Adaptation of User-Centric Revenue Sharing Model on Blockchain in the Music Industry

Research dissertation presented in partial fulfilment of the requirements
for the degree of
MSc in International Business Management

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3 September 2021

Candidate Declaration

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I certify that the dissertation entitled: Adaptation of User-Centric Revenue Sharing Model on Blockchain in the Music Industry

submitted for the degree of MSc in International Business Management is the result of my work and that where reference is made to the work of others, due acknowledgement is given.

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Dedication

This study is dedicated to my beloved parents and friends, who have been my source of inspiration and gave me strength, who continually provide their moral, emotional and spiritual support.

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The completion of this study could not have been possible without the expertise of Louise Gorman, my thesis advisor. I also would like to thank all participants who took their time for this thesis.

Abstract

This study aims to research the objectives of "What are the pros and cons of the current royalty distribution models in music streaming businesses?", "What might be the possible outcome of switching to a user-centric model for artists?", "What might be the possible outcome of switching to a user-centric model for businesses?", "How can the industry be adapted to a user-centric model?", "How the blockchain technology can be adapted for royalty distribution to the music industry?", "What are the effects of adapting blockchain technology to the music industry?" The findings of the research indicate that using a user-centric payment system can be beneficial for artists in the short term in the post-pandemic era and with the global blockchain adaptation all entities including intermediaries can operate in the well-managed and optimized industry. The indicated results reveal the possible adaptation techniques and bottlenecks for the industry and how those can be tackled by the industry entities. The findings have been concluded with qualitative interviews with executives of industry leading organizations that focus on technology, music business, digital rights management and blockchain. Findings have been backed by the secondary data obtained through literature and online research.

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List of Abbreviations

Collective Management Organization	CMO
Digital Streaming Platform	DSP
Non-Fungible Token	NFT
Performance Right Organizations	PRO
User-Centric Payment System	UCPS

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1 Introduction

1.1 Overview

The topic that will be discussed in this study is the artist royalty distribution models specifically user-centric payment system for the music industry and how blockchain can be utilized and adapted to do so. The designed title is 'Adaptation of User-Centric Revenue Sharing Model on Blockchain in the Music Industry'.

The main focus of the proposal will be to understand the widely used revenue sharing model which is the pro-rata model and an alternative one, the UCPS model, how they apply to music streaming businesses, how the revenue generated by streaming services is distributed together with equalization, how an adaptation of new revenue sharing model can be utilized in the industry, what are the possible effects of UCPS adaptation with blockchain on artists and businesses both strategically and financially and its impact on the industry structure. Both models have advantages and disadvantages to each other. However, the pro-rata model is highly used in the industry. These will be investigated from the perspective of artists and businesses. It is suggested that the user-centric model can be beneficial for both parties (Dimont, 2017).

The main questions that will lead this research are:

1. What are the pros and cons of the current royalty distribution models in music streaming businesses?

2. What might be the possible outcome of switching to a user-centric model for artists?

3. What might be the possible outcome of switching to a user-centric model for businesses?

4. How can the industry be adapted to a user-centric model?

5. How the blockchain technology can be adapted for royalty distribution to the music industry?

6. What are the effects of adapting blockchain technology to the music industry?

1.2 Research Purpose

The given questions in section 1.1 provide a guideline for the study and outline the issues that are raised by usage of the pro-rata model in terms of royalty inequality, pros and cons of user-centric model, the economics of streaming music, revenue-sharing allocation methodologies, the effect of alternative solutions, how user-centric model is viewed compared to the current model and its effect on the industry and hence their overall strategy. (Hesmondhalgh, 2020) indicates that the per-stream model, as known as the pro-rata model, raises sceptical focus and now individual musicians may earn less money than it was before due to the adaptation of digital music streaming services. Additionally, it is stated that the user-centric model can also be used to avoid stream fraud, fair revenue distribution for individual artists, however, a consensus must be reached in the industry to apply the user-centric model (Pedersen, 2020). Based on the chosen topic and digitalization, the study focuses on evaluating online data, articles, industry information collected through qualitative interviews with the executives of lead industry companies that focus on music business and technology.

1.3 Significance of the Study

With the spread of digital technologies, music distribution and consumption have become easier and more volatile. Specifically, free streaming services boost music consumption in the last years (Aguiar, 2017). Hence, companies in the music business industry such as record labels, publishers and distributors obtain their revenue through digital streaming services based on their existing contracts between the stakeholders. With the entrance of digital streaming service providers, record sales dropped while the streaming increases (Arcos, 2018).

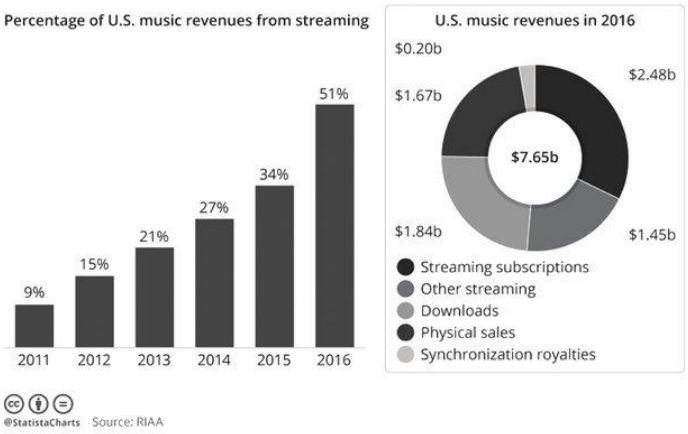

Figure 1 - U.S. music revenues 2011-2016 (Arcos, 2018)

It is also indicated that digitalization of the music distribution made the physical music distribution irrelevant and causes the music industry entities to adapt themselves (Wikström, 2021). Digitalization of the money redefines cross-border money transfers, royalty transfer between entities and security of the revenues (Brunnermeier *et al.*, 2019). Thus, the music industry is also affected and royalty distribution of the digital works is adapted to the industry. Revenue sharing for digital streaming services is currently based on per-stream (pro-rata), not a per-subscriber (user-centric) model. Besides, the pro-rata model can be open to stream fraud. (Hesmondhalgh, 2020) claims that switching to a user-centric revenue distribution model can offer a fairer system for both local and international artists, smoothen the data distortion like age and listening habits and helps to tackle stream frauding issues. Moreover, a shift to the streaming era causes legal disputes and many voices from the artists' side indicated their concern about how artist royalties are distributed and its negative impact on their livelihoods. With the hit of Covid-19, these concerns became a more important issue in the industry since artists earn 95% of their total income from performance rights which is one of the main industries hit by pandemic (SoundRoyalties, 2020). In the pro-rata model, some artists deliberately reduce the length of songs to increase better revenue generation and the current model raises some issues that niche genre artists will be no longer able to produce due to unaffordability of their work, hence music business catalogues can disappear from label records over time (MBW, 2021). Under these problems, the user-

centric model can be a solution for the industry for fairer and transparent royalty distribution (Muikku, 2017). However, a user-centric payment system will arrive with its problems such as its design, technical and specifically legal disputes on the existing contracts between streaming platforms and other stakeholders. To overcome the possible issues, blockchain technology can be adapted to the industry so that transparency, a fairer model and adaptation of the new revenue distribution model can be easily utilized in a regulated environment.

1.4 Research Objective

This study aims to investigate and reveal the adaptation process of the user-centric revenue sharing model with blockchain in the music industry. To do so, the study focuses on both possible benefits and harms of the UCPS, how blockchain can be utilized and what kind of short and long term advantages it can provide to the music industry. The author aims to point out the strategic decision making for the adaptation of UCPS in the industry. The study consists of the technological integration of the music industry, networking effect among the different music business entities, international status quo of the music industry and what needs to be fulfilled to change the current status quo.

In a summary, the main objectives of the research are:

- What are the pros and cons of the UCPS?
- How should be the prototype/test model of the UCPS to adapt to the industry?
- How can the dynamic of the competitiveness in the industry be affected by UCPS adaptation?
- What could be the reaction of the existing companies in the industry with UCPS adaptation? Can it cause any disruption?
- What are the benefits of decentralization which blockchain provides compared to the current centralized model in the music industry?
- How can the existing middleman be affected in the music industry with blockchain technology?
- What is the bottleneck of blockchain adaptation in the music industry?

1.5 Structure of the Study

The structure of the study starts with the literature review focusing on the comparison of pro-rata and UCPS models in a basic level, pros and cons of the current revenue sharing model, interaction between the music business entities, explanation and usage of the blockchain technology in the music industry and different views of how blockchain technology can be utilized in different sectors and their similarity with the music industry. In section 3, the study focuses on the selected methodology of the research and the data collection including the sources and ethical issues. In that section, the aim of the questions is explained. In section 4, the author provides implications regarding literature review and qualitative interviews. Results are focused on the practicability of the findings in the industry, summary of the differences between different points of view, limitations and future recommendations from the view of author's point of view. Limitations and future recommendations are remarked based on the literature review, feasibility analysis, current status of the industry, popular trends and experienced industry leaders comments. This study can be extended for PhD research regarding international business management and technological adaptation of blockchain technology in the music industry.

