INNOVATING IN THE MUSIC INDUSTRY: BLOCKCHAIN, STREAMING & REVENUE CAPTURE

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ABSTRACT

Title: Innovating in the Music Industry: Blockchain, Streaming and Revenue Capture
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Music industry revenues experienced a boom when digital music became available and the music business reinvented itself. Even with the existence of piracy, the business has been growing since 2015. A lot of the credit goes to streaming platforms that introduced the notion of access instead of ownership as the dominant business model (BM). However, the main financial beneficiaries are the platforms, labels, and publishers (the middlemen), whereas musicians receive little from streaming their creations. This is due to an outdated royalty distribution system that was applied to the new BM.

This study aims to propose an updated BM by innovating the industry's payment framework with the use of blockchain technology (BT). It would create a fair and transparent accounting system as well as promoting trust for all professionals in the system. Secondary data on strategic innovation, the music industry, and business model innovation were analyzed in this study. Qualitative and quantitative primary data was collected through a survey and semi-structured interviews conducted with industry professionals.

Results revealed that BT could be a game-changer in the way the industry accounts for and pay royalties. However, there is little knowledge about the use of BT so no immediacy to bring about its implementation. Also, the industry lacks incentives to change the BM as big players run the show leaving musicians without little agency to bring about change. Finally, the study concludes that even though BT is a possible solution, the industry might not yet be accepting of this kind of change.

Keywords: Music, Music Industry, Blockchain Technology, Business Model, Business Model Innovation, Strategic Innovation, Technology, Royalty Distribution, Royalty Payment, Copyrights, Transparency, Trust

RESUMO

Título: Inovação na Indústria da Música: Blockchain, Streaming e Captação de Receita
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As receitas da indústria da música passaram por um boom quando a música digital ficou disponível. O negócio se reinventou. Mesmo com pirataria, o mercado vem crescendo desde 2015. Grande parte se deve às plataformas de streaming que introduziram um modelo de negócios (MN) de acesso, em vez de propriedade que dominava o mercado. No entanto, os principais beneficiários financeiros são as plataformas, gravadoras e editoras (os intermediários), enquanto os músicos recebem pouco de streaming. Isso se deve ao sistema de distribuição de royalties desatualizado que foi aplicado ao novo MN.

Este estudo tem como objetivo propor um MN atualizado, através da inovação do sistema de pagamento com o uso de tecnologia blockchain (TB). Esta criaria um sistema contábil justo e transparente, além de melhorar a confiança dos profissionais no sistema. Dados secundários sobre inovação estratégica, indústria da música e inovação em MN foram analisados . Os dados primários qualitativos e quantitativos foram coletados por meio de pesquisa e entrevistas semiestruturadas realizadas com profissionais do setor.

Os resultados revelam que a TB pode mudar o jogo em relação a contabilização e pagamento de royalties. No entanto, há pouco conhecimento sobre o uso, portanto não há imediatismo por parte da indústria para implementa-la. Além disso, a indústria carece de incentivos para mudar o MN, já que grandes players conduzem o show, deixando músicos sem alternativas para promover mudanças. Por fim, o estudo conclui que, embora seja uma possível solução para o problema, o setor ainda não aceita esse tipo de mudança.

Palavras-chave: Música, Indústria da Música, Blockchain Technology, Modelo de Negócios, Inovação em Modelos de Negócios, Inovação Estratégica, Tecnologia, Distribuição de Royalties, Pagamento de Royalties, Direitos Autorais, Transparência, Confiança

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DEFINITIONS

Blockchain Technology: a term to describe the technology in the most generic form

Blockchain: distributed digital ledgers of cryptographically signed transactions that are grouped into blocks

Distributed Ledger Technology: a type of technology that enables the sharing and updating of records in a distributed and decentralized way.

Hash: a cryptographic function that converts any input (text, image) into a fixed-length code

ABBREVIATIONS

ASCAP - American Society of Composers, Authors, and Publisher

BM – Business Model

BMI - Broadcast Music Inc.

