A Study on the Streaming Fraud in Online Music Platforms: Focused on Actor Network Theory (ANT)

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Abstract -Music streaming fraud is a subject of significant debate in the Korean digital music market. Because it is difficult to prove under the current law, there have not been any legal cases of music streaming fraud in Korea, therefore it is impossible to determine the direct link between this fraud and the actual facts. Numerous cases from abroad have demonstrated the method and link between digital music platforms and music streaming fraud. Actor Network Theory (ANT) is employed in this study to investigate the relatedness of music streaming fraud. To construct a black box (outcome), it will be analyzed how the actors from the three examples translate into a network with a digital music platform as an Obligatory Passage Point (OPP). In all three cases, outcomes are generated for personal satisfaction, such as financial gain from music streaming fraud or a favorite artist's good performance, but there are also outcomes for public benefit, such as pointing out the current unbalanced royalty distribution method and suggesting a new royalty distribution method. Finally, new translation outcomes that reconfigure the network based on the recipient's attitude are differentially formed, and this plays a part in the evolution and new direction of the music industry.
Keywords: Music Fraud, Online Music Platforms, Spotify, Royalty, Actor Network Theory

1. INTRODUCTION

Streaming sound sources provided by online music services are now used by consumers of popular music. Charts aggregated by the business requirement of increasing operating profits on music platforms have the most market influence. As a result, abusive behaviors such as instantly generating a large amount of content usage and convincing the platform that it is the start of a trend, making it a recommendation list, or increasing the chart ranking began to emerge[1]. This is analogous to Payola in the radio industry in the past. Although not illegal, it is a rigged chart that forces consumers to listen to music they would not normally listen to, rather than based on consumers' overall listening patterns, and allows the chart (playlist) to be created based on actual popularity[2]. The government's mandatory intervention in the music platform market should be approached with caution, and even claims that the public forum with the industry should be maintained as the regulatory system is strengthened are being discussed[3].

The revenue model using the traditional 'proportional distribution' method has become a conduit for streaming services where large purchases by fans can lead to royalties, and the misuse of services by the extreme fandom has resulted in news articles, legal battles, and streaming attacks that degrade the quality of popular culture. Streaming fraud has emerged as a result of fans downloading music for their favorite artists. There are also fandom guidelines (Twitter English account @BTS Billboard) to encourage this phenomenon, and overzealous fans' activities to raise and support music purchase are increasing rapidly[4].

These problems are not limited to foreign countries and have been present for quite some time. In Korea, major entertainment companies such as SM, YG, JYP, and Star Empire arrested brokers suspected of hoarding music but were not prosecuted due to insufficient evidence[5], prompting The Music Industry Promotion Act to include a provision for music hoarding punishment in 2016. However, there was another controversy in 2018 surrounding top Melon real-time chart artists such as Nilo, Jang Deok-cheol, and Sean, and in 2019, Block B's Park Kyung's Twitter revelation heightened controversy over music hoarding.

Nonetheless, the current state of domestic regulations on media platform observation activities includes civil law claims for damages and criminal law obstruction of business, as well as the Information and Communication Network Act, the Fair Trade Act, and the Unfair Competition Prevention Act. Compensation is difficult to obtain because civil law requires specific proof of damage, and criminal law prohibits punishment for legal competition because general observation acts may violate the Information and Communication Network Act. It is impossible to crack down under the Advertising and Communication Network Act without the authorities monitoring limitations and information inside the platform. The Information and Communication Network Act allows for punishment only when it is proven to be unfair in the part that was conducted illegally with the intent of interfering with safety operation. The only law governing the promotion of the music industry includes anti-fraud provisions, but the current regulatory framework cannot handle complex platform observation. There is also a practical issue that certain punishments, such as the right to pursue happiness, the right to self-determination of personal information, and the right to consumer rights, cannot be imposed in the event of an infringement of an individual's fundamental rights[1]. Under the subtitle "Manipulated World: Music Hoarding or Viral Marketing," SBS broadcasting company explicitly addressed the music fraud phenomenon. The Korea Music Label Industry Association held a public hearing on the digital music market in the midst of the escalating dispute, pointing out that "fandom attack" is also a cause of market distortion, mentioning that copyright fees for music are required to be distributed to creators and producers[6], and it is still a reality that music hoarding continues in the absence of separate legal regulations.