2 Literature Review

2.1 Overview

First of all, it should be noted that 89% of music listening is through on-demand online music streaming (IFPI, 2019). This engagement is done through well-known streaming platforms (Apple Music, Spotify, Amazon Music, Pandora, Deezer, Tidal, etc.). As a result of this high interaction, these platforms generate the most revenue in the global music industry and it is expected to grow over years (IFPI, 2019). Averagely, 70% of generated revenue by music streaming services, as known as payout rate, is distributed to content creators after the deduction of middleman fees such as publishers, record labels, distributors and the remaining %30 stays in the platform. The payout rate is distributed to artists by using different revenue distribution models, mainly using the pro-rata model.

Secondly, in section 2.3, an analysis of the royalty payments in the music industry is discussed. The process of owning, accessing and distributing music or creative content has shifted over the years (Puddlegum, 2021). With the technological advancements, the music industry integrated itself with advanced technologies such as big data, artificial intelligence and yet to be widely adopted, blockchain (Puddlegum, 2021). The industry has already seen new entries which utilized blockchain technology as the core of the business (Audius, Revelator, Musicoin). However, this study investigates the widen adaptation of blockchain technology with a new royalty distribution model. A study has already been conducted by Deezer to see the possible effects on the industry (Deezer, 2020). Additionally, SoundCloud introduced its user-centric payment model in the first quarter of 2021 (Owsinski, 2021). However, the industry itself has not adapted the user-centric payment system entirely. This is due to the financial uncertainty, switching cost to the user-centric model, which includes the renewal of the existing contracts with labels, songwriters, distributors and production companies (Dimont, 2017). Additionally, other issues are observed by the author are:

- Inequality in artist royalties
- High entry barriers to music streaming business for independent artists
- Counterfeiting activities against the music streaming businesses

- Possible side effects of switching to the user-centric model to music streaming businesses
- Bargaining power of the record labels
- Unwillingness to switch to UCPS due to the financial uncertainty for businesses
- Existing policy issues regarding intellectual property rights and remuneration
- Covid-19 effect in the music industry

2.2 Revenue Sharing Models

2.2.1 *Pro-Rata Model*

Pro-Rata is a market-leading model where artists are paid based on their share in the total number of streaming on the platform. Analyses show that this model causes a cross-subsidization between users based on their streaming volume (Alaei *et al.*, 2020).

For example, if we consider 2 users(1 and 2) paying the same amount of money, €10 for a monthly subscription, and assuming User-1 listens to the Artist-A 10 times and User-2 listens to the Artist-B 90 times. Overall, 100 streams occur. In the pro-rata model, the payout will be approximately €14 and will be distributed to artist A as €1.40 and artist B as €12.60 as can be seen in Figure 1. It can be clearly said that Artist-B's payout is compensated through User-1's subscription fee. (Autio, 2019) indicates that, according to the pro-rata model user has to be streamed 472,312 times to earn the minimum wage in the USA. This would require a far larger fan base for many artists.

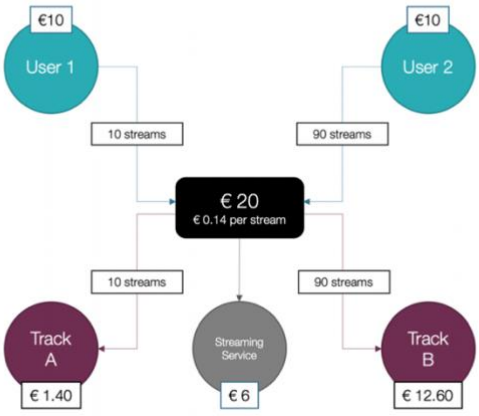

Figure 2 - Pro Rata Model (Pedersen, 2020)

2.2.2 *User-Centric Payment System*

The user-centric model is calculated based on each user subscription and their listening activity, equally distributed among artists, instead of total streams (Alaei *et al.*, 2020). In this example, every user's subscription fee is deducted for a service fee by the platform that provides the service in the first place and the remaining €7 is distributed based on the user's listening activity equally distributed based on artists. In this case, even though the number of streams differs based on the users, the artist will get paid based on their fan base activity.

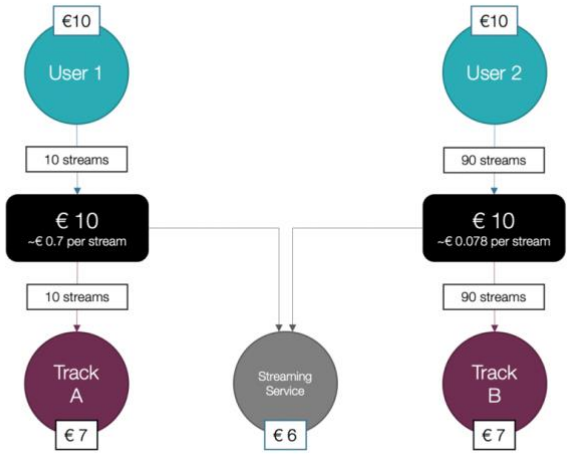

Figure 3 - User-Centric Model (Pedersen, 2020)

2.3 Analysis of The Royalty Distribution

Switching to a user-centric model has benefits as well as disadvantages for artists to some extent. The first outcome is from the financial point of view. As of January 2021, Ireland's minimum wage is stated as €1,723.80 (Eurostat, 2021). For the pro-rata model, an independent artist in Spotify has to have listened to approximately 430,000 times to earn the minimum wage based on €0.004 per-stream payment. It should be noted that the number of unique users remains unknown. If we consider 100,000 unique subscribers total revenue generated will be €1,000,000 whereas it is €10,000 for 1,000 unique subscribers.

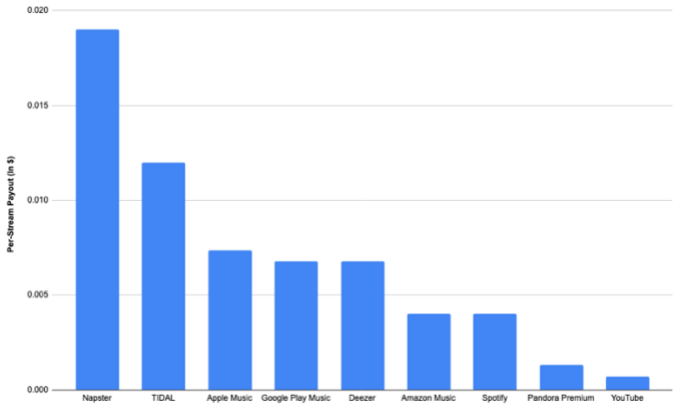

Figure 4 - Average Per-stream Pay for Pro-Rata Model (Digital Music News, 2018)

On the other hand, in the user-centric model, approximately 250 fans with even 1 stream per user will be enough to cover the minimum wage in Ireland after deducting the service fee. In the user-centric model, artists engagement with their fans will be intensified in terms of revenue generation for artists. This reduces the high barrier to entry to industry for independent artists. Adaptation of the user-centric model also makes the platform fairer and transparent from the perspective of artists which also brings equity and value to the platform (Page and Safir, 2019).

Nevertheless, the user-centric model can raise some issues. (Hesmondhalgh, 2020) indicates that the distribution of the revenue will be based on both individual and user group's listening habits. An example can be given for indie labels, they tend to listen to a high number of artists in their genre and this may result in relatively low effective per-user royalties for artists. According to a study conducted in Finland based on 10,000 tracks, the obtained results were dramatic from the individual artists' point of view. The share of the top tier (100+ streams) revenue was 9,9% in the pro-rata system whereas only 5,6% in the user-centric model. Switching to a user-centric system decreases the revenue of the top-tier artists.

Additionally, as discussed in (Musically, 2020), it is vitally important to how the content is consumed. In the premature user-centric system, revenue is calculated based on the subscriber listening activity. However, as the length of the content can be various for each genre, an artist who has longer content will have lesser streams comparing to shorter content. This may arise inequality among the genre and further might affect the

record label's contracts with the content producers. The literature review in this section raises the following questions:

1) How the logic of UCPS should be designed to optimize fairness and transparency?

2) Can UCPS harm the relationship between the content owner and the records label?

With the improvements in technology and communication technologies, access to online music has increased. These changes lead to industry to adapt new models for distribution, media production and consumption (Kawashima, 2020). Due to that, businesses had to adapt themselves to this new digital world in terms of every part of their business models including user acquisitions, regulations and revenue generation models. With the help of peer-to-peer file sharing on the internet, copyright in intellectual properties has also become an issue. Most companies overcame these problems by generating complex contracts between the stakeholders and as a result, the most successful ones are leading the industry. (De Leon and Gupta, 2017) claims that, even though blockchain technology is infant, the technology offers entirely new registering and monetizing intellectual property in the online music supply chain. These changes force the companies to adapt themselves for a sustainable future.

Due to the decrease of intermediaries in the industry, users tend to choose more transparent and fairer systems for their revenue generation. This leads us to the usage of user-centric models. The model offers a clear structure for artists to investigate how their revenue is generated in addition to demographical data of their fan base. (Halter *et al.*, 2009) indicates that transparency is a tool that helps to strengthen the relationship between suppliers (content producers) and businesses. In the long-term, this can be interpreted as a better company's image from the content producers point of view.