BT – Blockchain Technology

CRO/PRO – Collective/Performance Rights Organization

DLT - Distributed Ledger Technology

MS – Music Streaming

MSS – Music Streaming Services

SI – Strategic Innovation

SR - Sound Recording

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1. Introduction

Everything in the universe has a rhythm, everything dances. – Maya Angelou

Technology is just a tool. – Bill Gates

The music business definitely has its own rhythm, with the industry always adapting to and applying the rapid changes that arise due to new technologies (Fairchild, 2015). From tapes to LPs, from cassettes to CDs, from downloads to streaming, we have come a long way since the invention of the "talking machine", the phonograph, by Thomas Edison in 1877 (Razlogova, 2006).

With the advent of discs and radio in 1921, music started to be seen as a business. Gross revenues in the United States hit $106 million for the recorded music market that year. In 1948, with the invention of LPs and 45-rpm discs – that were lighter and less breakable – the industry was able to reduce costs by shipping albums faster, therefore democratizing the medium. The cassette, introduced in 1963, made music not only portable but recordable, thus decentralizing the record industry. During the 1980s, the CD was introduced, replacing LPs as the primary source of music consumption due to, once again, cost reduction. CDs generated $930 million of income from 53 million CDs in contrast to the $983 million produced by the 125 million LPs (Fairchild, 2015; Frith, 1988; Garofalo, 1999).

In the late 1990s, the industry was further revolutionized and impacted in an unprecedented way when illegal downloads emerged. Notably, in 1999, when Napster arrived, the perceived value of music plummeted from around $15 per album to almost nothing, significantly impacting industry revenues. At the same time that new technology was giving more access to music, it contributed to piracy and crushed the industry's numbers. In 2001, Apple's iTunes and iPod introduced a new business model where consumers could download songs for $0.99 per recording, save them in their computers and upload music onto portable personal devices. However, even though it was a success in terms of industry revolution, illegal downloads, or the "free model", continued to be a big part of music consumerism, consequently dropping album sales by 2.9%, in 2001, according to Billboard Magazine (Rethink Music, 2015; Fairchild, 2015; Billboard, 2004).

In subsequent years, music would become even more accessible as advancements regarding internet speed and bandwidth skyrocketed. Finally, the ownership model became an

access model where consumers paid a monthly subscription or chose a freemium account that made it possible to stream unlimited songs on different devices from anywhere in the world (Rethink Music, 2015). Particularly, in 2008, with the launch of Spotify, companies had to reinvent their revenue capture models and adapt to the new consumer approach. Indeed, music streaming worldwide went from $0.3 billion, in 2008, to $8.9 billion, in 2018, proving this to be the money-making source today for the music business accounting for 46.9% of global revenues according to 2019's Global Music Report (Statista, 2019; IFPI, 2019).

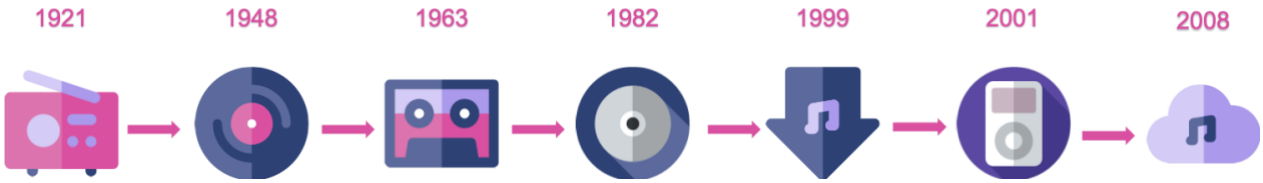

Figure 1: Technology in Music Industry Revolution

In the middle of this music business evolution are the artists, songwriters, producers, and creators. Over the years, their intellectual property has been commercialized regardless of the technology used. It was only when music became widely distributed that copyright ownership gained real business value (Sullivan, 1999). As Fairchild (2015) puts it, "an industry concerned primarily with producing and selling recorded music [became] an industry that is just as concerned on balance with the exploitation of intellectual property rights".

