HOW MUSIC FANS SHAPE COMMERCIAL MUSIC SERVICES: A CASE STUDY OF BTS AND ARMY

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ABSTRACT

Much of the existing research on user aspects in the music information retrieval field tends to focus on general user needs or behavior related to music information seeking, music listening and sharing, or other use of commercial music services. However, we have a limited understanding of the personal and social contexts of music fans who enthusiastically support musicians and are often avid users of commercial music services. In this study, we aim to better understand the contextual complexities surrounding music fans through a case study of the group BTS and its fan community, ARMY. In particular, we are interested in discovering factors that influence the interactions of music fans with music services, especially in the current environment where the prevalence of social media and other tools/technologies influences musical enjoyment. Through virtual ethnography and content analysis, we identified four factors that affect music fans' interactions with commercial music services: 1) perception of music genres, 2) participatory fandom, 3) desire for agency and transparency, and 4) importance of non-musical factors. The discussion of each aspect is followed by design implications for commercial music services to consider.

1. INTRODUCTION

Understanding users' motivations, needs, and behavior related to music is fundamental in designing commercial music services that will be well-received by users. Since the early 2000s, a steady stream of user studies has been conducted in the field of music information retrieval (MIR) [1]. These studies have investigated a variety of user aspects, such as their information needs and searching behavior [2], perception of music genres and moods [3], [4], and social music behavior [5], [6]. Some of these studies have focused on improving our understanding of MIR issues related to specific populations, such as youth [7], music creators [8], members of certain cultures [9], or people who use streaming, cloud, or recommender services [6], [10], [11].

One user group that has not been studied much in past MIR user studies are music fans. The term "fan," as an abbreviation for "fanatic," first appeared in a religious context in late 17th-century England, and became significant in the United States as it started to be used to describe passionate sports enthusiasts and later "dedicated audiences

for film and recorded music" [12, p.28]. Understanding what motivates and influences fans' behavior is important since they are often avid users of systems and services designed to provide access to media. Their digital touchpoints subsequently shape the design of these systems and services. While much of the current research involving user elements investigates user interactions with MIR systems and services, such as their usage of music and playlists [6], [10], [13], fewer works explore users more holistically or the characteristics of unique user groups. This work aims to fill this gap by 1) investigating the contextual factors that influence users' engagement with music services, and 2) attending more closely to music fans as an important subset of users. We conducted an empirical study of music fans to reveal the underlying motivations and reasons explaining why we see certain user behavior in commercial music services. The particular case we examined was a fandom called ARMY, consisting of supporters of the music group BTS and considered to be one of the largest pop music fandoms today [14]. BTS ARMY is an excellent case to study not only due to the sheer size of the fandom, but also because of its diversity and impact. ARMY is known to be an extremely dedicated fan base that actively participates in numerous initiatives to support BTS and relevant causes globally [15], [16].

In this paper, we aim to answer the following research questions: What does the case of BTS and ARMY tell us about the current landscape of music fans, specifically related to how they interact with commercial music services? Subsequently, what are the implications for designing and providing commercial music services for these fans?

2. RELATED WORK

2.1 Music Fans and Participatory Culture

Over the past two decades, user studies in MIR have shown that the way users interact with music has significantly changed. During this time, a majority of users moved from sharing actual music files and listening to personal collections to using streaming or subscription-based models and sharing YouTube links and music metadata [10]. Additionally, social media has become an important venue for people to share and discuss music [11]. These cultural and technological shifts have changed the ways people consume, create, and share music [17], and have altered the role of music users from passive listeners to more active participants, indicative of a larger trend in media use [18], [19]. Recent MIR user studies point out that users are not merely consumers of music but also shapers of music services. For instance, Lee and Price [20] observe that music users are getting increasingly savvy about the tools and

technologies available to them—rather than using only a single platform, music users very intentionally choose particular platforms that work well for specific purposes [10]. Contextual factors, sometimes unrelated to music itself, were also found to influence people's interaction with music services, such as their decisions about whether to listen to music recommendations [21]. These factors, of course, included reasons such as convenience or being in the mood to listen to recommendations, but interestingly, they also related to personal values. For instance, researchers learned that some participants actively "refused" to listen to certain songs based on how well their personal values aligned with those of the artist or their perception of the artist's ethical stance [21]. These findings imply the complexity of users' engagement with music services: they are often motivated by contextual factors going beyond preference for music based on musical attributes. In addition, many users have embraced participatory culture and contribute user-generated content related to music on social media, especially streaming venues like YouTube [22].