From the legal point of view, Copyright Boards establish policy objectives for regulators. (Towse, 2020) indicates 4 factors:

A. Highly available number of creative works

B. Fair Income and Returns

C. Consideration of the Parties' Relative Roles

D. Minimizing the disruptive impact

Factors A and D are efficiency objectives whereas B and C raise ethical issues. This can be said as efficiency versus equity. Businesses tend to make their model as profitable as possible. However, from an ethical perspective, this problem has to be balanced. On this basis, the user-centric model does not affect the streaming services total revenue as platforms keep their share from subscriptions the same as long as the number of users, streams and artists remain the same. Nevertheless, it may affect the stakeholder relationships, preferences of the artist or record labels for where and how to distribute the content under which conditions.

Moreover, the pro-rata model can cause a click-fraud (stream-fraud) in digital music streaming services (Dimont, 2017). In the pro-rata model, the revenue sharing is calculated based on the per-stream, artificially created clicks or streams by using crawling bots can be disruptive. By changing to a user-centric model, creating artificial streams will be redundant as the revenue sharing is based on the per-subscriber model.

Additionally, (Maasø, 2014) indicates that transition to user-centric from pro-rata model would decrease the share of top 4 labels from 76% to 75%. Overall, the following questions for businesses may arise:

1) How companies can provide better service and make their business models sustainable and profitable?

2) How streaming services can benefit from switching to a user-centric model?

3) How would the relationship between streaming services and record labels be affected?

Switching to a user-centric model can also have a detrimental effect on businesses. First of all, major technology companies in music streaming businesses have already developed their revenue calculating system and to amend the existing system they need to link all content producers to all users financially (Hesmondhalgh, 2020). With regards

to technology costs and big data applications for real-time processing, this may increase the companies' technological expenses.

Content producers distribute their works through label services and digital service providers. Label services generate their revenue from artist royalties so that cancelling existing contracts and renewal will not be a favourite of label services. In general, the majority of content producers do not have bargaining power over their rights (Aguiar, 2017). Regulations also take part in the switching to a user-centric model. In some countries, royalty rates are determined by the state (Towse, 2020). While switching, a conflict may arise between the copyright boards and regulators. The feasibility and adaptation process can also be time-consuming and costly.

Additionally, music streaming services generate revenue from 2 parts: subscribers and ads. In most platforms, ads are removed after moving to the subscriber (premium) model. However, DSPs have also a revenue source of ads which ease the burden of the service providing cost for free users (Wlömert and Papies, 2016). One of the main problems here is that after switching to a user-centric model, how the businesses will be able to cover the service providing cost to free users? One business model regarding that is implemented by the TIDAL platform, which offers the only fee-based subscription and high-quality music based on the quality of music. It can be seen in Figure-4 that TIDAL is placed as 2nd rank for per-stream artist royalty payments among DSPs due to their well-designed revenue collection business model.

Another problem occurs when switching to a user-centric model that is independent and lesser-known artist tends to place themselves in the well-known DSPs and choose their benefits in terms of accessibility, popularity and features. At a time of transition in the industry, the high costs and lack of alterability in the technological infrastructure can be also destructive for businesses. Overall, the following questions arise for current obstacles:

1) What is the overall financial effect of the change of revenue sharing model to streaming services?

2) What are the necessary alterations in terms of regulations in copyrights?

3) What is the solution for platforms that offer free-tier based services?

4) What is the solution that can also be beneficial for record labels in terms of existing contracts?

It is stated that switching to user-centric payment systems will have effects the following (Pedersen, 2020):

1) Record labels shares will remain the same

2) UCPS might benefit the local content producers

3) Based on the different segments, the effects of USPS can be either positive or negative

4) Demographic characteristics of users can have a significant impact

5) Economically, the decrease in distributable income may occur due to the administration costs of developing and running the system of UCPS

6) Fighting against clickstream fraud

In terms of long-term effects, Alexander Holland, Deezer's chief content and strategy officer indicates 'If you take people who do hip-hop, if they are hit by UCPS now, they may make their money back in the long term when the people who listen to them are in their forties and in the current system they may receive a lot of money from young people who stream through the night, in the future UCPS might be their retirement plan!' (Musically, 2020).

The report indicates that switching cost is not crystal clear and most importantly distribution model has to be implemented at a streaming platform level. Hence, a consensus must be reached among the stakeholders in the music industry. Since the above effects mainly concern artists and streaming services, recording contracts play a significant role in the adaptation of the process as well.

It is also stated that record labels provide marketing expertise and exploration of best practices to create a sustainable carrier for new independent musicians (Murphy, 2020).

Record labels tightly control the method of distribution of the intellectual properties, however, the delivery of the streaming music threatens to change this well-established system (Coats *et al.*, 2000). Another study shows that artists, who complain about low financial income especially through streaming services, should also review their contracts with the record labels because a lot of those contracts originate from the time of physical music distribution and were, therefore, concluded under different market conditions (Wagner *et al.*, 2015).

Under these conditions and the rise of the independent revenue generation trend, record labels contracts may have to be adapted to this new system. These generate the following questions regarding the current status of the music industry.

1) How the change in the industry can be widely adapted?

2) What are the key solutions to expedite the adaptation?

3) What kind of actions should record labels consider?

4) Is it possible to adapt the process without performing a full shift?

2.4 Blockchain as a Business Model

In this section, blockchain technology, its usage, its advantages and disadvantages in terms of decentralization and for the study its financial effect is discussed. On a simple level, blockchain is a distributed ledger with no central authority, providing immutable data recording, enabling instant peer-to-peer any digital file-sharing without intermediaries (Yaga *et al.*, 2018). The technology can help to resolve the main business issues such as transparency, security, data reliability (Golosova and Romanovs, 2018).

With the increase of digitalization of money, financial actors of the digital economy seek high-quality technologies. As we see the first adaptation of brand new technologies in finance-related industries, blockchain is developed to be the new peer-to-peer electronic cash system, Bitcoin (Nakamoto, 2009). (Vovchenko *et al.*, 2017) indicates that blockchain technology is a promising platform for new business improvements,

specifically in investment and financial areas. Therefore, analysis of blockchain technology and its effect on the business should be widely tested and then integrated.

As an advantage, since the technology provides reliability, trust and safety, it is expected to be widely used in the banking sector for bill operation, cross-border payments and asset securitization (Wu and Duan, 2019). It is a beneficial technology by decreasing the transactions costs, enabling instant transactions anywhere in the world. For the blockchain SWOT analysis, we can say that tamper-proof, privacy protection and information processing efficiency are the strengths, governance, integration with existing businesses, data localization, deletion of written records and regulations are the weaknesses, modifiability based on the principles and standards is the opportunity, lack of awareness is the threat (Lemieux, 2017). Additionally, another study shows that fraudulent activities in the online business environment can also be resolved by blockchain technology (Cai and Zhu, 2016). With the pros and cons of the blockchain, most of the organizations realized its advantages and already started to adapt themselves. It is expected that blockchain will be mass adapted with high confidence to the technology, however, may cause disruptions (Filipova, 2018).

The music industry is one of the key industries that is affected by technological advancements and it is expected to adapt with blockchain technology (Puddlegum, 2021). The current music distribution and royalty collection system are outdated (PricewaterhouseCoopers, 2021). Slow royalty distribution and inaccuracy of the metadata in the music business causes the revenues to stay in escrow accounts (Gunderman, 2016). According to BMI, distribution is made on a quarterly based and if the total amount of money to be distributed is less than $250, BMI holds that amount until the amount passes $250 (BMI, 2021). Therefore, management of those accounts within the complex business environment that includes several entities can also cause irregularity. Due to that reason, the micro and instant payments model boost the current model. Micropayment with cryptocurrencies enables payments in a small number of cents and provides socioeconomic benefits (Khan *et al.*, 2019). Blockchain-based currencies can reduce the intermediary and transaction costs and may reduce the size of financial system governance (Budish, 2018).

Another promising topic in the blockchain area is NFT (Non-fungible token). Based on the conducted study, consumers of the musical works are disinterested in NFTs, however, NFT can be an extremely powerful tool to ease the wage problem that comes with the pandemic for artists and provide value to the consumers (Paolucci, 2021). (Rauman, 2021) states that blockchain's core technology may provide international transparency among all entities in the music industry, automated payments, intercepting the unnecessary third parties and thus increase the royalty payments. However, industry barriers are high due to the infancy of technology. With the help of the NFTs, artists and other entities in the music industry can keep track of the streaming, royalties and licensing. NFTs secure the uniqueness of the digital assets and ensure the identification of the records (Treleaven *et al.*, 2017). NFTs can be widely embraced if the technology is easier to use.

One of the biggest obstacles recognized by the industry to adapt to the blockchain is the unregulated environment. The Europen Commission initialized a pilot regime for market infrastructure in crypto-assets. This includes the companies that build their business on crypto-assets and cryptocurrency exchanges (European Union, 2021). (Carson *et al.*, 2018) states that to standardise, a single dominant player or governmental agency should mandate the legal standing. In 2018, based on the analysed 90 use cases, the study shows that scaled feasibility analysis of the blockchain may happen three to five years period.

