inform content creators (in this case designers) and platform vendors (such as Twitch, Mixer, YouTube, etc.) about the current direction of designing games with streaming in mind.

Introduction

Currently, millions of people watch others play videogames on a daily basis and these aren't limited to eSports, MOBAs, and MMORPGs anymore (Fruhlinger, 2018). This leads to the inevitable fact that live video game streaming has found its place in the video game industry and is a viable future career for those that wish to provide entertainment through streaming.

The very fact that these live streams are primarily made of the direct viewer-to-streamer-to-viewer communication channel makes it a social experience (Sjoblom, and Hamari, 2016), where the person streaming can interact with his/her viewers through chat, video, and/or more interactive elements through popular platforms such as Twitch (Amazon), YouTube (Google), and Mixer (Microsoft). These elements add tremendously to the motivations of the viewers streaming experience, according to Cheung and Huang's (2011) dissection. In turn, according to their research, Bowman, Weber, Tamborini and Sherry (2013) suggests that the presence of increasing viewers influence the quality of the streamer's performance.

Although quite a bit of research has been conducted by the scientific community to evaluate specific features such as direct interaction with the streaming window as a viewer (Lessel, Vielhauer, and Kruger, 2017), the research has mostly been in the direction to improve the intractability between the viewer and the streamer. A more high level analysis of all elements in general, based on their relevance to the viewers, have not been conducted formally.

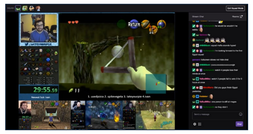


Figure 1. Twitch co-streaming of Legend of Zelda Ocarina of time. (Thieblot, H., 2019)

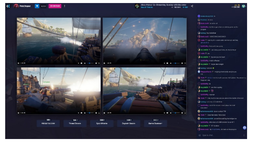


Figure 2. Co-streaming of Sea of Thieves on Mixer. (Levy, N., 2017)

Related Work

A study by Friedlander (2017), analyzed the motivations for people to become a streamer or a viewer of live streams. He found that aside from chatting and sharing information, streamers have varied motivation depending on the streaming platform, such as reaching a specific viewer group on Ustream and hitting the highest likes for a particular game on Twitch.

Related Work (Cont.)

The study by Sjoblom and Hamari (2016) found that the highest motivation for users to consume streams on Twitch is the social factors as the sense of community relates to the number of viewers, subscribers and followers. Other studies have been conducted to inspect specific elements in live streams and see how they are consumed and can be improved. These elements generally are focused on the communication channel (Lessel, Vielhauer, and Kruger, 2017) (Olejniczak, 2015). Given the possible varieties of integrational and interactive components in game streaming, it is important to consider viewer's perspective (broad view).

Present Study – Methodology

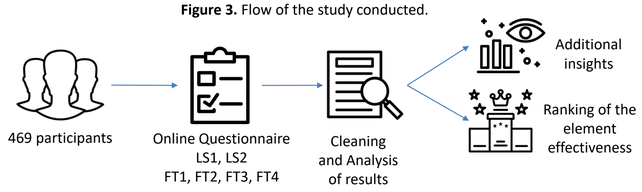
There are two fronts to this study: first, the study presents the ranking of the relevance of existing elements from the perspective of viewers. Second, the study provides insights to both content creators and platform vendors on the efficiency of existing elements and the need to reconsider them.

An online questionnaire was set up with a pre-requisite mentioned at the top stating it was relevant for those that stream occasionally (at least 3 to 5 times in the six months). The study was conducted for the MOBA genre in particular and was put on forums such as Discord servers and Reddit pages of popularly streamed MOBA games namely League of Legends, DoTA2, Vainglory, Smite, Paladins, Heroes of the Storm, and Battlerite. These servers were chosen based on the popularity index for 2019 (GameDesigning.org, 2019).