Music fans are at the center of this technological and cultural landscape and often drive trends taken up by other music users. Jenkins [18] discusses how in "convergence culture," fans play a central role in how culture operates, demonstrating the influence of an active audience in contemporary popular culture. While fandom suffered from stigma in earlier media studies, participatory culture has now become central in understanding fans and fan-based online communities in popular culture [18]. Users actively engage in online communities, produce creative works, and develop new knowledge [23], especially in the context of games [24], [25] and YouTube [26], [27]. Researchers also started investigating the participatory nature of user involvement related to music in certain contexts. For instance, Waldron [28] discusses how user-generated content in YouTube is used for music learning and teaching in online participatory communities. Schneider [22] uses qualitative media analysis to examine audience engagement with music videos on YouTube.

While it is important to understand how fans interact with music in commercial music services, it is also critical to consider the broader context in which users are situated to understand what factors may impact how they engage with commercial music services. Jenkins [23, p.7] emphasizes various aspects such as "the social, cultural, legal, political and economic institutions, practices, and protocols" that shape the communication technologies in media systems.

2.2 BTS and ARMY

Before Korean pop (Kpop) music became a global sensation, the Korean Wave, also known as "Hallyu," popularized Korean culture in media channels such as television dramas and digital games [15]. As it emerged alongside social media, Hallyu was able to reach audiences beyond East Asia including Latin America, Europe, and North America [29], [30]. While Hallyu became popular through various mediums, one of the driving forces behind its success is Kpop [15]. Artists such as Psy and BTS have collectively gained billions of views on YouTube, bringing Hallyu music fandom to North America.

BTS is a South Korean band with seven male musicians, managed by their entertainment agency, Big Hit, since June 2013. The abbreviation stands for "Bangtan Sonyeondan" or "Bulletproof Boy Scouts," which depicts the challenges that the younger generations face in modern social life [31]. A large part of BTS's success is its high engagement with fans on social media where band members share visual stories of their lives, aesthetic preferences, and commentary on their work. Tweets, Instagram posts, and other social media updates also enable fans from all over the world to connect with the band members [15].

Additionally, BTS engages with global campaigns to digitally connect with youth culture around the world. In November 2017, BTS launched a two-year anti-violence campaign called "Love Myself" in partnership with UNICEF that raised over $2,000,000 (USD) [32]. In 2018, the band delivered a speech at the United Nations General Assembly in New York to launch the "Generation Unlimited," a global partnership of UNICEF [32].

BTS's popularity has reached a global scale thanks to the unity of its fandom, ARMY, which has bonded through the band members' story of growth, authenticity, and determination to pursue musical careers. The influence of ARMY is massive in its own right [16], [33]. When the band's scheduled tour was cancelled in Korea due to COVID-19, ARMY followed the lead of one BTS member, Suga, by donating their refunds to disaster relief organization Hope Bridge—amounting to over $300,000 in just a few days [34]. In another instance, after ARMY learned that BTS and Big Hit Entertainment donated $1,000,000 to support Black Lives Matter, they organized a campaign to match the donation and raised another million dollars in a little over 24 hours [35]. The campaign is still ongoing on the One In An Army website (https://www.oneinanarmy.org/), along with many other campaigns for social good across the globe. These are just a few of numerous examples illustrating the power and impact the fandom has.

