
It's More than Just Sharing Game Play Videos! Understanding User Motives in Mobile Game Social Media

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Abstract

As mobile gaming has become increasingly popular in recent years, new forms of mobile game social media such as GameDuck that share mobile gameplay videos have emerged. In this work, we set out to understand the user motives of GameDuck by leveraging the Uses and Gratification Theory. We first explore the major motive themes from users' responses (n=138) and generate motivation survey items. We then identify the key motivators by conducting exploratory factor analysis of the survey results (n=354). Finally, we discuss how this new social media relates to existing systems such as Twitch.

Author Keywords

Mobile games; streaming; social media; GameDuck; motivation; media usage;

ACM Classification Keywords

H.1.2 Information Systems: User/Machine Systems; Human Factor

Introduction

As the audience for video gaming content has been exponentially growing, live streaming platforms such as Twitch, YouTube gaming, and Hitbox have become

	Twitch	GameDuck
platform	online site, mobile application	mobile application
topic	all video games	mobile games
content	livesream game play, recorded broadcasts	text, images, recorded game play (non-live)
key feature	channels	channels, teams
topic of channel	game	game, daily life
interaction	live chat	likes, comments and bookmarks

Table 1: Comparison GameDuck with Twitch



Figure 1: Description about overall current status of (a) Video game streaming services (Twitch, YouTube gaming, Hitbox), (b) Social networking services (Facebook, Twitter, Instagram), (c) Mobile streaming services (Meerkat, Periscope, Mirrativ), (d) Gaming communities

hugely popular. These live streaming platforms typically allow game players to stream their console/PC game play and viewers can chat in real-time. Recently, mobile gaming has taken a larger share of the market than PC gaming [5]. Thus, there are also strong needs for additional options for broadcasting mobile gaming activities.

One of the fastest growing mobile game social media is GameDuck—as of 2016, it has reached more than 1 million downloads across 20 countries, including the United States, South Korea, and Germany. GameDuck’s typical audience is Generation Z, born in 1995 or later, who primarily use mobile rather than PC and who communicate by video or movies rather than by text or voice [8]. GameDuck differs from existing live streaming services such as Twitch in that participants share recorded mobile game videos (as well as images), and online communities (e.g., game channels and teams) exist (see Table 1). As described in Figure 1, GameDuck blends distinct mediums, such as mobile devices, gameplay broadcasting, social media, and the gaming community.

In this paper, we aim to understand the usage motives of mobile game social media, GameDuck, by leveraging the Uses and Gratification Theory (UGT) that explains how and why of media usage. We first explore the major themes of user motives from users’ responses ($n=138$) to generate survey items. We then administer the generated survey questionnaire and perform exploratory factor analysis of the survey results ($n=354$) to identify the key motivators. Finally, we discussed how the motivators of GameDuck relate to those of conventional platforms such as Twitch.

Related Work

Prior studies often used the Uses and Gratification Theory (UGT) to analyze user motives of new media because UGT provides a useful conceptual framework for explaining the ‘how and why’ of media use [6]. Usage motives of various kinds of new media were analyzed in the past. Joinson [3] studied the motives and uses of the social networking site Facebook, and found seven unique uses and gratifications: social connection, shared identities, photographs, content, social investigation, social network surfing, and status updating. Ko et al. [4] explored the key motives of online chatting in social sports TV, including sharing feelings/thoughts, entertainment, sharing information, and membership. Hamari and Sjöblom [2] investigated why people watch eSports on the internet by constructing the Motivations Scale for Sports Consumption (MSSC), which comprises escape, acquisition of knowledge, player skills, social interaction, and enjoyment of aggression. Several studies investigated game broadcasting services. Sjöblom and Hamari [7] studied the major motivators of viewers on the video game streaming platform Twitch, namely cognitive, affective, personal integrative, social integrative and tension release. In contrast, Bründl and Hess [1] examined the major motivators of broadcasters on Twitch. They found that content contribution is not only influenced by individual motives (enjoyment, self-expression and identity, information dissemination, and monetary incentives), but also by a broadcaster’s social capital (social interaction ties, commitment, and shared vision). GameDuck is a new social media on mobile gameplay videos, which is very different from Twitch and YouTube gaming. We aim to uncover major usage motives of both producers and