In the financial area, blockchain may play a role by removing the third parties, thus may reduce the fees and management costs and remove the threat of manipulation (Oh and Shong, 2017). The study shows that blockchain technology can be broadly adapted instead of focusing on individual financial institutions. The integration of the whole domain can include user authentication and digital document verification.

2.5 Current Situation in the Music Industry

In this section, the current situation of the industry is discussed to analyze the developments, news and possible future trends. There are some companies at the early stages serving their customers with blockchain-based business models.

Musicioin is a platform that operates freely using its coin, called $MUSIC. The platform works with independent artists freely and they grow their platform from label catalogues and other artists (Musicoin, 2021). The platform works with only its currency and provides fair compensation, transparent contracts with smart contracts and no intermediaries. To buy a $MUSIC coin, customers first have to convert their Bitcoin in Bittrex or Cryptopia. Limiting the $MUSIC coin distribution and exchanging only defined platforms causes issues that are discussed in section 2.6.

Audius is another platform that promises security by enabling artists to have their content. They use their coin, called $AUDIO, aiming to create a fully decentralized community for artists and fans by providing a user-centric payment system. The platform is maintained by open source developers (Audius, 2021). One of the most promising developments of adapting blockchain is that TikTok partners with Audius to manage their massive music catalogue and royalty payments per video streaming is one of the expectations (Kaye, 2021).

Revelator is a cloud-based digital assets management platform, focusing on transparency in copyrights, working with more than 800 digital services to provide accurate insights and royalty payments to right holders.

2.6 Adaptation of Blockchain in the Music Industry

(Baym *et al.*, 2019) discusses that musicians and artists should distribute their work on the blockchain with resilience and willingness. Removing the middleman, ideally, is their incentive. On the other hand, the author also states that one of the concerns of the audiences could be the transparency that blockchain provides. Users do not want to share their listening habits, purchasing habits. It is suggested that "Layer of opacity at the final level of payment" may be the solution.

In another study, the question of "How technology would fit into the industry's supply chain?" is discussed (Sitonio and Nucciarelli, 2018). The author compares the different opinions of innovative business models creations and claims that blockchain-powered business models in the music industry can change the overall structure. The main issues identified by the research are the lack of transparency and content creators' bargaining power. The usage of blockchain and what it brings such as undeletable records keeping,

metadata analysis and smart contracts may make the intermediaries unnecessary. A problem is indicated as the limitation of the blockchain model usage due to the novelty of blockchain and digital streaming platforms powered by networks. The author claims that relatively small platforms, Audius, Revelator and Musicoin, will continue to operate but the uncertainty of the competition level with major DSPs, Spotify and Apple Music, will remain.

Another study states the benefits of adaptation of blockchain with the music industry in followings (Taghdiri, 2019):

- Smart Contracts erodes the known relationship between intermediaries and content creators. Purchasing platforms and financial third parties will be removed and content creators may obtain their revenue directly and fairly

- The information about the use and sales of the contents can be carried out with the widespread implementation

- Collective management organizations generally fail to compensate the right owners accurately so that a global copyright database registry can be developed with blockchain

As a counterargument, the author also investigates the barriers to wide adaptation. In the blockchain-based music apps, integration with the unregulated crypto exchange platforms, government identification systems, Etherum wallet opening make the initial process slow and user-unfriendly. From the average consumer point of view, exchanging cryptocurrencies even for only one coin makes it complex, let alone the usage of different crypto coins for different applications would be more complicated (Taghdiri, 2019). Another obstacle by the author is that the limited governance of the technology and unregulated business environment. Broader adaptation can be carried out with the promising regulated blockchain usage.

(Kumptner, 2019) indicates that the music industry has the awareness of blockchain-based streaming platforms. However, the number of listeners in those platforms is less than the major ones so most of the royalty generation comes from the major platforms. It is also stated that currently, exposure to the audiences is way important than the fairer compensation.

CMOs are defined as authorized organizations to conduct a management process of copyright or rights related on behalf of more than one rightsholder (Directive 2014/26/EU, 2014). CMOs are one of the key players in the music industry as they manage the licensing, copyrights and royalty payments according to existing contracts between the parties. In some cases, royalty payments could take years, which is even worse if the different parties operate in different countries, to be received by the content creators. With the adaptation of the digital era and blockchain, instant payments can be initialized and intermediaries can be obsolete (Giraldo Agurto, 2020). However, even if CMOs can be replaced by blockchain technology, it is accepted that CMOs are the organizations that support artists, negotiates contract conflicts and appropriate transaction rules.

As discussed in (Dutra *et al.*, 2018), blockchain can change how companies compete in the music industry, let alone the media and entertainment industry overall. The study focuses on the promising applications of smart properties which can also be used in other domains such as real estate or collectables, micropayments which substantially reduce the transaction fees and save time and smart contracts. As a consequence, the study states that it would be beneficial for the content creators since it gives ownership and creates faster monetization. However, from the view of record labels, PROs and others, it may seem like a threat unless the companies use blockchain-driven technologies as an aggregator to concentrate on their activities.

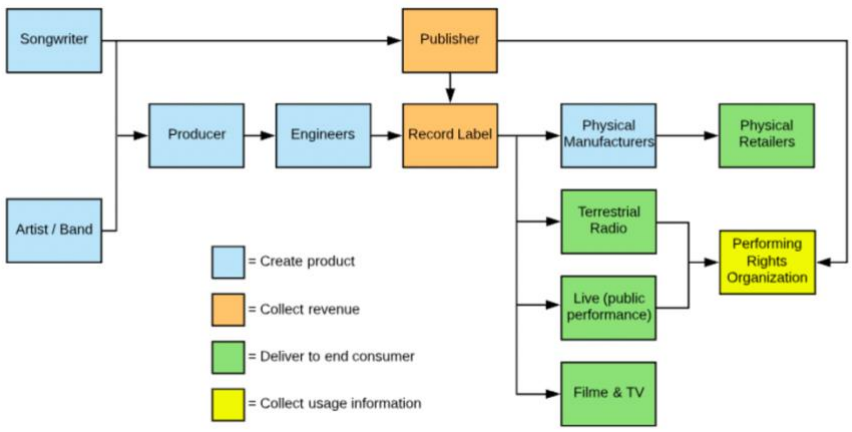

Figure 5 - Recorded music supply chain before digital media (Hosoi *et al.*, 2021)

According to (Hosoi *et al.*, 2021), record labels plays a significant role in the music supply chain as it is the core middleman among all players. They were obtaining 30% of the CD revenues. They were the key player as they handle artist relations, TV, movie and radio distributions and live performance arrangements. In Figure-5, the overall former structure of the music business player can be seen, however, with the technological developments, a drop in the physical media demand and online accessibility has changed the industry. Today, it is estimated that 62.1% of the total industry revenue comes from streaming services.

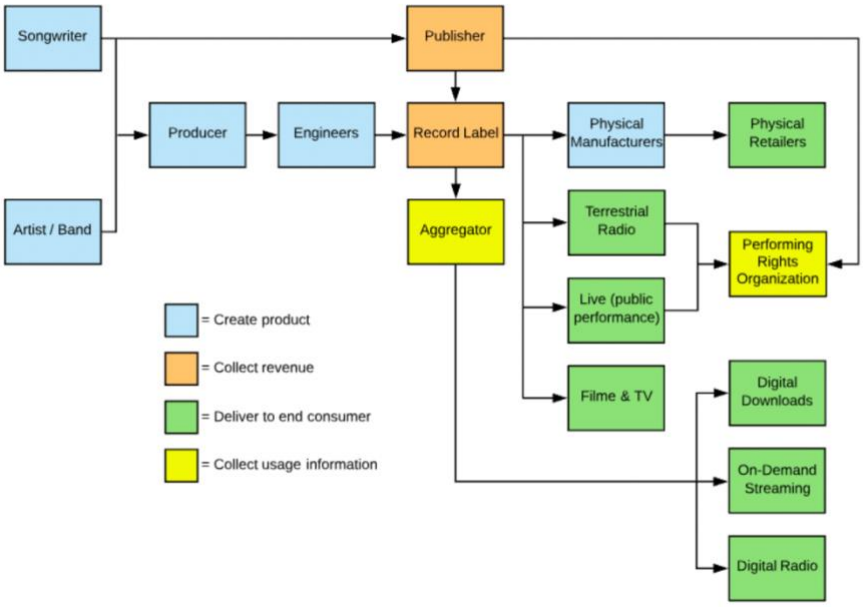

Figure 6 - Recorded music supply chain after digital media for major artists (Hosoi *et al.*, 2021)

First, technological developments hit the industry by adding three new players: Digital Downloads, On-Demand Streaming and Digital Radio. With the hit of Covid-19, live tickets sales worldwide dropped from 57 million to 13 million in 2019 and 2020 respectively (Clark, 2021). Artists, now, can produce content from home computers, however, their consumption of the music substantially increased with international streaming platforms and DIY uploads. These services have also their fee from the premium subscriptions.