3. STUDY DESIGN AND METHODS

We employed a multimethod approach of virtual ethnography and content analysis. While traditional ethnography focuses on observing the interactions among individuals situated in a particular setting, as technologically mediated communications and online communities become ubiquitous, virtual ethnography is becoming increasingly common [36], [37]. Virtual ethnography explores social interactions taking place in virtual environments and emphasizes the immersion of the researcher in the setting for extended periods of time for a holistic understanding of the culture [38]. Beneito-Montagut [36] points out that applying physical boundaries in the context of the Internet during virtual ethnography provides limited understanding of everyday life in the Internet, as the various intersections between different sites are lost. For this reason, the researchers chose to examine multiple online websites and venues, including a swath of social media (such as Twitter, Facebook, Instagram, Reddit, and TikTok), YouTube, Daum BTS fan café, which used to be the official fan community, and Weverse, the current official channel for in-

teractions between BTS and ARMY. The first author observed the interactions among the fans for approximately a year from April 13, 2019, to March 30, 2020. During this phase, the researcher generated field notes documenting reflections and questions, while being cautious to minimize bias in collecting and interpreting the data.

In order to complement the ethnographic approach, the researchers also collected user data from Twitter and a subreddit, r/Bangtan. A total of 3,195 recent tweets (the maximum number allowed in the API policy) were pulled from the bts_twt timeline on Twitter. The tweets, along with the field notes generated from the observation phase, informed some of the prominent themes to be further investigated (e.g., streaming, radio play, award, donation). Additionally, discussion threads were scraped from r/Bangtan, and the second author, taking a deductive approach [39], qualitatively examined and coded the data into categories representing prominent themes identified in the observation phase. Here, we present selected user quotes that are helpful for discussing four aspects that commercial music services should consider to better cater to music fans.

This research investigates a single case study of BTS and its fandom, ARMY, to examine the current landscape of the music listening environment and the role of music fans in shaping it. Yin [40] describes a case study as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 18). Single case studies and multiple case studies have their own merits. While studying multiple cases may help with generalizing the data, delving deeply into a single case can provide a richer understanding of the context that is being studied. In this paper, we selectively chose to study the case of BTS and ARMY for two reasons. First, BTS/ARMY is a unique case because it demonstrates an exemplary manifestation of the fandom phenomenon—ARMY could be seen as an outstanding success as it is often characterized as the most powerful, dedicated, and organized fandom in the world [14], [41]. Second, BTS/ARMY presents a longitudinal case where a single case is examined across time to demonstrate how situations and processes change. In-depth observation of user interactions over an extended period of time and examination of artifacts on various media channels enabled the researchers to have a better understanding of how ARMY might react to certain situations due to historical reasons. The case overall serves as an excellent candidate to examine the complexity of the user's context, which affects how fans engage with commercial music services.

4. FINDINGS AND DISCUSSION

4.1 Perception of Music Genres

Kpop is a prime example of how the boundaries of music genres are becoming increasingly blurry. The hybridity of Kpop music has been noted in prior research [15] and discussed in relation to the popularity of "idol" groups, often strategically created to consist of members with different musical strengths [42]. As a result, the music they produce tends to have elements accentuating the diverse strengths of the members, embodying a fusion of multiple music styles [42]. This is also true in the case of BTS—in a recent interview about its latest album, *Map of the Soul: 7*, one BTS member actually stated that "the genre is BTS," and "it's less and less meaningful to divide music into genres now" [43]. Fans on the BTS subreddit also discuss this genre issue, as shown in the following quotes:

""bts is the genre" wasn't them saying they're not kpop, they were saying that their music is diverse and that putting it into a box is pointless."

*"I love how he tried to highlight artistry and talent instead of focusing on artificial (and unrealistic) plastic subgenres like kpop. I am one of those firm believers that kpop (much like *pop*) is not a music genre but an industry with specific practices."*

Beyond discussing the specific label "Kpop," which is already problematic given that it often refers to all music originating from Korea regardless of style, users also recognize the limitation of genre labels in general. They comment on the difficulty of applying one set of genre labels, commonly used in a certain culture, to all music.