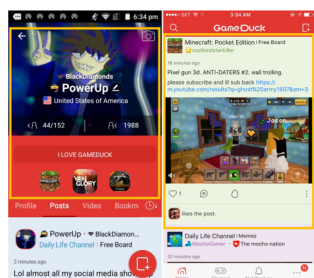


Figure 2: (a) User profile, (b) Posts from following users are shown in timeline

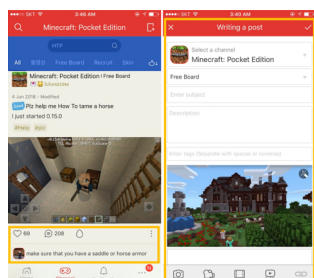


Figure 3: (a) Likes and comment on a post, (b) Creating post

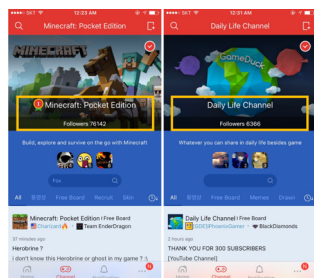


Figure 4: (a) Game channel, (b) Daily life Channel

consumers in GameDuck and analyze how they differ from those of traditional online broadcasting media.

Service Usage: GameDuck

GameDuck is a social media application that allows mobile gamers to upload content, socialize, and share advice. The key features of GameDuck are screen recording and editing. It allows the user to easily record and edit their game play videos and upload them opposed to live streaming.

Gameduck has many similarities with other social media services in that users are able to create a profile and follow each other. Users can express themselves by nickname, nationality, favorite games, and badges (Figure 2a) in a profile. They can earn badges from various GameDuck quests. In addition, users can receive feeds on other users they are interested in by following them (Figure 2b). In GameDuck, people express themselves, interact with one another, and share opinions by creating posts and using social features: Likes, Comments, and Bookmarks (Figure 3a). Users can create a post with text, images, and their recordings (Figure 3b).

GameDuck has specialized forums for talking about specific topics, similar to online communities. They are called channels. In game channels, users can talk about topics that are related to a specific game (Figure 4a). If a user wants to post something about Minecraft: Pocket Edition, he/she creates the post in the Minecraft: Pocket Edition channel only. Users can post about something other than games on the Daily Life Channel (Figure 4b). They are able to create a post about anything they want such as memes, fan art, cartoons,

and more in that channel. If users follow a channel, the posts from that channel will be shown in their timeline.

Another interesting feature of GameDuck is the Team feature that is helpful for making friends. By creating or joining a team, users are able to read posts from their team members (Figure 5a). It is easy for users to see what their team members are doing all in one place. Team Talk is a feature for talking exclusively with the members of a team. All of the teams are ranked based on the activeness (creating posts, the number of likes, comments, etc.) of their team members (Figure 5b).

Methodology

This study was conducted in a two-stage process guided by similar research if identifying motives grounded in the UGT framework [3]. The first stage was an exploratory study to determine users' motives through soliciting answers in a free-text format survey. Survey items were generated based on the significant motives that emerged from collaborative content analysis of user responses. In the second stage, a large-scale survey was conducted and followed by an exploratory factor analysis that grouped relevant survey items in order to derive statistically significant motives.

Exploratory Study

Participants and Survey Content

Participants were 138 GameDuck users who responded to a request to complete a short online survey. The sample comprised 76 males and 62 females (Mean age = 13 years). Participants were recruited through a post to the "event board" on GameDuck. The survey was open from November 18 to 22, 2016. The participants

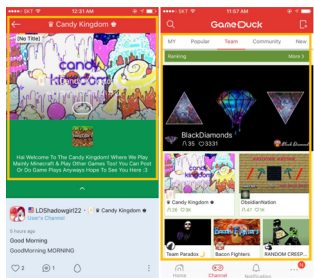


Figure 5: (a) Team, (b) Team ranking

Videos (137 mentions)
"uploading video"
"recording video"
Enjoyment (72 mentions)
"entertaining"
"interesting"
Communication & Interaction (42 mentions)
"communicate with other users"
"new comments for my post"
Game Information Sharing (39 mentions)
"game SNS"
"game tips"
Content (Posts & Drawing) (27 mentions)
"sharing posts"
"viewing drawings"
Community (21 mentions)
"the wonderful community"
"team members"
Rewards (12 mentions)
"badges"
"eggs"
Recognition (11 mentions)
"recognition of game skills"
"recognition of drawing skills"
Want to be... (8 mentions)
"want to be famous"
"want to be a creator"
Friendship (7 mentions)
"the friendly environment"
"friendship"

Table 2: Main Motive Themes

were compensated with 300 eggs¹. The online survey contained basic demographic questions (e.g., age, gender, occupation) as well as open-ended questions that probed usage motives. The participants were asked to respond to the following questions adapted from [3] in a free-text format.

- What is the first thing that comes to mind when you think about what you enjoy most on GameDuck?
- What other words describe what you enjoy about GameDuck?
- Using single, easy-to-understand terms, what do you use GameDuck for?
- What uses of GameDuck are most important to you?

Analysis Results

An affinity diagramming process was carried out by two raters collaboratively extracting keywords from the participants’ responses in the explorative study, and grouping them into representative themes. After several iterations of this process ten key themes outlined in Table 2 emerged.