It is clear that the music business has always followed a parallel path with technology and has not been far behind implementing relevant innovation. However, new technologies have mostly been introduced when they represent a clear advantage to big players' business bottom lines, i.e., the big labels (Fairchild, 2015). In contrast, music creators "continue to have problems earning fair and equitable financial returns on their efforts, even as more songs are played for more listeners than ever" (Rethink Music, 2015).

This thesis analyses the potential impact of blockchain technology (BT) on revenue distribution in music streaming (MS) services for both companies and creators. Implementing blockchain into the payment framework protects content creators through a more reliable and transparent system. The thesis also discusses the current payment structure used by the industry to distribute royalties and addresses reasons why this technology has not yet been implemented. A new framework using blockchain technology is proposed.

2. Literature Review

There is a body of research discussing revenue streams in the music industry, use of blockchain for intellectual property and copyright, and the implementation of blockchain in the music industry as a whole (Arcos, 2018; Bodó, Gervais, & Quintais, 2018; Candelin-Palmqvist, Sandberg, & Mylly, 2012; Holotiuk, Pisani, & Moormann, 2017; Koster, 2011; Sims, 2018; Swanson, 2013). However, there is little research specifically about streaming services and blockchain, even though the former accounts for almost 50% of revenues in the music industry and has grown a further 34% in 2019 (Digital Music News, 2019).

What follows is a discussion of concepts relevant to understanding how blockchain technology can provide a fairer and more transparent solution for royalty payments and distribution in the music streaming business.

2.1. Industry's Concepts

To understand the business model in the music industry, the following definitions are relevant, as stated by ASCAP and BMI based on the United States Copyright Act (1976).

Musical Composition (MC): musical work creation consisting of lyrics and/or melody**;** made by songwriters and lyricists;

Sound Recordings (SR): when a musical composition is recorded, performed, mixed or mastered; also referred to as only the "master"; made by artists and performers;

Copyright owner: the owner of that particular right;

Creator: songwriters, lyricists, artists, performers, producers

Royalty: The money given to a copyright owner in exchange for permission to use their music;

Mechanical Royalty: paid for the right to reproduce a musical composition in a physical or digital medium;

Sound Recording Royalty: paid for the right to reproduce the copyright owners' sound recording; usually labels and artists/performers;

Performance Royalty: paid for the right to perform a musical composition and sound recording publicly;

Label: companies that market recordings from artists and performers, in terms of distribution, marketing, and copyright enforcement; usually are also copyright owners (Kretschmer, Klimis, & Wallis, 2001);

Publisher: companies that represent writers and composers as well as their rights (Kretschmer et al., 2001);

Performing/Collective Rights Society/Organization (CRS/PRO): an association, corporation, or other entity that licenses the public performance of MC.

2.2. Setting the Stage: Music Streaming Business Model

A Business Model (BM) is defined as "*the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities*" (Amit & Zott, 2001). A clear BM shows how an organization interacts with stakeholders and engages economically with them to create value. Particularly in the MS industry, stakeholders range from songwriters, artists, performers, producers, labels, publishers, and MS companies.

For this thesis, the companies that will be discussed, either explicitly or by implicit reference, are Spotify, SiriusXM, Tidal, Pandora, Deezer, Amazon Unlimited Music, Apple Music, and Google Play Music**.**

According to Rethink Music Initiative, from Berklee University's Institute of Creative Entrepreneurship, there are three types of MS monetization models:

> ***Paid interactive or on-demand*** *models under which a consumer chooses what music to listen to and creates a copy on his device that exists as long as he is a paying subscriber. These models are typically referred to as "interactive" or "on-demand" services. An example of this model is Spotify's premium subscription service.*
>
> ***Advertising-supported*** *models in which a consumer chooses what music to listen to in exchange for viewing or listening to ads. These are also some- times referred to as "interactive" services. Examples of this model are Spotify's free, ad-supported service, or YouTube.*
>
> ***Advertising or subscription-based*** *models in which music is provided to listeners based on genre or programmed recommendations. These services are typically called "non-interactive" because the user does not have control over exactly which songs will be played. An example of this type of streaming service is Pandora.* (Rethink Music, 2015).