ANT is not a theory of abstract concepts, but a theory that provides concepts and tools to tell exciting stories about the relationship between society, technology, and humans[7]. With the advent of the digital age, the scope of technology expanded beyond the visible and touchable hardware category to include the intangible category of software. When these two categories, which blur the hierarchy of technology and science and break down boundaries, are reborn as Techno science, they are already given a more certain status in the network and remain a non-human actor that creates value. Furthermore, if the invisible method known as digital can be derived based on how users form a network, the number grows indefinitely and the range of diversity expands. According to Actor-Network Theory (hereinafter referred to as ANT), non-human actors are essential to the formation of nature and society. However, non-human actors in the invisible category actively intervene in network formation, increasing its qualitative value and resulting in a variety of relationships.

Domestic and international streaming concerns have revealed unusual phenomena that cannot be legally sanctioned in the consumption and production of popular music as non-human actors—digital music sources—meet non-human actors—music platforms. These occurrences include not only the works of artists that initially had a light appeal, but also instances of forced ways to avoid the legal system while offering purposeful information to influence the legion of fandom. These phenomena are not just the works of artists who initially had a light appeal; there are also instances of forced ways to avoid the legal system while offering purposeful information to influence the fandom. In Korea, there is still a lack of strong causal ties to streaming fraud, and digital music platforms are hesitant to assist in determining the truth. There are numerous incidents of streaming fraud occurring overseas. However, the majority of the study on this topic is based on legal interpretation and case law, which is not immediately relevant to offering guidance for the music industry.

The purpose of this research is to investigate the development of the music industry and new directions by examining cases with ANT to discover the causal relationship of streaming fraud. The following steps are taken during the ANT case analysis.

1. Understand the organizational structure of the non-human actor, Spotify, the music platform where other non-human actors, digital music sources,

assemble. Distinguish human and non-human actors.

2. Describe the steps used to create blackboxed networks by non-human actors who have been designated as Obligatory Passage Points (OPP). Examine the translation process that takes place between the methods of demand used by fans, one type of human actors, and the production structure used by artists, another type of human actors.

3. Explain how power and black-boxing are created by applying Michel Callon's four moments of translation to cases.

2. LITERATURE REVIEW

There are remarkably few studies about ANT in the field of culture and art in Korea. Jin-taek Kim in the field of popular culture content and Yang-woo Park and Yu-ri Lee, Myeong-cheol Jung and Jun-ho Oh, and Tse, Shin, and Tsang in the field of popular music industry were therefore explored among the Korean studies on ANT. Overseas studies were investigated as Prior employs ANT to describe how non-human actors such as a microphone can translate the voice of a virtual idol. Furthermore, although not from the standpoint of ANT, an analysis was required to compare the viewpoint of Hyo-Jung Kim's overseas study that digital illegal copying is done through fans via the royalty distribution method on the music platform as a relevant topic in this study.

The translation process by which a musician named Aphex Twin creates music on the digital music platform known as SoundCloud and the other users duplicate his music was detailed by Myeongcheol Jeong and Junho Oh. A comparative analysis was conducted on music production in which Apex Twin worked under War record prior to using SoundCloud, actor networks after the advent of SoundCloud, and translations that appeared in the recipient's actor network. The case involved Aphex Twin, a musician who despised the way of promoting and distributing music based on charts and copyrights, and demonstrated resistance to Warp Records, the record label under which he was signed. Aphex Twin, the primary actor, was seen as an agency because he problematized the network of Warp Records, music distribution actor, and triggered a new translation process. Due to the characteristics of the digital music platform since Apex Twin employed SoundCloud, the new translation highlighted another aspect of translation in the three functions.

Aphex Twin was drawn to SoundCloud's three functual agencies -upload, new recording, and GoPro. Through these features, Aphex Twin was able to independently control the length and file format of sound sources, as well as directly perform music distribution and image and text production—tasks that record labels had previously handled—and distribute music that was otherwise inaccessible due to contractual obligations to record labels or major digital music platforms. In an innovative way, Apex Twin used SoundCloud's upload feature to highlight actors who had been overlooked by the "Warp-centric" music distribution network and tried at a new translation. However, because SoundCloud supported the same format at the time of upload, Apex Twin used ID3, and his identity was not revealed in online streaming, but it was visible to those who downloaded the sound source and examined the file's properties.