"Yoongi [one of the BTS members] *said stop limiting south korea to a single genre when genre itself is meaningless as music continues to mix and evolve and we love to see it. Let's appreciate the artist no matter the genre!"*

"I don't know of one western equivalent in terms of the genre since BTS has a lot of different styles to their music."

Considering the wide range of artists who collaborate with BTS makes the band's music further challenging to label. For instance, its recent collaborators have ranged from vocalists such as Zara Larsson and Halsey to rappers like Desiigner and Nicki Minaj, who have very different music styles.

While BTS well exemplifies how different music genres and styles can be successfully mashed up to create hybrid music styles, this trend is also becoming increasingly popular among other Kpop groups and genres of music. Hybridity, fueled by increasing global collaboration among musicians and producers around the world, is becoming more prevalent in the music industry in general. "Genres have blended together so completely and seamlessly" that it is "almost impossible to label a lot of popular music as any one thing" [44].

Design Implication: Think of alternative means to show the connections of music, rather than relying on music genres, especially genres represented in a hierarchical structure.

For MIR researchers and designers of commercial music services, the blurred boundaries of genres raise an interesting question about how to best categorize music to support and improve users' access and discovery. The limitation of genre labels has been noted in previous MIR user research, especially with regards to users' perception of genres and the lack of consistency in their description in

cross-cultural contexts [42]. The trend of hybrid genres supports the importance of exploring other metadata elements that can be used to organize music, such as mood and suitable contexts (e.g., accompanying activities, users' biological rhythm). It also highlights the limitation of a hierarchical structure in organizing music, as it becomes increasingly difficult to find a single appropriate category for these kinds of music in a tree-like structure. Rather, a faceted approach may be more suitable, in which different musical styles can be described as a collection of organized tags, which avoids the pitfall of having to categorize the music with one *correct* label. In addition, a network-based approach (such as MusicLynx (http://www.semanticaudio.ac.uk/demonstrators/16-musicweb/) or Mora-Mcginity et al. [45]) could also complement a more traditional hierarchical organizational structure, as networks can represent the relationships and influences among artists that are often meaningful to the music fans. For instance, mapping the influences between BTS and other music groups based on their collaboration would probably generate a more interesting social network for users to explore than simply categorizing the music as Kpop.

4.2 Participatory Fandom

Our observation of fan activities on social media showed that fans engage in a wide variety of activities in addition to simply listening to and enjoying music from the artists they support. These additional activities include not only appreciating non-music content related to the artists (such as documentary films or books), but also interacting with the artists and other fans through social media and offline events. For example, a substantial number of user-generated videos, featuring reactions, theory (analytical videos examining music videos or lyrics), cover dances, unboxing, lyrics, and remixing, are regularly uploaded to YouTube [16], [46]. Many fans also donate a significant amount of time and resources to helping other fans or supporting various causes that the artists support [16]. For instance, much of the BTS content is translated by fans who volunteer their time—the massive followings on translation team and individual accounts on Twitter (e.g., @BTS_Trans with 1.5 million followers; @btstranslation7 with 340,700; @doolsetbangtan with 316,600; and many more) demonstrate their impact. Yoon [46] discusses how youths took on these roles as cultural translators and how they engage transnationally with digital media.

ARMY also showcases how to effectively use social media for participatory fandom, including Twitter, Facebook, Vlive, Reddit, etc. [46]. The various streaming, donation, and hashtag campaigns in which fans participate require them to utilize these apps and services to organize. While there is an app called Weverse, established by Big Hit as the official communication channel for BTS and fans, due to the volume of daily posts and the lack of organization, it is not an effective venue for systematically organizing these efforts. Instead, it primarily serves as a venue where the artists can directly communicate with fans by sharing posts and responding to fans' posts.