With the popularity of streaming services, platforms were able to acquire an increasing number of users. By January 2020, there were 1.085 billion subscribers in MS services worldwide, and this is projected to reach 1.273 billion by 2024 (Statista, 2020). However, advertising-supported services still dominate the market as there is a significant preference from users towards free content (Statista, 2020; Pauwels & Weiss, 2008). At the same time, the goal of platforms is to collect money from on-demand customers by converting users from advertising-supported channels to paid subscriptions (Rethink Music, 2015). According to Pauwels and Weiss, for short-term subscriptions, i.e., monthly, the best way to stimulate paid subscriptions is with price promotions because of the minimal commitment that allows the user to decide if the content is useful. Users can then later begin to pay for the service over the long-term (Pauwels & Weiss, 2008).

On the other side of the business are creators, publishers, labels, and managers. Creators rely on the other three to ensure that their creations and careers are marketed correctly. Hence, for over 100 years, creators have been assigning their rights to market intermediaries (Kretschmer et al., 2001). However, as in any business, everything comes with a price.

2.2.1. Backstage: How the Money Flows

The labels are responsible for distributing the SR and collecting revenues, both physically and digitally. Regardless of where the money is coming from – if it is from subscriptions or advertisement – the platforms, in agreement with labels, have installed a system of pay-per-click or pay-per-percent of revenue. The money received is used to pay artists based on a percentage agreed in contracts, which is estimated to range between 10 % to 50 % and varies from contract to contract (Berklee, 2019). Streaming companies also pay money directly to publishers and PROs who are responsible for collecting royalties for songwriters and composers. However, companies do not disclose the exact amounts; hence there is no precise number available for either artists or songwriters and composers to audit (Rethink Music, 2015).

The exact amount paid in total depends on the particular platform. In 2019, for example, Spotify was reported to pay on average $0.00437 per stream, which means that to make $1, a song needed to be played 229 times (Digital Music News, 2019). One must also not forget that this money is split between all the parties mentioned above.

The current payment framework in MSS is outlined in Figure 2.