Aphex Twin turned music distribution and acceptance into a game, with music recipients translated as 'players' in the game. When Soundcloud receives a report from the record label or the original author, it immediately deletes these sound sources in accordance with copyright law, but Aphex Twin did not report pirated sound sources because he opposed Warp's copyright laws, which limited fans' voluntary actions. Rather, the distinct sound of the pirate music prompted fans to archive Apex Twin's music, so the pirate music was left untouched in accordance with fans' wishes. The copyright law's agency weakened as the Warp-centered actor network was reorganized around Sound Cloud. Following this translation, a pirated version and an official version of a musician were curated side by side in the official online distribution network's playlist [8].

Myeong-cheol Jung and Jun-ho Oh used ANT to investigate the distinct physical characteristics and agency of non-human actors such as instruments, equipment, online platforms, laws, cameras, and software, rather than relegating them to the status of human instruments. The various technological hybrids and practice styles of the contemporary popular music scene were explained by describing how this agency translates other actors. However, the literature was reviewed in the context of analyzing the two overseas precedent studies that applied ANT to actual popular music research, and it appears that the perspective of

precedent studies was borrowed and reinterpreted rather than derived its meaning. Although ANT was visualized in the intangible realm and the movement of its action was grasped, it was limited to certain media, so a literature review study provided a glimpse into the contextual relationship between musical practice styles [9].

Prior's analysis of ANT appeared to be very interesting as he investigated the connection structure of non-human actors in which sound co-evolves until it reaches our ears from the perspective of ANT. The evolution of sound articulation was examined through the lens of ANT, as well as the evolution of circuits as non-human actors, from microphones to automation. The study's conclusion looked at how ambiguity and expansion were expressed by using the idol and virtual singer Hatsune Miku as an example. Miku's voice is said to be created through a combination of crowdsourcing, corporate investment, and algorithms. Electronic and digital processing of the voice has reduced its ontological plasticity, and in this sense, the overt act of vocal manipulation in popular music has been described as a 'violated experiment' in what the voice can do. Prior emphasized how, while certain socio-technological devices can shape voices, there is a lot to be said for knowing how much embodied singers, listeners, and speakers learn to listen through these mediations, and how much pleasure they actually derive from what the medium (Miku) does. As a result, reconceptualising the voice is ultimately about restoring it as an open system of co evolutionary agency by fully expanding it, rather than making it impure or listening to it artificially or mechanically [10].

While not from an ANT standpoint, Hyo-Jung Kim's study is contemplating the same issue from a content perspective. The study, which looks into international K-Pop fans' use of illegal live streaming since the advent of digital image technology, shows how viewers in the age of the internet are redefining national boundaries through the lenses of particular groups. In order to get around geographical limitations, K-Pop fans based abroad engage in live stream piracy. This enables fans to enter South Korea within a virtual world and connects them to their virtual "home" world of K-Pop. Based on the premise that people in the digital age have digitized their selves, this study explains how images of users' computer networks contribute to reshaping the self in relation to redefined spatiality. Borders between nations and subjects are virtualized in the digital age, and it is possible to infer how the meaning of borders and citizenship is redefined from the perspective of ANT. Furthermore, ANT can be used to re-examine the suggestion that new empowerment technologies be used to reinforce control and surveillance with digital technology, as well as to rearrange and reorganize power that appears dictatorial but hackable[11].

Jin-taek Kim applied actor network theory to the understanding and application of cultural contents in the restoration and regeneration of space. Cultural content, as a hybrid actor, identifies beings that are already made up of disparate connections between material and immaterial beings as beings that generate cultural capital goods through humanistic knowledge and reflection. It is said that science and technology leave traces and memories of their interactions with and responses to historical, cultural, and social factors. Furthermore, the memory is restored, replicated, re-memorized, converted, and replaced with disparate information and data. Kim validated the efforts to interpret cultural content production and consumption as a creative act as an ANT that understands and describes the alliance and network between humans and things. In this context, translation refers to the work of variation, comprehension, and conversion that occurs in the field of cultural content production and consumption. In addition, it was suggested that understanding the concept of translation in ANT, as well as tracing and describing the translation process as it moves within the network of relationships, is a good strategy that can be applied to the field of storytelling[7].

Yang-Woo Park and Yu-Ri Lee used ANT to identify Korean popular music stakeholders as the major actors, as well as the mutual relationships, interactions, and influences between each actor. In this study, a questionnaire was prepared based on previous ANT research, and a survey was conducted on 30 people in the field of Korean popular music, followed by analysis using the Analytic Hierarchy Progress (AHP) technique. In a study of the system related to the production and distribution of Korean popular music, the major actors were classified into 11 occupational areas, and their mutual relationship was regarded as positive and cooperative. The management agency was the most influential of these 11 major actors, followed

by the broadcasting station. However, it cannot be overlooked that, ten years later, the main actor is the fandom consumer [12].