While globally there is no central coordinating organization within ARMY, the fan group is still extremely successful in coordinating to support the artists despite its loose structure—for instance, there are various accounts that provide streaming guides (e.g., @AllForARMY, @BTS_graphs, @BTS_Billboard, @ARMY52Hz) that recommend strategically curated streaming lists in specific music streaming services to enhance the band's rankings in various charts [15], [16]. The big BTS Fan Twitter accounts (Twitter accounts with a lot of followers) often follow these streaming guide accounts and retweet these messages so they can quickly and efficiently reach a large number of fans. Lee [16] and Lee [33] also discuss in depth how international ARMY, coordinating its efforts on Twitter and other social media, worked systematically to translate and distribute BTS content to get BTS to debut on US radio and television by providing ARMY members with instructions for requesting BTS's songs and actions to take if a request is rejected.

Sometimes fans actively use commercial music services to make a statement—in the case of BTS, when the People's Choice Awards awarded another band Group of 2019, Music Video of 2019, and Concert of 2019 despite BTS receiving the largest number of Twitter votes in all three categories (according to data collected and tracked by accounts like @ResearchBTS), fans protested by banding together on social media and re-charting BTS's entire discography (20 albums including solo mixtapes and two Japanese repackage albums) in iTunes in less than 24 hours [47]. This happened again when BTS did not receive any Grammy nominations despite having a huge success with its *Persona: Map of the Soul* album in 2019, with the hashtag #ThisIsBTS trending in Twitter [48]. The purpose of these organized movements is partly to show support and appreciation for the artists, but also to express listeners' discontent and disapproval of outdated customs and systems, such as the management of music awards.

Design Implication: Consider ways to promote artist and fan interactions in a two-way communication model and features that can support fans' activities to achieve group goals.

The active, participatory nature of fans should prompt designers of commercial music services to think about features they might employ to support fans' activities and maintain strong communities. One idea might be to explore features within commercial music services where fans and artists can have interactions. While existing social media platforms already offer venues for artist-fan interactions and community discussions, commercial music services can offer other unique types of interactions. For instance, Spotify for Artists allows artists to put together and share their own playlist through their profile page. This enables fans to feel closer to artists they like, as they can better understand artists' tastes and know what they are currently listening to. Furthermore, this feature has an additional benefit of encouraging listeners to venture out of their typical music realm and discover new songs and artists, as prior research suggests people tend to be more receptive to music recommendations coming from people who are experts or those they trust to have good music taste [21]. One suggestion is to expand this feature by turning it into a two-way interaction, in which fans can also suggest

music to artists. We observed that this occasionally happens in social media such as Twitter or Weverse, especially when fans want the artist to collaborate with another artist. A voting mechanism could be implemented so that fans could collectively put together a playlist for the artists, which would increase user engagement and provide a sense of bonding. Another idea is to consider features that better support group activities among fans. While sharing music and playlists is already a feature in many commercial music services, tweaking these features so that they can support group goals may appeal to fans. For instance, the streaming guide account's use of playlists is unique compared with other use scenarios in that the goal is not to enable group members to collaboratively create or modify the queue. Rather, it is to effectively distribute a specific playlist—created by a small team of users—that has been deemed most efficient to support the artists. Gifting music or codes for streaming to fans who cannot afford access to music also frequently occurs within the fan community, which can potentially be supported in commercial music services.

4.3 Desire for Agency and Transparency

During our observation of ARMY's interactions in online communities and our examination of tweets and reddit posts, we noticed a strong desire among users to have more agency in how they interact with music. For many BTS fans, the act of streaming is not only to simply listen to and enjoy music but also to strategically support the artist. As discussed above, sometimes streaming can also be an act of resistance against the existing social structure and systems that fans feel are unjust. These fans' selection of music services is often driven by their desire to maximize the impact of their streaming on the rankings of artists' albums in various charts.