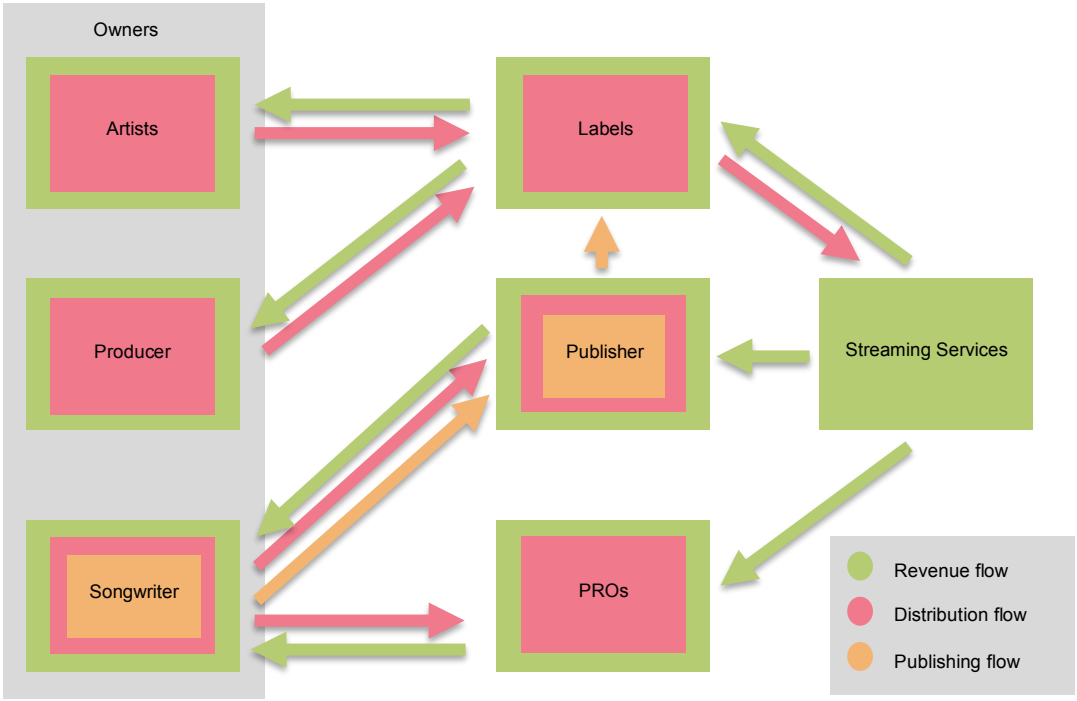

Figure 2: Current Payment Framework for MSS

$$CR = [PR] - [\%L - (\%P + \%PRO)]$$

Creator Revenues; Play Revenues (minus MSS %); Label %; Publisher %; PRO %

2.3. Opening Act: Blockchain Technology (BT)

BT is a type of Distributed Ledger Technology (DLT) that enables the sharing of information between different nodes transparently and securely. In short, it is a distributed database that is not stored centrally. Instead, it has duplicates in different nodes - computers. The information is recorded in blocks that are added to "the chain" as unique codes, each known as a hash, that are generated cryptographically, i.e., encrypted, based on the previous blocks or encrypted information, if it is the first time that is being added. The hashes are also timestamped (Cryptoassets Taskforce: final report, 2018). This technology creates a secure, immutable, and trustworthy transactions chain records of information.