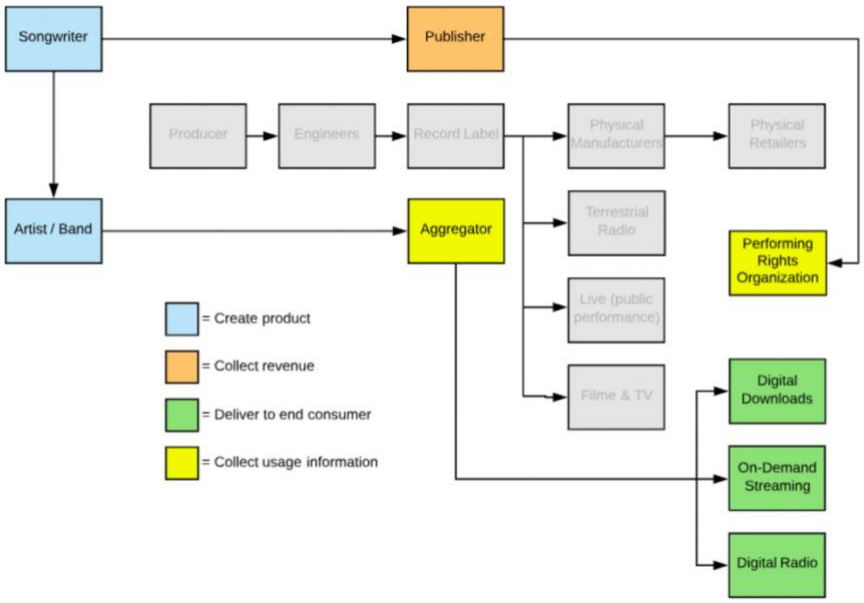

Figure 7 - Recorded music supply chain after digital media for small artists (Hosoi *et al.*, 2021)

On the other hand, for a smaller and mostly independent artist, most of the players are disintermediated. In 2019, independent artists would earn more than $1.6 billion. This figure is estimated to increase 37% in 2020 (Ingham, 2020). With that rapid growth internationally, record labels positions started to change whereas the royalty distribution model remains the same. Artists seek a better way to distribute their work and fairer monetization. The industry will adapt itself to suppress the existing traditional model (Hosoi *et al.*, 2021).

2.7 Conceptual Framework

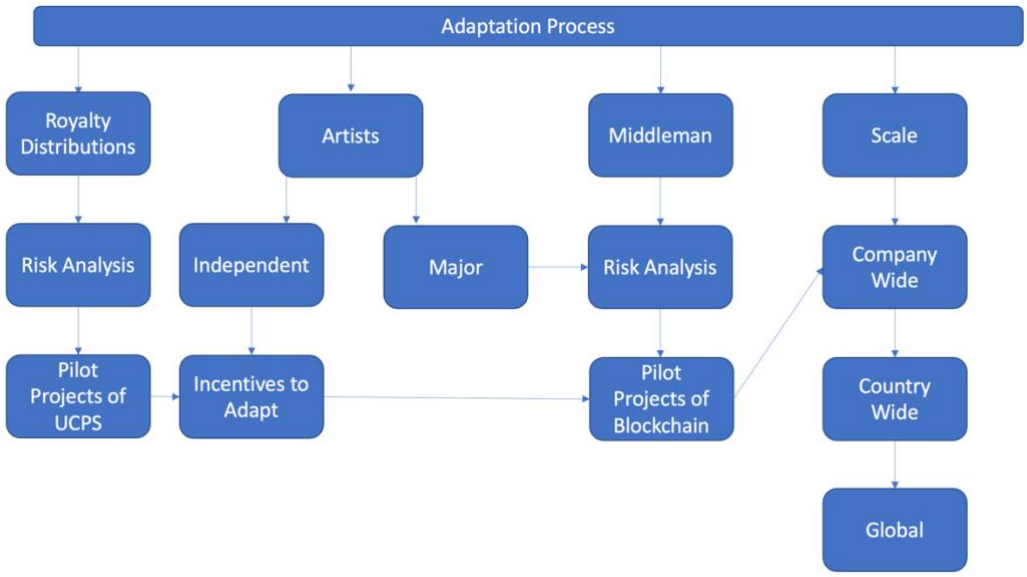

Figure 8 - Conceptual Framework

For the conceptual framework, the main aim is to reveal the adaptation process which follows a linear implementation. The first step is to conduct a risk analysis of royalty distributions and launching pilot projects of UCPS. This may happen company-wide for streaming services or only a small segment of the artist depending on the record labels contracts or only for independent artists with a new entrance to the industry. After launching the pilot projects, incentives may be given to the independent artists which is already an expectation from the industry. On the other hand, since the major artists have a strong relationship with middlemen, risk analysis may be carried out altogether. Therefore, pilot projects of the blockchain together with the UCPS can be integrated into the industry. At this point, scalability could be the main issue for the industry as the implementation and integration company-wide is doable than the countrywide or global integration. From countrywide to global integration, also the other financial instruments, mainly banking systems, need to be integrated with blockchain.

This study focuses on the risk analysis and pilot projects of UCPS with a literature review from both independent and major artist perspectives and how the industry structure may be affected. Moreover, how blockchain can be utilized to adapt a new revenue-sharing model along with its benefits. Based on the pilot project success, this process

can be repeated for the project. The study focuses on the relationship between variables in given Figure-8 and aims to clarify each relationship. As the model itself is brand new, the author decided to follow literature supported questions in the qualitative interviews which are discussed in section 3.

2.8 Conclusion

In conclusion, the existing royalty distribution model of the music industry is expected to change with rapid developments. UCPS may be the next revenue model of the industry, however, the model itself may harm the segment of the industry. With the existing research and industry developments, UCPS seems ready for adaptation however full transparency and securing of the payments should be considered as well. In this regard, blockchain plays a significant role. Adaptation of UCPS with blockchain may be the new model in the industry and change the overall structure by removing or reducing the bargaining power of middlemen. In addition to revenue distribution, UCPS can also help the industry tackle fraud issues that benefit streaming services and piracy. Blockchain adaptation to the industry may provide quick transactions, better data management, save time and copyright tracking. This study focuses on UCPS adaptation and how blockchain technology can provide a better solution for this purpose.

3 Methodology and Research Design

3.1 Overview

In this chapter, the method used in this study is discussed in detail. The process for collecting primary data and evaluating is explained step by step based on the research questions.

There are mainly two methods for conducting research, the qualitative and the quantitative approach(Bryman and Bell, 2015). Qualitative research is conducted in an open research way to analyze the phenomenon (Bryman and Bell, 2015). The purpose of the qualitative approach is to build new concepts. After determining the research objectives and questions, conducting an interview is used to obtain information as much as possible. This is explained in Section 3.4. As opposed to quantitative research, qualitative research can provide a better comprehension of the research topic (Bryman and Bell, 2015). Qualitative research provides results with the evaluation of generalized exploration and framework building.

3.2 Research Philosophy and Approach

This research study uses the qualitative approach. Blockchain technology is still underdeveloped and its usage in the music industry is limited and ambiguous. As a result that, there is a lack of information for the adaptation of blockchain technology to the music industry. Hence, qualitative research can develop a better understanding of the context of blockchain adaptation with the music industry by focusing on the royalty distribution models. The selected qualitative approach in this research aims to obtain a better understanding of blockchain-based user-centric payment systems in the music industry. By doing so, the author aims to define the possible bottlenecks and steps to implement the process and how blockchain and user-centric payment systems can benefit each other in the music industry.

3.3 Research Strategy

In qualitative research, different designs can be used such as experimental, comparative or cross-sectional designs (Bryman and Bell, 2015). In this research, the case study method is chosen. The music industry consists of different parts: artists, record labels, publishers, distributors and other stakeholders. Hence, information to be obtained addresses different views. To obtain a comparable and better result, multiple case study method is chosen. This method offers realisable results with the help of multiple cases and a comparison of different approaches (Saunders *et al.*, 2009). Since the study aims to evaluate the big picture in the music industry, the author focuses on the diversity of the cases with cross-functional areas such as music technologies, micropayments in finance, blockchain technology usage and adaptation of blockchain with the industry. Therefore, this enables to conclude generalized results in the context of the research study.

The study offers selected cases within Section 3.4. These cases consist of a diverse set of industry people in the music business, product management in music streaming, legal in the music business, technology companies specifically focuses on blockchain technology, big data firms on music metadata collection and royalty distribution companies. The size of the companies are diverse and the location of the companies is selected as international as possible since the nature of the music business is international as well. All selected cases have different knowledge about the music industry but all have a focus on the music business in general.

3.4 Collection Primary Data

3.4.1 *Sources*

In this research, primary data collected by the author is used to evaluate the research objectives. Primary data can be obtained by using several methods: interviews, observations, experiments and target group focused surveys (Walliman, 2011). Information gathering with the interview is the most commonly used method in qualitative research(Bryman and Bell, 2015). With the help of online communication,

time arrangements and accessibility to the interviewees, interviews provide an efficient way to obtain information (Walliman, 2011).

The interviews conducted in this research are semi-structured. Semi-structured interviews are the most common interview method within qualitative research (DiCicco-Bloom and Crabtree, 2006). Questions are selected as open-ended questions and the interviews themselves are conducted based on the interviewee's answer spontaneously and their knowledge about the topic. All of the interviews are conducted in English. In the case of unavailability of respondents given the research delivery time, questions are delivered with email and received.