A recent event that well illustrates this desire for agency among fans concerns the lack of radio play BTS received in Western radio stations after the release of its latest album, *Map of the Soul: 7*. Despite the group's past success in album sales, sold-out stadium tours worldwide, and participation in various promotional events in the US organized by radio stations, BTS received almost no radio play for its latest album [49], [50]. This led to many fans speculating why, resulting in discussion of multiple factors including payola (the illegal practice of payment from record companies in exchange for more radio exposure for their artists, discussed extensively in Leight [51]), DJs' perception that ARMY consists exclusively of teenage girls, the public's perception of BTS as "foreign" artists, and xenophobia [49], [50]. While we do not have space for a full discussion of all of these factors here, what is clear is that many fans expressed frustration and actively boycotted radio, opting to use music streaming services as a result. Many believed that their participation would matter and that they would have more control over how they interacted with music on streaming services, as opposed to radio, in which gatekeepers control what is played. Fans on Bangtan subreddit share:

"Ugh it's 2020. Traditional radio just needs to die and make way for streaming. I know radio matters for charting and GP exposure, etc but ever since we proved BTS can chart well without it, the tiny bit of interest I have in it has all but evaporated. If anything, I would rather they continue to succeed without it. Especially if getting on radio still means they have to play their ridiculous games (interviews, payola)."

"People in radio here who don't play BTS, that's why I use Spotify AND buy BTS albums. Living in the past, these radio people are. That's what Freddie Mercurys "Radio Gaga" was about. Barely anything has changed. Look, most of the world, their first language isn't English anyway. You know? Thanks to internet, people are waking up. These people in the industry continuing to sleep screams hello, boomer. They do their thing, I'll continue to support BTS."

"why is radio so important still in terms of charting, i feel my generation doesn't even listen to it in the car or whatever, we all just use our spotify etc. bc it's more personalized playlist and u don't have to sit thru annoying ads every 2 or 3 songs."

Hertweck [50] points out that "streaming's prevalence creates an avenue to success in the music industry, and artists are no longer required to rely on Big Radio to reach mainstream." In addition to streaming services' access and convenience, the desire for user agency is a critical reason why certain streaming services have become increasingly relevant and supported by users. Fans are now much more aware of potential issues that traditional media carry due to abundant information shared on social media. Furthermore, listeners now have a legitimate alternative option to support their artists and still make the impact they want by focusing "efforts on streaming and purchasing digital/physical albums to make sure that BTS charts well" [49]. Indeed, BTS's latest album debuted as number one in the US Billboard 200, with the lead single "On" debuting at number four on the Billboard Hot 100 even with almost no radio play [52]. Some fans, however, noted that Billboard also potentially made mistakes in its calculation and wanted clarification on how it arrived at the final numbers. Transparency is extremely important for these fans, as shown in the following tweets:

"I think the ranking of no. 4 is amazing, but the calculation seems very suspect. At very least, Billboard should clarify how it arrived at those numbers because they are not adding up, and it doesn't seem like they counted other streams outside of Spotify and YT. #billboardrecalculate."

"You tweeted the wrong date representing an incorrect tracking week, then made a new tweet, still claiming 18.3M US streams when the true figures show 18.9M streams in the US on Spotify and YouTube ALONE. Please hear us and recalculate @billboardcharts."

Design Implication: Recognize that users want more agency and provide transparency in how usage and popularity are measured.

Streaming services in fact benefit to some degree from fans' desire to have more agency, as fans intentionally choose streaming services over traditional models of music access like radio. Interestingly, streaming services are

also attempting to adopt a model similar to radio's as they seek to expand their revenue sources by asking artists to pay to advertise their songs within the app. Spotify's Marquee, for example, notifies listeners about new songs/albums for artists who pay $5,000 or more, but Shaw warns that "the effort is controversial because it's complicating wider talks over long-term music rights between Spotify and the record companies" [53]. As music services try to balance meeting user needs and ensuring revenues, it is difficult to say which model is in the best interests of all stakeholders. Regardless of the final decisions made by music services, at the minimum, it is important to recognize fans will continue to demand more agency, the ability to see the impact of their efforts, and transparency in how various statistics are collected and shared.