Tse, Shin, and Tsang investigated the social construction of so-called 'glamorous' and 'faddish 'fashion in relation to the concept of a 'cultural medium,' bringing to the fore the agency, negotiation, and contentious practices of market actors in cultural production. Although Korean and Chinese mediators are increasingly occupying hybrid occupations and social positions in the industrial sector, they claim to have had limited success in using mediation to counter the phenomenon of Western fashion. As a result, the attitudes and positions of cultural mediators in the two markets were investigated using 25 in-depth interviews with industry experts. This analysis argues for the exchange of broader social and cultural contexts in order to empirically co-construct cultural aesthetic

objects through cultural mediators categorizing the seven mediating practices that shape fashion product evaluation. The reductionist perspective of ANT was organized through the concept of matrix, and a cultural-economic approach to understanding cultural mediation was developed[13].

As previously stated, there are numerous papers on the topic of popular music distribution or royalty distribution method in previous studies, but there are few studies that approached this topic using ANT. In Chapter 3, three cases will be discussed in which there are differences in the royalty distribution method of music platforms from the standpoint of ANT. In each case, the first paragraph describes the facts of the case before explaining the ANT translation process. Cases 1, 2 and 3 are examples of a profit structure that is unethical, but is being committed to avoid the current law.

3. Network Formation and Translation Process of Actor: Case Studies
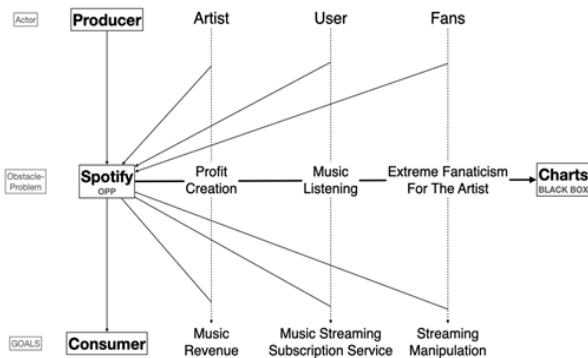

Table 1. Obligatory Passing Point (OPP)

Spotify offers music from a variety of music distributors and artists and currently has over 60 million songs. As an obligatory passage point in the process of distributing music and providing it to consumers, Spotify will have an agency such as unlimited streaming subscription service, royalty distribution, and playlists.

Spotify and users have an agreement called the "Unlimited Streaming Subscription" that entitles users to unlimited music streaming in exchange for a monthly fee. Through this agency, Spotify generates revenue and forms another

3.1. ISRC's Spotify Scam in Bulgaria

On May 3, 2017, two Spotify playlists were created: 'Soulful Music' and 'Music From The Heart'. A total of 467 music sources attached to Bulgaria's ISRC (International Standard Recording Code) were all made up of pseudo artist names,

network. First, it becomes possible to compensate musicians whose music was distributed through Spotify. The "proportional distribution" method, which is the most popular royalty distribution method in the music distribution market, is the one utilized by Spotify for royalty distribution. Artists generate economic benefits through this agency, and they invest in their music and distribution to increase profits. As a result, Spotify serves as an Obligatory Passage Point for artists, and music charts and playlists, as reflected in sales and performance, serve as a Black-Box. Spotify provides playlists to its users, giving Spotify a powerful power structure over its artists. Spotify's 'Playlist' is a key feature that has multiple genres and automatically selects music based on popularity ranking. Users are given convenience, and artists try strategic marketing for music in order to be exposed to the playlist algorithm, with the expectation that it will lead to revenue for music.