To obtain different views, the author focuses on different countries and different areas of the music industry. In some companies, blockchain technology and the music industry intersect as a business therefore semi-structured questions are fully asked participants. With the help of the author's supervisor, questions are predefined. The author aimed to ask all questions during the interview but due to the time limitation of the respondent and spontaneous process, questions are prioritized based on the interviewees' experience. In appendix-A, all questions can be seen.

The chosen companies and interviewees are selected based on the company area and interviewees experience. Due to the infancy of blockchain technology, lesser-known user-centric payment systems and different areas of the topics; blockchain, music business and technology, interviews are made with executive levels. In below, the area of the interviewee's company, their role and their area of expertise are defined.

Interview Number	Interviewee	Company Area	Position	Area of Expertise	Years of Experience
1	A	Digital Rights Management Organization	CEO	Software & Business & Music	22
2	B	Digital Rights Management Organization	CEO	Software & Business & Music	28
3	C	Music Innovation Technologies	Director	Software & Business & Music	40
4	D	Digital Streaming Service	Crypto Musician & Software Engineer	Blockchain & Software & Music	12
5	E	Digital Streaming Service	Head of Royalties	Software & Business & Music	10

Table 1 – Interviewees Profile

3.4.2 *Access and Ethical Issues*

To sustain an ethical study, there are four principles to be followed (Bryman and Bell, 2015). The first one is that to publish the objectives of the research and the expected consequences of the study with the participant. The anonymity of the candidates who contributed to the study plays a significant role. In addition to their contribution, protecting the transcripts, sound files and recording videos are protected. Collected data is only used in this research for scientific purposes. Any harm or negative influences are exploited for the individuals (Bryman and Bell, 2015).

3.5 Approach to Data Analysis

To perform data analysis, all interviews except the two that were conducted over email is transcripted to provide a better qualitative data analysis. As the first step, the separation of the candidates based on the interviewee's experience is carried out. With that process, similarities and differences of the answers are determined. All of the categorised given answers are matched with the theoretical framework. By doing so,

analysis of both theory and industry knowledge deepens and give the author a wide-range perspective to evaluate the results. Given questions indicated in Appendix-1 and categorization and the labelling of questions with main keywords based on their purpose can be seen below.

Q1) Blockchain, Copyrights, Digital Music Content

The aim in Q1 is to reveal the differences between the current model and the blockchain-based model for digital content.

Q2) Blockchain, Middleman, Adaptation

The aim in Q2 is to reveal the effect of blockchain adaptation for a middleman in the music industry.

Q3) Blockchain, Adaptation, Disruption

The aim in Q3 is to reveal the possible disruption of blockchain adaptation in the music industry and recognize the harm or how we accelerate the adaptation.

Q4) Blockchain, Technology, Adaptation, Bottleneck

The aim in Q4 is to define the main issues from the industry's point of view for blockchain adaptation.

Q5) UCPS, Its Variations and the Value of Music

The aim in Q5 is to reveal the deficiencies of the UCPS model if any, how it can be modified and how the music should be valued.

Q6) Pros and Cons of UCPS, Adaptation, Pilot Projects

The aim in Q6 is to reveal the UCPS view from the industry and how the pilot projects can be developed.

Q7) UCPS, Dynamic Structure, Competitiveness, Transparency

The aim in Q7 is to disclose the competitive relationship among the entities in the music industry.

Q8) Blockchain, Long-term Adaptation

The aim in Q8 is to reveal the possible long-term effects and how the industry should approach those.

Q9) New Entry, Start-ups, UCPS, Blockchain

The aim in Q9 is to reveal the possible new entry and how the industry would react to that.

Q10) Cross Border Transaction, Financial System, Blockchain

The aim in Q10 is to reveal the effect of a wide range of blockchain adaptation and its effect on the financial system.

Based on the questions keywords, analysis of findings are divided into 3 sections: UCPS, Blockchain, Adaptation of UCPS and Blockchain in Music Industry

All of the interpreted results can be seen in the Presentation and Analysis of Findings section.

3.6 Conclusion

In a conclusion, the selected methodology is qualitative research through conducting semi-structured interviews. Chosen interviewees are selected based on their experiences and area of expertise from the relevant music business companies and their years of experience is considered. The analysis of data is categorised and paired off with the literature.

Presentation and Discussion of the Findings

This chapter will discuss the findings of the selected topic. Description of the interviewees' profiles is defined in section 3.4.1 in Table-1.

3.7 Overview

Each answer given by interviewees is categorized in this section. Due to the time limitation and the flow of interviews, not all questions were asked and some of the comments are excluded where irrelevant. Differences among the answers will be discussed where possible and referenced to the previous literature review section. In the first part, the author analyses the UCPS related answers under 3 categories; pros and cons, the adaptation of UCPS, bottlenecks and competitiveness. Secondly, then the effect of technology and blockchain together with the possible adaptation actions and recognized bottlenecks for the adaptative process are discussed. In the last section, how UCPS and blockchain technology can be utilized and together how the industry benefits from these integrations.

3.8 Findings

3.8.1 *UCPS*

In this section, the pros and cons of UCPS, adaptation, bottlenecks for adaptation and possible competitiveness effects are evaluated.

3.8.1.1 Pros and Cons

"I would base it on a pro-rata split of the time I have spent on each song vs the total time on the platform in a month." – Interviewee A

As discussed in (MBW, 2021), the pro-rata model comes with issues, however, stream-based UCPS may also create problems based on the genre's length and record labels that work with artists composing shortest genres would get the most benefit. Nevertheless, time base pro-rata is another model to be considered as it also eliminates some piracy discussed in (Dimont, 2017).

"I would still distribute each user subscription fee pro-rata depending on the time they spent in each song. This would also eliminate some sorts of piracy where we have seen songs artificially boosted by bots." – Interviewee A

"When you buy your CD, for example, when the money you pay goes to the artist and not just to a common, but where everybody is shared. So we thought it was fairer and that's why we're pushing for it, because we know it's possible because we implemented it." – Interviewee E

Based on the answer, we understand that UCPS implementation is possible as it is already developed by Deezer (Deezer, 2021b).

3.8.1.2 Adaptation of UCPS

In Q6, the author sought the answer to Will Page's argument (Mejía, 2019).

"So we've been trying to do it for four years now, so we are talking to them constantly about it every time we have a chance to do it. All of our new contracts and with things signed with the new label, we should disclose." – Interviewee E

"Quite a good number that already agrees with that. We have labels they wanted. So we need to have everybody under the same boat." – Interviewee E

As can be understood from the comments, to adapt the UCPS, most of the industry should focus on adaptation and sharing the information they already have as is also indicated by Alexander Holland, chief content and strategy officer of Deezer (Musically, 2020).

"That's how we increase the that we were showing already with everybody because the issue was that some people were saying that we were selling data that seven figures, but there were there was no proof of it, and they couldn't verify it. So now it has been verified by an independent company. So, yes, we're trying to convince people that this is fair. It's difficult to move because people want to make sure that the labels want to make sure that they will earn enough money." – Interviewee E

It can be stated that verified adaptation as proof can boost the process. Even though the adaptive process is recognized lately, key determinants may be an aid for marketing and sales strategies (Jahanmir and Cavadas, 2018).

3.8.1.3 Bottlenecks for the Adaptation of UCPS

"We need as many people as possible to be in what they think the artist should be under. This is difficult for them to go against the label because if their label doesn't want, they couldn't. They are the people who pay their bills." – Interviewee E

According to (Hosoi *et al.*, 2021), middlemen are the key player in the music industry and record labels is one of the biggest. It states that record labels are the entities in the music industry to decide the full adaptation of UCPS.

3.8.1.4 Competitiveness with UCPS

With UCPS, streaming services payments for the artist may not be disclosed to other competitors. In Q7, the author investigated the possible competitive structures in the industry based on that.

"I am sure there will be companies willing to provide the data." – Interviewee B

"That's what it should happen. And this clearly that it should be more regulated than what it is, and it should not be left to industry to decide these types of things that now are very sensitive. So it has to be more regulated and based on transparency." – Interviewee C

(Halter *et al.*, 2009) indicates the importance of transparency to improve the relationship between artists and businesses.

"There's big pockets of music that are not accounted for. And therefore, they have big freedom on distributing that according to what they want. So, yeah, for me transparency would be a fundamental thing that could trigger big changes technologically and these more scientifically based criteria." – Interviewee C

"We try to find solutions so they can take competition and they could own this. So they will have more information that will allow them to assess and verify these numbers.

Indeed, it should not be as easy to try to analyze because we will need as a number of users, what is the total number of the screen for each other." – Interviewee B

It can be stated that with information sharing among the entities, competition may increase.

3.8.2 *Blockchain*

3.8.2.1 Technological Benefits

Another topic is that how we value music and how first technology and then blockchain can help to accurately accomplish that.

"We are working on a project, the one that is very much related to this, which is the fact that its music identify, even if it's if it served as a prominent music or is kind of in the background and so now there is a need to be able to distinguish that, because there will be different rights if you just have music in the background that he's not heard very much." – Interviewee C

Digital rights management companies offer a service called, audio fingerprinting (Castells and EDS, 2013). Detecting those musical works and delivering the obtained revenue to music rights play a significant role for artists.