4.4 Importance of Non-musical Factors

One of the reasons for BTS's massive success is often attributed to the group's abundant visual content, such as high-quality music videos and choreography videos [31]. Music listeners' consumption and appreciation of music is changing as they consider more non-musical factors such as visual elements or information about the artists or labels when deciding what to listen to [37].

In addition to publishing various types of non-music materials, the transmedia storytelling BTS does through these different works is impressive. In order to truly understand the whole narrative created by the band, fans not only have to listen to the music and decipher the lyrics, but also connect the clues hidden in the music video, choreography, performances from concerts and award shows, and printed books and webtoons containing episodes from the fictional narrative. In fact, there are numerous "theory" videos on YouTube analyzing the music of BTS in depth, connecting the symbols embedded in various creative works and explaining the ideas behind them [31].

The visual elements that accompany music do not merely serve to enhance individuals' experiences. Prior research also shows that users watching the music videos with friends and family and engaging with other people around music videos or user-generated videos (such as reaction or theory videos) are important and memorable social experiences [44]. This community connection is also evident for many reaction videos related to BTS, as researchers have observed these videos generate substantial numbers of views and user comments.

Jenkin [24] also discusses the importance of recognizing the interrelationship among different technologies and thinking beyond the affordances of individual technologies or tools, stating:

> Rather than dealing with each new technology in isolation, we would do better to take an ecological approach, thinking about the interrelationship among different communication technologies, the cultural communities that grow up around them, and the activities they support. (p. 8)

This assertion hints at the importance of exploring how tools and technologies that were not necessarily designed to support music listening or sharing music information could be used to complement the activities in commercial music services.

Design Implication: Consider incorporating more visual and non-musical content, along with metadata pointing to related works, to promote fans' engagement.

In MIR user studies, YouTube consistently ranks very highly as the most used music service, often above services that are specifically designed for music [10], [20], [54]. While providing album art or sharing links to relevant music videos are already basic features in many existing commercial music services, we can envision more features that creatively incorporate visual elements. Spotify's Enhanced Albums (which BTS used for its *Map of the Soul: 7* album) or Pandora Stories, which allow artists to add video messages explaining the album concept, other visual materials, or voice commentaries, are good examples. These kinds of features not only enrich the music listening experience by adding a visual layer, but also provide more information about the music and the artist, which helps fans understand the context of creation and the creator's intent. One suggestion for expanding this feature is to allow users to interpret the music and related materials and share their perspectives, or share stories about what the music means to them individually, which would contribute to the sense of bonding. This currently happens mainly in Twitter, YouTube, or online forums for fans, but it could be interesting to foster the conversation within commercial music services, alongside the artist's expression of the original intention. Additionally, providing metadata that links users to related non-music materials would allow fans to more easily access a variety of materials to assist their analysis and interpretation of creative works.

5. CONCLUSION AND FUTURE WORK

In this paper, we investigated a case study of BTS and ARMY to better understand the contextual complexities that drive music fans' perceptions and behavior in commercial music services. Through a case study of BTS and its fandom, ARMY, we derived and described four design implications for commercial music services to consider.

This study examines only a single case study of BTS and ARMY; thus, there could potentially be additional factors that are missing in our discussion. As previously stated, this is an intentional methodological choice, given that the aim of the study is not to produce generalized findings, but to gain insights from a deep investigation of a highly impactful single case study to help us think about design ideas related to commercial music services.

The bonding experience created in these fan communities is increasingly important in our current situation, where most people are practicing some degree of social distancing due to COVID-19. In our future work, we plan to continue our research on fan communities and investigate the underlying social structure and practices of the ARMY fandom. Additionally, we are interested in exploring how fans are finding ways to connect with one another through music in this unprecedented situation by co-listening, participating in streaming events, and collaboratively creating and sharing playlists.

6. ACKNOWLEDGEMENTS

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