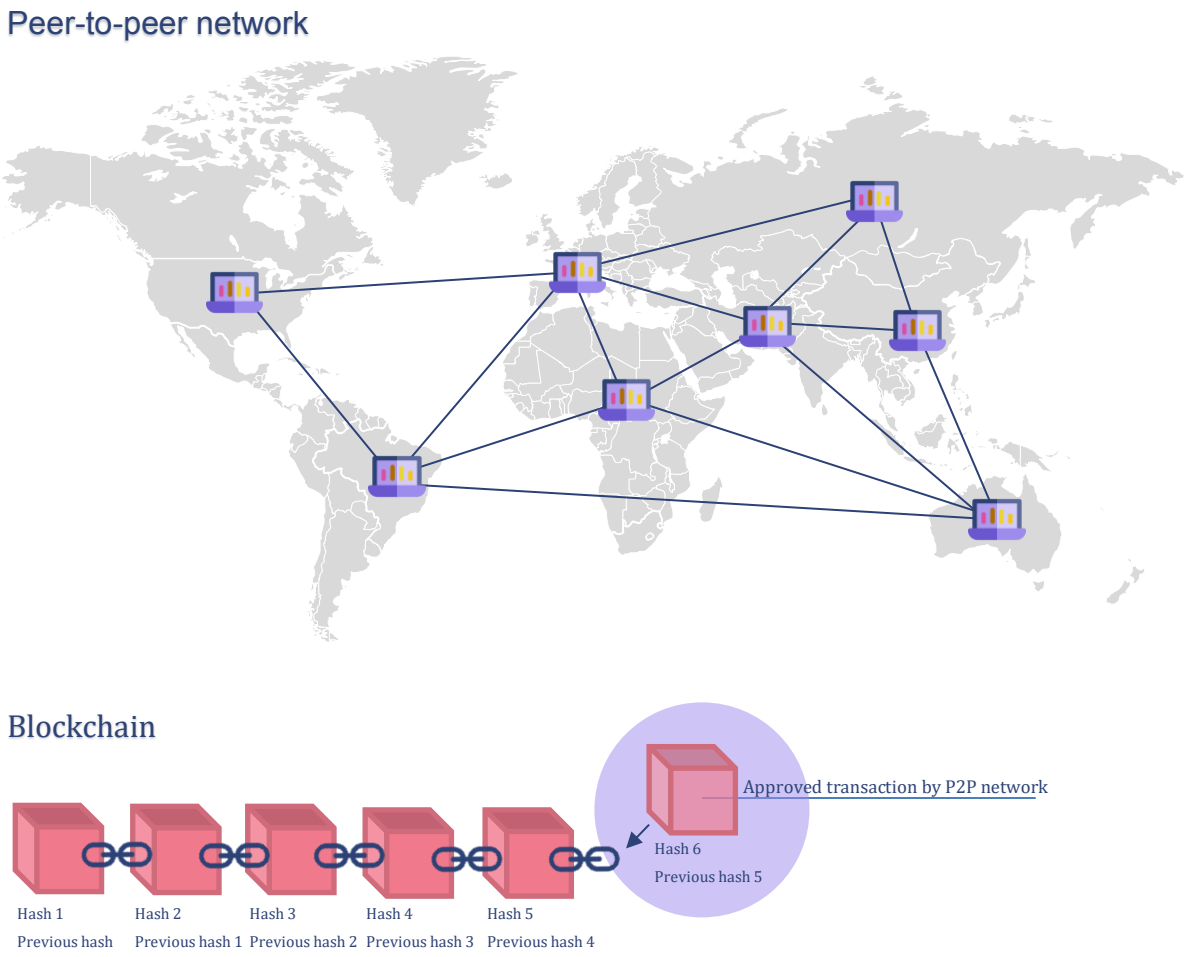

Figure 3: How Blockchain Works

2.4. Second Act: Strategic Innovation (SI)

A firm's strategy is defined as the "pattern of managerial actions that explains how a firm achieves and maintains competitive advantage through positioning in product markets" (Zott & Amit, 2008). Moreover, according to Zott & Amit (2008), a specific strategy is as important as a clear BM, with both affecting a firm's market value, jointly or distinctively. In other words, a "good fit" between strategy and structure increases performance.

Innovation is simply a new idea (Hage, Zaltman, Duncan, & Holbek, 1974), by creating or appropriating value. Moreover, to be considered so, it just needs to be perceived as new by the people involved (Van De Ven, 1986).

SI can then be described as the creation or appropriation of value by engaging new or existing activities in a different way to establish and sustain a competitive advantage. Additionally, SI can be classified in different categories, the most common being (1) pioneer versus follower posture; (2) product versus process innovation (or both); (3) the intensity of

investment in innovation (low - middle - high); and (4) the sources of innovation - internal versus external (or both) (ZAHRA & DAS, 1993).

2.5. Main Event: Innovating in the Music Streaming Business Model

Over the past decades, the music industry has gone through significant changes regarding how musical records are produced, managed, sold, bought, and consumed. Music streaming has fundamentally changed the traditional way the industry works.

However, the business has been using the same model to track revenues for years, opposing the historically rapid adoption of technology trends. The payments are based on outdated frameworks, technologies, formulas, and methods that do not meet the pace of the industry's evolution (Rethink Music, 2015). Many different databases exist for different countries, genres, and other categories, using a variety of standards and contracts. No one can keep an appropriate overview of ownership, plays, and royalty payments (Rethink Music, 2015).

Historically, when a new technology arises that enables music to be more accessible, the labels and publishers try to pay the creators less as they assume they will not make the same amount of money as before (Fairchild, 2015). Nevertheless, in 2018, record labels' income grew 16%, and publishers' revenues grew 8% (DiMA, 2018). Alongside PROs, they have been playing a middlemen role by receiving a cut, whereas the "real owners", or creators, end up receiving a small percentage relative to the overall revenues associated with their creation.