As a result, Spotify's agency creates a massive, Obligatory Passage Point within the music streaming service network. Overall, Spotify's performance ability creates a network that works well in a virtuous cycle between consumers and artists, and it is transformed into a Black-Box. However, the collaboration of unexpected networks of actors on both sides results in a paradoxical translation. The translation of mutual actors and discovering the contradiction in the ability to act in Spotify can be examined using the examples below.

and the sound sources are not general pop music, but effect sounds such as coughing, spitting, and sneezing (Foley sound). These pseudo artists used about 1,200 paid accounts, which Spotify estimates averaged approximately 103 million streams per month. Due to the bandwagon effect, 'Music From The Heart' entered the global chart at 84th and the US

chart at 22nd, while 'Soulful Music' reached 35th on the global charts and 11th in the US. In late September of the same year, a major label executive discovered the playlist, and Spotify suspended the service for violating the service's content policy. Spotify estimated that the pseudo artists generated about $1,000,000 in average monthly sales. Interestingly, Spotify paid full royalties for all Bulgarian ISRC accounts. Spotify spent months researching and sharing detailed data on major labels and copyright holders, but discovered that all of these actors' accounts had verifiable income. Spotify finally recognized the gravity of manipulating streaming activity and announced a significant investment to improve the process.
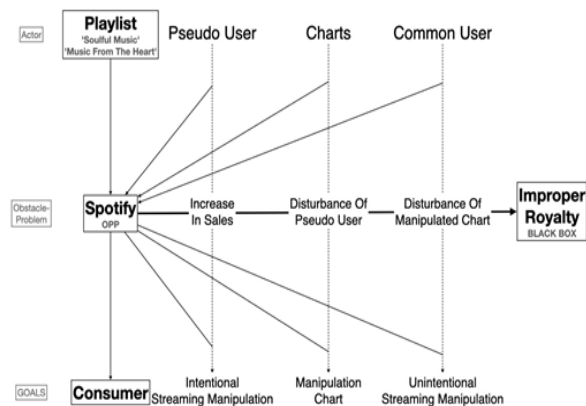

Table 2. Introduction of new consumers by pseudo consumers (artists) through manipulation with moments of translation

When Callon's four moments of translation are applied to Case 1, the initial pseudo actor is the one who created 467 sound sources and created and released two Spotify playlists. These two playlists of foley sounds form an alliance by attracting a collective of 1,200 pseudo users who cause network disruption. The initial pseudo actor attempted translation by assigning roles to mediating pseudo users and filling out a list of tasks. However, the 1,200 pseudo users who formed an alliance and the artists who produced the 467 sound sources were not separate actors, but rather one and the same actor. This can be seen as a 'problematization'. These 1,200 pseudo users streamed day and night for 5 months to finally enter the chart. The playlist's chart entry disrupts Spotify's black-box, the charts, the charts, consistently rising in the rankings and placing it at the center of translation. Playlists, which are non-human actors that have successfully entered the top of the charts, have succeeded in 'locking' the consumers who are real Spotify subscribers, and these consumers participate in the network by 'enrolling' the playlists that have entered the charts to their lists. Playlists gain more power by inducing alliances (streaming) of real consumers using the 'immutable mobiles' of popularity to real consumers who are influenced by Spotify's black-box charts. The 'enrollment' of real consumer actors resulted in enormous profits for pseudo actors and a

successful 'mobilization'. This entire process can be viewed as four moments of Callon's translation.

It was a successful translation process that resulted in the formation of a network of united allies, at least until an external third actor intervened. The appearance of a third actor can be described as treason in translation, and the power of the playlist interspersed with lies is cut off in an instant. With Spotify's service interruption agency, the power of pseudo actors disappeared. However, the contradiction of Spotify, a critical actor of power, can be seen here. Spotify paid the full copyright fee for all accounts composed of this Bulgarian ISRC at the same time the pseudo actor's service was suspended. Spotify investigated the pseudo actors' detailed data, but all of their accounts were legal. Spotify suffered no direct losses during the translation process because it eliminated pseudo actors. However, since the trust of real consumers has been lost, the allied network has suffered losses, and the black-boxed chart has become a reality that has no choice but to cast that trust into doubt. Spotify's agency, which is its music royalty distribution method, had a blind spot.

3.2. Case 2: Diehard Fans and BTS 'Dynamite'

South Korean boy band BTS released their digital single 'Dynamite' on August 21, 2020. 'Dynamite' is the first K-pop song to reach number one on the Billboard Hot 100 chart. This provided an opportunity to demonstrate BTS' global popularity, as well as the power of their fandom and influence on music consumers. However, there was a dark side to 'Dynamite's' great achievement. The fandom's act of manipulation for 'Dynamite' was revealed, centered on the social media platform Twitter.