Scale Development to Measure Motives

Participants and Survey Content

Participants were 354 GameDuck users recruited using the same methods outlined in Study 1. Participants were 223 males (54.2%) and 131 females (45.8%) (mean age = 14.55 years (SD = 5.2, range 9-49 years old). The survey was open from December 9 to 19, 2016. Fifty randomly selected participants were

¹ Users can collect one free egg daily from the GameDuck farm at the egg page. They can share eggs with their friends or exchange them for useful stuff.

compensated with a gift voucher worth USD \$5. The questionnaire comprised two parts. First, we asked the participants to respond to a motive survey (which included 52 items on a 7-point Likert scale). These items were based on the motives found in the explorative study. The words and phrases in the items were drawn primarily from the original responses. Second, we asked participants to answer demographic questions and other general GameDuck usage information.

Factor Analysis Results

We conducted an exploratory factor analysis on the second survey responses with 52 questions about motives. The analysis (principal component analysis with varimax rotation) extracted 10 components with Eigenvalues over 0.9, which explained 69.7% of the variance. To identify the key items for each component, we eliminated 12 items with a lower factor loading value, which did not significantly affect the reliability of the factor: six were related to community, two pertained to user friendships, three were about communication and interaction with others, and one was about posting video on GameDuck. Two items related to ‘want to be’ (want to be famous or a creator) did not load on any components. As described in Table 3, we named each component based on the selected items, as follows: community interaction (seven items), social recognition (six items), sharing game information (five items), posting and viewing (five items), friendship (three items), sharing artistic skills (three items), enjoyment (three items), community ranking (two items), video production (two items), and rewards (two items).

Enjoyment scored the highest rating by the participants ($M = 6.06$, $SD = 1.24$) followed by social recognition ($M = 5.85$, $SD = 1.48$). Many participants gave a relatively high rating to the friendship motive ($M = 5.78$, $SD = 1.45$). This was followed by posting and viewing with ($M = 5.65$, $SD = 1.45$). Sharing game information was rated fifth with ($M = 5.60$, $SD = 1.51$). Community interaction was the sixth highest rating by the participants ($M = 5.39$, $SD = 1.64$). Video production was rated ($M = 5.37$, $SD = 1.70$). Sharing artistic skills scored eighth with ($M = 5.34$, $SD = 1.83$). Rewards ($M = 5.28$, $SD = 1.77$) was ranked second lowest and

community ranking ($M = 4.20$, $SD = 2.05$) was ranked lowest by participants.

Discussion

Factor 3 (sharing game information) and Factor 7 (enjoyment) were also found in Twitch and eSports [1, 2, 7]. Factor 7 (enjoyment) scored the highest rating by the participants as in online chatting in sports viewing [4]. Factor 2 (social recognition) is also related to previous studies [1, 7] on user motives in that they want to be recognized by others and to self-express their identities. Factor 2 was rated as second highest, indicating that many people are motivated by the