An initial set of self reported questions was collected to understand how viewers consume the live streams with integrated questions answered on a 4-point Likert Scale (strongly agree, somewhat agree, somewhat disagree and strongly disagree) (LS1). If missing elements were stated, the participants could fill them in the free text question (FT1). Following this, participants were to choose from a set of ten motivations (based on the study of personas in Cheung and Huang, 2011) as to why people consume live streams. Participants were allowed to select multiple choices in this section. Then the participant had to fill in two free text questions, "What elements would you find important in a game stream?" (FT2), "Which elements do you think needs to be better integrated in a stream?" (FT3).

Participants were exposed to 58 elements that were selected based on an informal review of today's major live streaming platforms. They had to fill a Likert scale rating for each of the element based on how interesting do they find in the live streaming context(LS2). There was an option to select if the participant did not know about the element and were then asked to hypothesize how interesting it would be in theory. Participants were given a free text to add elements they thought were interesting, but wasn't asked about in the previous section (FT4). Finally, a free text question for comments (FT5) and demographic questions were asked.

Figure 3. Flow of the study conducted.



Present Study – Results

Participants

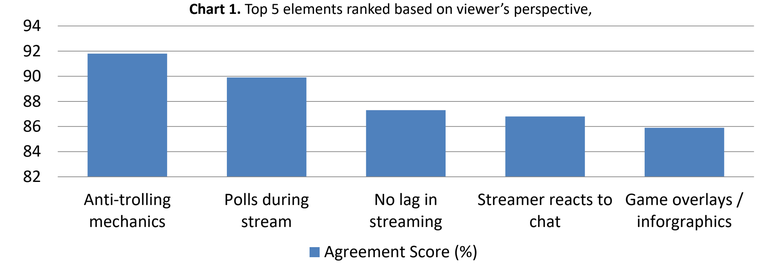
- There were a total of 469 participants that took the questionnaire
- Questionnaire took an average of 21 minutes to fill out. Based on the standard deviation of the completion time, we excluded those that were in a SD < 0.5.
- After the cleaning based on the above criteria, there was 417 clean responses.
- Gender: 257 M, 160 F; Age: < 18: 98, 18-24: 140, 25-31: 127, 32-38: 38, 39-45: 9, None: 5.

Expressiveness of the element set

Considering the ranking of the elements and the answers to other FTs (1-4), these were the main results derived:

- Users were satisfied overall with the existing set of elements in game streams as of today, though most of them requires improvement
- Most of the top related elements pertain to interactivity
- In-game infographics is very important following the interactive elements
- Even in the case of passive viewers, audience integration is highly demanded
- Anti-trolling and past experiences are challenges to be considered in audience integration
- Based on the different motivation personas, viewer perception changes accordingly
- Streamer should have the capability to moderate audience without affecting performance
- Established streaming behaviors should be revisited

Chart 1. Top 5 elements ranked based on viewer's perspective,



Limitations & Future Work

One limitation is that users aren't presented with a visual representation of the elements, so they are required to imagine them based on the textual description which is a potential drawback that the elements might be hard for them to judge *(threat to construct validity - Inadequate Preoperational Explication of Constructs).* Second limitation is that we use the word *Interesting* for how the audience found each element which can mean differently than the intended purpose in certain elements. This adjective was assessed to be the most inclusive than others such as *enjoyable (threat to construct validity - Inadequate Preoperational Explication of Constructs)*. Third limitation is that the population selected might not be representative of the actual population that play MOBA games as the study was taken without selecting the participants *(threat to external validity by people)*.

As for future work, it would be interesting to see how a similar study can be conducted targeting the streamers. Additionally, the findings of this study can be cross-referenced with top live-streams and the contrast can be studied. Another important niche to explore is the viewer types in more depth. Different motivations lead to different classes of viewers which when assessed, will lead to an understanding how they relate to the perception elements.

Contact

Ajay Purushothaman Thundathil
Full Sail University
Email: apthundathil@student.fullsail.edu
Phone: +1 – (321) 274-5256

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13. Icons from Noun Project (Common Creatives)
    1. Participant Icon - https://thenounproject.com/term/participants/75082/
    2. Ranking Icon - https://thenounproject.com/term/ranking/2302659/
    3. Insight Icon - https://thenounproject.com/term/insight/2602114/
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