"This has triggered things in the rights management companies to put to collaborate with TV's to play the unheard music. And that generates rights. We are working on a project that aims at trying to put a value of how much that music is heard in the overall mix so that then you can assign" – Interviewee C

It is promising that technology can offer a solution for piracy and royalty management. Even though %62.1 of music royalties come from streaming (Hosoi *et al.*, 2021), TVs and radios play another part as well.

"So technologically, there is a lot of opportunities clearly to figure out things that make sense, because, in the end, it has to be based on some musicological perceptual studies. And that's not being done." – Interviewee C

One of the interesting points with technological adaptations is that:

"The big thing about our platform is that we don't need a lot of people to maintain it or to develop it like Spotify as thousands of employees. They all need to get paid as well. We are just working with centralized technologies that are almost free. Most of the time, we just have some server costs and a small team to pay some marketing, and that's it. So we don't need that much and that way, we can give more to artists." – Interviewee D

(Krishnamurthy, 2005) states that the future of open-source software is bright and will place in our lives widely. As indicated in the literature review, the Audius blockchain platform is maintained by open source developers (Audius, 2021) so that streaming platforms can save costs for artists.

"Big bands already have contracts going on, like anything they do, they have to take it into account. And, on our system, it can automatically distribute debt as well. Like if they signed that, some management or some label gets a portion of it or they can also hire someone to manage the music on the platform."– Interviewee E

As is stated in (Rauman, 2021), blockchain can provide an instant and fully integrated automated micropayments service to the industry.

3.8.2.2 Adaptation of Blockchain

"I find it difficult to believe there will be disruption unless some big size middleman buys in. A big majority of rights are in the hands of middlemen now, CMOs, Publishers, Labels, not in the hands of artists or creators. I would say the closest of a user-centric model that bypasses a lot of middlemen is Youtube paying creators sharing the advertisement money they contribute to generate." – Interviewee B

"There have been some demos but this is tied with the whole ecosystem in the sense in and every one of fundamental elements that prevent any change is the record labels, but also very importantly, the authors and the authors' societies." – Interviewee C

"Ecosystem of interests and complexities, when Spotify started all of these I mean, they had ideas about disrupting the whole market and then they didn't because they were completely tied." – Interviewee C

"I know that the in the small labels at the end, they all have to go through Spotify. And because they have to go through Spotify, they are also bound by the criteria that the Spotify has nowadays is so difficult to start a company and make it survive because of the big, the big get bigger and the smaller gets smaller" – Interviewee C

For the adaptation of blockchain without disruption, middlemen, since they have the biggest bargaining power in the industry, should lead the industry. Another solution for the imbalance of power in the music industry is that compulsory licensing would enable competitiveness with transparency and fairness, as well as break the gatekeeper position of the major record labels (Teague, 2012).

As an answer to the disruption effect of the blockchain, the following comment was made.

"I do not think in the short term. Make them participate" – Interviewee B

3.8.2.3 Bottlenecks for the Adaptation of Blockchain

"I think in some countries, maybe with strong regulation and this kind of things and forcing fairness and things like these, and it could be possible. But I find that it's very, very difficult to try now to enter this distribution market." – Interviewee C

"Yes, some labels threw current system out and they should follow and try to maybe propose a new system." – Interviewee E

As it is indicated, the music industry has strong entry barriers due to the big players. Nevertheless, that issue can be solved via regulations or by the big players themselves.

"Whether these features will be introduced by blockchain or by other technologies, I find disintermediation to be the most powerful as it questions and challenges very important and consolidated parts of the industry." – Interviewee A

One of the counter-argument made by Interviewee A is that blockchain technology may not be the solution for the industry since the middlemen are the core of the industry.

"I think the middleman would like to stay and is not likely to be displaced in the short term. I think the first version of a blockchain system is going to be in a private or federated blockchain network owned by the middlemen." – Interviewee B

Another argument states that blockchain technology can be adapted to industry and the first part of that will be owned by middlemen.

"Blockchain is a technology. You can offer the very same set of attributes of a blockchain without using blockchain. Typically I've only seen the other way round, companies trying to solve problems that don't need blockchain with blockchain." – Interviewee A

A study states that when blockchain-based systems outweigh the benefits of legacy systems, a shift will happen (Pisa and Juden, 2017).

Another argument is:

"So I think the issue is to make sure that everybody gets paid. This will help everybody because the middleman stays and we still will be able to put more money and this would be good. But I think it just it's a bad vision of the team because if we manage to solve the problems with the money that is lost, it's better for everybody. Even if you lose a bit of control of some stuff, you will gain as well." – Interviewee E

"Data ownership and politics. It's hard to convince competing companies in different markets – labels, publishers, CMOs – to get together and share their data for the sake of realizing someone else's vision or aspiration." – Interviewee A

The main bottlenecks are data ownership and politics for the adaption of blockchain. Data ownership can be solved by developing a global database. (Pisa and Juden, 2017) suggest that government agencies should provide incentives for businesses.

"Like last bull markets, we were the first one. And yeah, there wasn't that much interest yet. But I think with it, the pandemic and all artists are more looking to find more ways to earn more income because they can't perform live in a lot of places and things." – Interviewee B

With the hit of Covid-19, artists lost 95% of their income due to the close of venues (SoundRoyalties, 2020).

"So it's I think I think it can be interesting for them in the short term. But, you know, this money is very volatile. And I know that some companies are trying to use it in the music industry. But I think the issue is more global" – Interviewee E

3.8.3 *Adaptation of UCPS with Blockchain*

As a part of UCPS with blockchain adaptation, the author considered the deficiencies of UCPS how they can be compensated with blockchain, moreover how blockchain can ease the adaptation process and create a transparent, fair and more effective industry.

3.8.3.1 Single Source of Truth

"Ownership would live in a shared environment instead of silos. It would be immediately updated in all nodes allowing all agents to distribute with an updated picture of ownership. Changes in ownership and conflicts would be dealt with with more transparency. Payments could happen in the blockchain." – Interviewee B

Having the data in a shared environment would increase the data integrity and data accuracy so that all of the entities in the music industry may benefit from that. Additionally, all systems can be used as a single source of truth to deal with copyrights conflicts. With the UCPS data on the blockchain, shared and published information may help the industry to grow all together.

"If we had every single blockchain case, it could remove a lot of the work from collecting society or try the matching parts of the collecting society, because it's a big part of the work. So indeed, if we had every single blockchain and the link was direct, this could remove this part of matching." – Interviewee E

"We need to convince people that they need to share more information, that we need to to have a monitor that more present, to tell you we need the artists to understand that metadata is crucial and that they need to fill in the information as soon as possible." – Interviewee E

The comment supports the idea of a global copyright database registry can be developed with blockchain (Taghdiri, 2019).

3.8.3.2 Data Ownership and Transparency

"But for me, blockchain technologically is aligned with the idea of developing technologies that are proposing new ways of controlling ownership and being able to together, let's say, validation to transactions in a way that is different from what has been done until now and has the potential of making a lot of changes. But these many of these changes only happen if it's they are used and taken by the society and by the companies that are involved." – Interviewee C

(Assal *et al.*, 2019) indicates that even though blockchain is yet to mature, it can be used to cover the problems of the back end of the industry and offered as an incentive but issues has to be resolved in the first place. Moreover, the study states that blockchain has the potential to increase transparency and the pace of royalty payments.

"So independent artists can easily use it and they can set up a contract which is a smart contract. For every stream count, the proceeds from that to one address, or you can also, yes, at multiple addresses and a percentage of what kind of percentage from each play do you want to distribute to the rest of your band, for example? So you can like I'm in a band with five people, let's say everyone gets 20 per cent. Then for each play, it will distribute that percentage to each member." – Interviewee E

3.8.3.3 Ease of Royalty Distributions

Another use case shows us that blockchain can be used to create a direct connection between artists and users so that the distribution of the payments can be initialized instantly based on the predefined rates.

"They can just manage their content. Of course, they can also choose to have someone else manage it. And he can get a percentage as well. But. About the ownership. We're also working on various models to include NFT in the next year or so" – Interviewee E

One other promising idea is to include the middleman in the distribution chain with blockchain which means that integration of middlemen with the full system is possible.

"We have been trying for ten years to develop a sort of a monetization model on top of our platform that artists can upload and obtain rights of their works, so that authors, sound authors, in this case, can sell sounds to other people. Because we get requests for

many people that they want to do some sound that may not have the commercial rights and then they want to have them. So if you want to sell a sound from one country to another, that is depending on the country. The legislation is different." – Interviewee C

"We're talking about the sound will be 50 cents or something like that. Not only that but to develop the whole ecosystem legally" – Interviewee C

It can be stated that legislation in different countries is also a burden for the global integration of musical works. One of the main blockchain adaptations may be the financial global regulation.

3.9 Discussion

This study aims to investigate the possible adaptation methods and bottlenecks of UCPS, blockchain and how they boost each other. In general, the general condition of the global music industry focusing on streaming services were evaluated. Through five qualitative interviews data was collected. Analysis was conducted in 3 main categories with subcategories.