Items	Mean (SD)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Community Interaction (7 items, $\alpha = 0.908$)	5.39 (1.64)										
I like communicating with my GameDuck team members.	5.71 (1.51)	0.765									
I enjoy interacting with other members of my Team.	5.57 (1.62)	0.756									
I care about members of the Team in GameDuck that I am a member of.	5.36 (1.66)	0.722									
On GameDuck, being a member of a Team is important to me.	5.28 (1.74)	0.678									
I like to chat with my team members using TeamTalk.	5.31 (1.69)	0.675									
I enjoy creating and managing a Team on GameDuck.	5.09 (1.66)	0.601									
I like to chat with other GameDuck users by sending them private messages.	5.43 (1.55)	0.509									
Social recognition (6 items, $\alpha = 0.886$)	5.85 (1.48)										
I feel good when my posts prove to other GameDuck users that I have skills about the game being played.	5.87 (1.45)		0.687								
I want to know how other GameDuck users respond to my posts and comments.	5.97 (1.41)		0.667								
I like it when other GameDuck users like my posts.	6.15 (1.21)		0.655								
I want my User Channel to have followers as large as possible.	5.76 (1.60)		0.652								
I like it when other users take my comments into consideration.	5.61 (1.52)		0.62								
I want to have a fan base on GameDuck.	6.74 (1.61)		0.578								
Sharing Game Information (5 items, $\alpha = 0.856$)	5.60 (1.51)										
Using GameDuck, I am better informed about new game strategies and tips.	5.65 (1.47)			0.794							
Using GameDuck, I can share pros and cons of new games.	5.40 (1.60)			0.725							
Using GameDuck, I can share information about different games.	5.83 (1.37)			0.71							
Using GameDuck, I can share my game skills.	5.59 (1.44)			0.682							
Using GameDuck, I am better informed about new games I am considering to play.	5.53 (1.65)			0.569							
Posting and Viewing (5 items, $\alpha = 0.854$)	5.65 (1.45)										
I like viewing other GameDuck users' posts.	5.79 (1.34)				0.657						
I like reading other users' comments on various posts on GameDuck.	5.90 (1.38)				0.627						
I like commenting on other GameDuck users' posts.	5.31 (1.55)				0.605						
I like to watch other GameDuck users' video posting on GameDuck.	5.48 (1.47)				0.581						
I like creating posts on GameDuck.	5.75 (1.36)				0.536						
Friendship (3 items, $\alpha = 0.869$)	5.78 (1.45)										
I want to meet new people on GameDuck.	5.83 (1.39)					0.706					
I want to make friends on GameDuck.	5.80 (1.44)					0.641					
It is very important for me to maintain friendship with other GameDuck users.	5.70 (1.53)					0.565					
Sharing artistic skills (3 items, $\alpha = 0.807$)	5.34 (1.83)										
I like posting drawing (fanart, cartoon, skin) on GameDuck.	4.97 (1.92)						0.74				
I feel good when other GameDuck users recognize my drawing (fanart, cartoon, skin).	5.58 (1.72)						0.699				
I like viewing other GameDuck users' drawing (fanart, cartoon, skin) on GameDuck.	5.48 (1.80)						0.566				
Enjoyment (3 items, $\alpha = 0.873$)	6.06 (1.24)										
I have fun using GameDuck.	6.18 (1.19)							0.694			
Using GameDuck is entertaining.	6.22 (1.07)							0.678			
Using GameDuck is exciting.	5.79 (1.40)							0.614			
Community Ranking (2 items, $\alpha = 0.759$)	4.20 (2.05)										
I care about the rankings of the Channels I follow.	4.28 (2.06)								0.826		
I care about the ranking of the Team that I am member of.	4.19 (2.04)								0.794		
Video Production (2 items, $\alpha = 0.735$)	5.37 (1.70)										
I like to record my game play using GameDuck.	5.60 (1.60)									0.642	
I like to edit my game play videos using GameDuck.	5.13 (1.76)									0.558	
Rewards (2 items, $\alpha = 0.742$)	5.28 (1.77)										
I like to earn Eggs on GameDuck.	5.25 (1.81)										0.761
I want to earn achievement badges on GameDuck.	5.32 (1.73)										0.557

Table 3: Factor analysis results (Degree of darkness implies the rating of the factor)

positive feedback they receive from others. In addition, Factor 4 (posting and viewing) and Factor 6 (sharing artistic skills) associate with the usual “content gratification” identified in conventional social media [3]—these include items related to user-generated contents such as posts, comments, videos and artwork (e.g., drawings). Interestingly, Factor 1 (community interaction) contains the items related to the Team, which is the key feature that differentiates GameDuck from other services. The Team feature helps members to establish stronger ties with a small number of people online and to have private chats among members through the TeamTalk. Factor 5 (friendship) was similar to motives of companionship and social interaction ties as in previous studies [1, 7]. Note that we label this factor as “friendship” as it was mostly mentioned by the participants in the exploratory study rather than “relationship” used in the other studies. This factor scored the third highest rating by the participants.

Factor 8 (community ranking), Factor 9 (video production), and Factor 10 (rewards) contained items related to features only GameDuck possesses such as video recording and editing, a ranking system for teams and channels, and eggs. However, Factor 10 (rewards) were rated relatively low as opposed to other factors such as enjoyment and social recognition. It appears that users seem to find satisfaction in being recognized, receiving ‘Likes’ and having a large following. This explains why social recognition was rated higher than rewards. Factor 8 (community ranking) was rated lowest, implying that users care more about the quality of the interactions they have within their communities than how high those communities are ranked.

As with most single-application work, the generalizability of this work is limited. While GameDuck is a global service, we collected survey responses from only Korean population to control cultural diversity. There should be follow-up studies to investigate whether our findings hold across different cultures. In addition, further work should consider how user motives are related with the context of GameDuck use and actual usage patterns.

Conclusion

GameDuck is an emerging social media that combines mobile gaming and social sharing as an alternative to traditional console/PC-based gameplay broadcasting services such as Twitch. Our work aimed to identify the usage motives of GameDuck users by leveraging the UGT framework. Our exploratory factor analysis revealed ten motives for using GameDuck, namely community interaction, social recognition, game information sharing, posting and viewing, friendship, artistic skill sharing, enjoyment, community ranking, video production, and rewards. While most motives concur with conventional services, GameDuck’s unique features of online community and multi-modal posting (images and videos) served as foundations of other motivators such as friendship and artistic skill sharing.

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