The Twitter account @BTS_Billboard distributed guidelines on streaming manipulation with the hashtag #DYNAMITE_SURVIVAL_KIT. They presented specific methods aimed at various platforms rather than specific platforms, which are broadly classified as purchase, streaming, and radio broadcasting. First, multiple platforms, including iTunes, Amazon Music, TIDAL, and BTS US STORE, are targeted for purchase. Furthermore, fans who could not afford to buy were supported with purchases through the Twitter account @fundsforbangtan, or sponsored through the account. Purchases are also encouraged from family, friends, and coworkers. Their streaming manipulation guidelines were further subdivided. It was carried out on Apple Music, YouTube, Amazon Music, Google Play, Pandora Premium, Spotify, DEEZER, and Tidal. Streaming counts differed between paid (one time) and free (two/three times) accounts, and it was recommended to use a free account if users were unable to pay for an account subscription. Furthermore, regulations for streaming manipulation were developed, and later, large-scale guidelines for Spotify and YouTube were presented. Radio broadcasts consisted of local stations and SHAZAM. Taking advantage of the fact that radio music selection has a significant influence on the Billboard Hot 100, fans

continued to request 'Dynamite' and recognize music via Shazam to increase consumption.

@BTS Billboard's streaming guidelines are very detailed and specific. They identified consistency and persistence as important factors in streaming manipulation. For example, rather than focusing solely on the first day or week of release, we asked for continuous and consistent streaming of
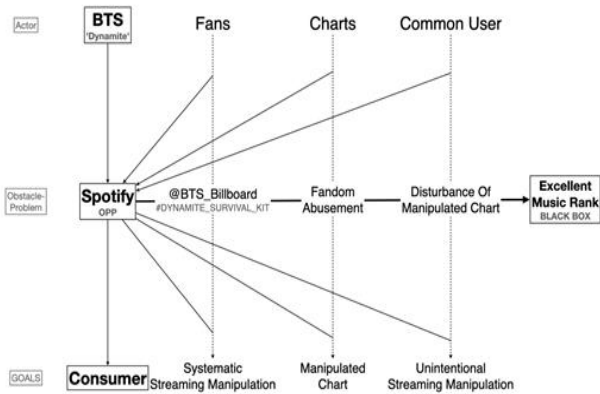

Table 3. Introduction of new consumers by fandom through manipulation using moments of translation

When Callon's four moments of translation is applied to Case 2, the first human actor 'problematizes' by disseminating the #DYNAMITE SURVIVAL KIT black-boxed streaming guidelines with the non-human actor ID @BTS Billboard. These guidelines are the know-how developed by a vast network of alliances known as fandom. The wording of instructions or survival kits already exudes kindness, laying the foundation for 'interessement'. While presenting a specific agency of entry, the guidelines directed a number of platforms to pass through the obligatory passage point and demanded partnerships with a variety of entries, including purchase, streaming, and radio broadcasting. Each entry results in different translations, but streaming is the main focus.

Another non-human actor, @fundsforbangtan, achieves 'interessement' by luring and diverting actors in the name of support or sponsorship for actors who want to form alliances in accordance with black-boxed guidelines but find it difficult to enter the network. Following that, they achieve "enrollment" as a general consumer through a consistency resembling gaslighting and persistent guidance at the level of brainwashing. Consumers band together in the name of fandom, and fandoms, like organizations, go through rites of passage like conduct standards. Despite the fact that such a powerful collective was successful in "mobilizing" the majority of actors, it has become the primary culprit in degrading the qualitative value of artists and cultural behavior. The black-box, which is not an alliance of weak actors but rather a guideline of powerful actors, will not only tarnish the artist's image, but will also remain the sole cause

BTS music. Their systematic act of streaming manipulation took place not only in 'Dynamite' but also in other music such as 'Butter' and 'My Universe'. Even though BTS's popularity has grown to the point where they can easily rank #1 on the Billboard Hot 100 with their own abilities, the fandom's act of streaming manipulation continues to this day.

of encouraging wealth polarization in the popular music market.