Firstly, UCPS can benefit the industry, predominantly artists. However, stream-based UCPS may reveal issues so that time-based UCPS could be another option since the length of songs may create an issue from the record label's perspective. In stream count based models, longer songs get less revenue comparing to shorter ones. Record labels that work with genres having longer lengths may get harmed. Raising awareness of the UCPS can be the best option to see the industry reaction. Companies may focus on marketing and sales for their UCPS models. Moreover, proof of concepts or any kind of validated data can be shared with the industry by independent and trusted third parties.

Record labels play a significant role in the industry so they should be the first entity for any adaptive process so that a stronger industry can be built. Especially after the pandemic, label records may face losing their artist due to the unaffordable life expenses and royalty imbalance.

For competitiveness and sustainability in the industry, data sharing is critical. Not only between streaming services and artists but also including middlemen can be prioritized.

Transparency is another key in the industry whether it is developed with blockchain or not.

Technology can boost the industry as it has been in the last decades. Audio fingerprinting technologies, global copyright databases, UCPS and especially international agreements between governments for digital contents can be reconsidered. Not only music streaming on online platforms, but also in other media should be tracked for royalty distribution through technological innovations. Especially, open-source and free technologies can boost the economy in the music industry with the money that is left from royalties and that revenues can again be used for innovation.

Middlemen can still manage the artists and be part of better, accurate and clear royalty distribution. Specifically, micropayments can be considered in the industry by the financial institutions or blockchain may replace that in the long term. As middlemen manage the industry due to the services they provide, it is expected to stay in the industry. Transparency and fairness can be prioritized and making every entity involve into adaptation process create benefits to all industry.

One of the biggest bottlenecks for the adaptation of blockchain in the industry, as it is defined in both literature and interviews, is regulations. The second bottleneck is the resistance by the middlemen and unwillingness for a change. However, with the technological developments, open-source technologies and pandemics, this may change. Global data management is also another issue that creates conflict between entities, which extend the royalty distribution process.

For both UCPS and blockchain adaptation, a single source of truth is necessary, however, centralized databases can create a bargaining power so blockchain adaptation can be externally initialized in the industry. Data integrity, data accuracy and data ownership for the content creators are the keys to the adaptation process. NFTs may reveal a solution for the ownership of digital content. With the development of UCPS, fairer royalty distribution can be initialized and blockchain-based data management and micropayments model may boost the UCPS integration as long as the legal part of the integration is completed first.

3.10 Conclusion

The topic that is examined in this study is the adaptation of UCPS and blockchain for the music industry. As a conclusion of findings, adaptation can be carried out around the middlemen in the music industry by ensuring the equal participation of each entity. In the short term industry may create a proof of concept to analyse the possible future and in the long-term industry, the structure may change based on the technological developments and participation in the industry.

4 Concluding Thoughts on the Contribution of this Research, its Limitations and Suggestions for Further Research

In this section, the contribution of the study to both academia and industry is indicated along with its limitation and future recommendations.

4.1 Implications of Findings for the Research Questions

- What are the pros and cons of the current royalty distribution models in music streaming businesses?

  The current model pro-rata has flaws such as opacity, black-box calculation and it is open to piracy on most of the platforms. The model started with the introduction of streaming services based on the record labels control. The flaws of the model have been discussed in the industry and we have seen several pilot projects.

- What might be the possible outcome of switching to a user-centric model for artists?

  Artists may benefit from a fairer model. Fan powered royalties can help most of the industry to sustain its current situation even if in the light of a pandemic. UCPS model can create a transparent and trustworthy industry. Intermediaries, mainly record labels can also take advantage of this model in the long term and UCPS can be a retirement plan for artists in the future.

- What might be the possible outcome of switching to a user-centric model for businesses?

  Businesses benefit from UCPS as they contribute to artists and support each other. Since the record labels may face losing their catalogue under the current model, UCPS can be the solution to everyone.

- How can the industry be adapted to a user-centric model?

  To adapt the UCPS, proof of concept and validation of completed works by the independent organization should be published for UCPS adaptation, thus industry players can encourage other players.

- How the blockchain technology can be adapted for royalty distribution to the music industry?

  As the UCPS model aims to create transparency and fairness in the industry, blockchain can boost the music economy with micropayment, decentralization and transparency as the nature of the technology provide those.

- What are the effects of adapting blockchain technology to the music industry?

  The current system does not support instant royalty distribution and create flows during the process both between companies and countries. Blockchain may provide data integrity and accuracy to the industry so the management of the music businesses can benefit from the technology as it is cost-friendly and time saver

4.2 Contributions and Limitations of the Research

The research shows the UCPS integration benefits everyone in the industry and blockchain can be used to utilize that as a core system. Middlemen supported the industry with technological developments is possible.

One of the main limitations of the research is to qualitative interviews which have a total amount of five. Selected candidates are executive levels since the topic of the research is lesser-known. In another study, qualitative interviews can be extended to every entity

in the music industry with a mix of qualitative interviews and surveys, moreover pilot projects in the industry can be carried out under music business schools.

Another limitation of the study is the infancy of blockchain technology and use-cases in both academia and industry let alone UCPS is a newly considered calculation methodology. Even though, the interviewees know the calculation, the awareness of UCPS is not strong. Moreover, the industry is not aware of the benefits of blockchain. Ambiguous use-cases and the lack of technical knowledge among the developers cause abstainism.

4.3 Recommendations for Practice

The author suggests that industry players, which includes technology, music business entities and law, can create a proof of concept innovation solutions and conduct an extensive feasibility analysis. The current status of the industry players allows using of big data, blockchain and any kind of financial integration. The recommendation is not made for the music industry only, it could be extended and international digital content management such as videos, movies or even written texts.

4.4 Recommendations for Future Research

As the listening habits differ, any other pay as you go model can be developed through instant digital small loan models as the subscription fees are affordable for the public. As the legal part of the study creates the biggest bottleneck, research can be extended to PhD in law departments for international IP rights and management under IT law. Another recommendation is to reconsideration of international tax implications between different zones and how they can be changed for digital content distributions.

Further research should be carried out with the contributions of both academia and industry in research centres focusing on technology and law. It should be noted that the research budget is allocated accordingly and may be supported by government agencies since the regulations are a big part of the work.

4.5 Final Conclusion and Reflections

This thesis aims to reveal the music industry interaction for the future and possible developments. The author focused on technology, a fast-paced dynamic business environment and music. In summary, the author believes that the music industry will change substantially with cross-domain interactions.

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Appendices

Appendix A –

Q1) What do you consider as the benefits of having ownership of digital content or intellectual property rights on blockchain comparing to the current centralized model in terms of businesses?

Q2) Blockchain is a transformative technology as it removes the middleman, provides transparency, enables peer-to-peer sharing systems and instant micropayments. So what do you think that industry will respond to that change and how the existing middleman will be affected?

Q3) Is it doable that the adaptation of blockchain can be carried out without disrupting any existing businesses or stakeholders? If your answer is no, what are the possible steps to reduce the harm? If yes, what are the necessary steps for adaptation?

Q4) Both academia and industry acknowledge the significance of blockchain technology but what is the bottleneck of adaptation here and how it can be tackled?

Q5) From the technological perspective, a user-centric payment system comes with its complexity. Approximately 30 seconds is counted as a stream on some platforms but the length of the song or content of the first 30 seconds may create some flaws. In a user-centric payment system, a user who has 60 minutes listening session can listen to 10 songs in classical genres with an average length of 6 minutes per song or 20 songs in electronic genres with an average length of 3 minutes per song, therefore, longer the song causes higher revenue generation. Based on that logic, what are the other flaws of the user-centric payment system in addition to the length and context of the song? How

music should be valued? Is it something that the artist can decide or should it leave it to the fans? What are the possible factors that have to be considered?

Q6) According to Will Page (Former Director of Economics in Spotify), a user-centric payment system will come at increased cost and the value of a stream will be more volatile and less predictable. Without fully adapting the user-centric payment system, how the prototype model or any demonstration can be done to see and predict the future effects in the market? How are we going to test it? What could be the roadmap in the industry?

Q7) User-centric payment system can provide transparency and a fairer model between the artist and the platform. However, in a user-centric payment system, as each user will behave differently, other companies and competitors (label records, DSPs) will never know how much other artists approximately get paid in other platforms as we can estimate it with analytical tools. Can it change the dynamic of the industry? What could be the new dynamic of the competitiveness in the industry?

Q8) Blockchain can play a transformative role here and all of the industry can evolve to one big decentralized financial (DeFi) system and enable micropayment model instantaneously. Based on the literature, it may create long-term uncertainty in the music industry. What might be the possible reactions from the financial point of view? How the initial investments can be changed and how can we incorporate them with investors?

Q9) We know that some companies out there are trying to build their peer-to-peer sharing system. The music industry is built on networking but hypothetically speaking, if a new company enters with a strong value proposition with a user-centric payment system and technological infrastructure on blockchain integrated with label records,

distributors, publishers, artists and other stakeholders as well, what could be the reaction from the existing companies in the industry? Could it cause any kind of disruption?

Q10) As the legal part of the blockchain is still underdeveloped and unclear, what needs to be done to adapt a GLOBAL integration between DSPs and artists, also the other stakeholders? What should be the policymakers approach?

Q11) In terms of payments, as blockchain enables cross border transactions between any parties easily with tokens, how the current financial system could support that?