3.3. Case 3: 'Sleepify' by Vulfpeck

Vulfpeck, an American punk band, released their album 'Sleepify' through the online music platform Spotify in March 2014. 'Sleepify,' a 10-track album, includes a 30-second silent track. The track titles are 'z', 'zz', 'zzz', and 'zzzz', which are all onomatopoeic representation of sleep. The goal of the album's release, as stated by Vulfpeck on their YouTube channel, was to use the royalties from the streaming of "Sleepify" as fundraising for the group's free concert tour. Vulfpeck requested that their fans use Spotify's unlimited music streaming service and have the album played repeatedly while they slept, which was an unusual way to listen to music. This Spotify translation agency, which lasted for about two months, allowed for the collection of royalties totaling about US $ 20,000. However, upon discovering this, Spotify suspended Vulfpeck's 'Sleepify' on April 26, 2014 for violating Spotify's service content policy. Billboard reported in July of the same year that Vulfpeck had received a total of $19,655 in royalties, plus an additional $1,100. Vulfpeck was able to hold the Free Sleepify Tour in August and September in San Francisco, San Luis Obispo, Los Angeles, Chicago, Ann Harbor, and New York because they were ultimately successful in their crowdfunding campaign. The band's founder, Jack Stratton, used this information to criticize Spotify's unlimited streaming subscription service in an interview with CNBC in 2018. He also suggested a new user-centered royalty distribution method rather than a proportional distribution method and urged users to come forward.
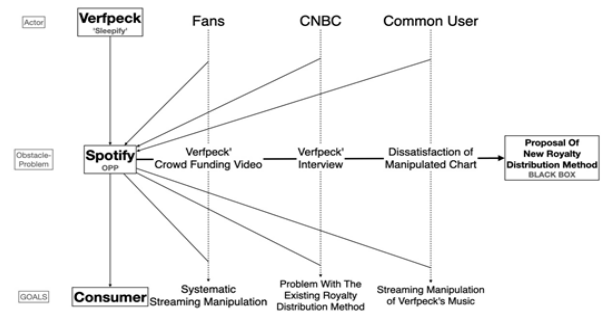

Table 4. Interessement of users through crowd funding by artists through moments of translation

When Callon's four moments of translation is applied to Case 3, Vulfpeck releasing 'Sleepify' and suggesting crowdfunding using early morning manipulations to fans through YouTube can be seen as 'problematization'. The foundation for an alliance of user empathy was laid by Vulfpeck's sincere and truthful YouTube appeal. It succeeds in 'intersegment' by making royalty seen as a concept of sponsorship sufficient to stop and bypass its own network. It is considered "enrollment" that viewers of the video voluntarily took part in their crowdfunding campaign. Through interaction between the unlimited streaming subscription service, which is the agency of Spotify, and the proportional royalty distribution method, Vulfpeck revealed the contradiction that abnormal sales occur in royalties, namely treason, in an interview with CNBC. This exposes the flaw in the proportional royalty distribution method currently in use and succeeds in 'intersegment' even to users who are not fans. Fans (users) played "Sleepify" to show their support, and Vulfpeck's interview on CNBC revealed that their goal was to exploit a flaw in the proportional royalty distribution method and that users had been "mobilized" to their network. Through Spotify, which serves as a obligatory passage point, a translation between a human actor(artist) and another human actor fandom (user) took place in the network. Treason has caused a problem with the royalty distribution system, one of Spotify's powers and an improvement will be unavoidable. Artists formed an alliance with consumers, demonstrating Spotify's contradiction of agency in relation to music royalty.

4. CONCLUSION

This study used ANT to evaluate overseas cases in order to investigate the causal relationship between streaming fraud and the evolution of the music industry and to explore new directions. Various black boxes were created based on the acceptance attitude of the actors in each case. In the first and second cases, people used streaming fraud to their advantage to gain billions in unfair royalties or to boost the popularity of their favorite artists' music. This clearly demonstrated the bad implications of streaming fraud. In the third instance, streaming fraud was exploited to highlight a flaw in the current royalty distribution process. It also deterred streaming fraud and promoted a healthy music business market by suggesting a new revenue distribution scheme.

The study discovered that in order to generate profits, producers engage in a differentiated translation process within a network of non-human actors. Through the black boxes that producers create, consumers can establish or dissolve alliances, but once an alliance has taken place, acceptors with higher added values than producers are able to produce another black box. Despite the advancement of technology, this series of reproduction processes that results in a game of "ping-pong" between producers and consumers gives us insight into the structure of coexistence in the network of alliances between human actors. Although the contradictions on the online music platform, which is an obligatory passage point, still need to be improved, it is also significant that the audience's threshold behavior produces a new translational outcome that differentiates the network. However, despite the limitations on confirming the hidden facts of the cases and the solutions proposed and implemented, the problem has not been fundamentally resolved. Different viewpoints on streaming fraud via digital music platforms are required, as is further study employing ANT and other creative research approaches to grow the music industry.

5. ACKNOWLEDGEMENTS

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