On top of this, the payment process is slow and cumbersome. On average, a creator has to wait one year to be paid (Berklee, 2019). Besides, confusion regarding ownership exists, which results in many scandals and complicated lawsuits within the industry. The pop singer and songwriter Taylor Swift, for example, lost property of her songs when she signed a contract with a label that retained the rights to all her albums up to 2016 (Rethink Music, 2015; Carmody, 2019).

Creators for years have been arguing for an updated framework that can be more transparent and reliable. Their goal is to keep creating music; they do not want to spend time chasing accounting and would like a system that rewards creators fairly (Rethink Music, 2015). According to a study by E&Y and the French Syndicat National de L'édition Phonographique (SNEP), artists end up receiving $0.68 from a $9.99 streaming service monthly subscription fee, 6.81% (SNEP, 2014).

In regards to MSS, a business model implementing a new technology that can change the way the industry is organized can increase company performance (Zott & Amit, 2007) as less time would have to be spent on financial accounting and distribution of royalties. Furthermore, innovation implementation is proven to create wealth when recombined with existing resources (Schumpeter, 1934).

Therefore, this thesis aims to answer the following research questions:

1. *How is the current system perceived by the industry?*
2. *How can the implementation of BT in the current BM impact revenue streams for copyright owners and MSS by building a decentralized, transparent, and standardized payment framework?*
3. *Why has the industry not yet implemented BT?*
4. *Can BT create/improve trust in the industry?*

3. Methodology

The dissertation used a mixed-method approach by implementing a qualitative and quantitative analysis. Studies have found that combining both of these leads to appropriate methodological design, yielding better results for the kind of research questions being examined (Borrego, Douglas, & Amelink, 2009; Choy, 2014; Fielding & Fielding, 1986; Welch & Patton, 1992).

The research was conducted in three parts. First, there was descriptive analysis of secondary data about MSSs, BMs, the industry's revenues, and money flow, as well as BT, as seen in the literature review.

Secondly, there was a quantitative analysis of primary data using surveys, since this allowed us to obtain information about a phenomenon reflecting the behavior of a relevant cohort of individuals (Queiros, Faria, & Almeida, 2017), in this case, consumers of MSS. The goal was to understand consumers' willingness to pay for MSS, the revenue impact on the industry, and how consumers view innovation. At the same time, there was qualitative analysis of primary data collection through semi-structured interviews with industry professionals, to collect and compare responses about past experiences that could provide rich information to establish a connection between topics (Queiros et al., 2017), in this case, between the MSS BM and BT.

Finally, after analyzing the findings, there are predictive claims proposing a new, updated framework with the application of BT and the impact it could have on the industry.

3.1. Survey

The sampling group for the study was any person that uses any of the music streaming services platforms in any type of subscription model. The survey consisted of three sections: Music Streaming Service Usage, Willingness to Pay for MSS, and Demographics. The aim was to understand how much consumers are willing to pay for different types of MSS taking into consideration the features they provide. Then, revenue capture was estimated for the companies and how the money would be distributed using the new BT framework as opposed to the current BM in effect.

Different types of questions were posed, such as open-ended ones, questions that required multiple-answers, binary answers, and scale types of questions. The survey was conducted online via Qualtrics. The full questionnaire can be found in the Appendix.

3.2. Interviews

The sample for the semi-structured interviews was music industry professionals who work or have worked directly with the current framework. These are managers, directors, CEOs, producers, artists, performers, songwriters.

There are two main objectives of this approach. With the first part, the aim was to understand what people thought about the framework, i.e., if they were satisfied with how it works today. More specifically, we were seeking information about understanding of the periodicity of payments, the amount paid, transparency, and trust.

A second part aimed at comprehending their knowledge about BT, and if it were a technology people would trust and chose to implement in the industry. In this part, a specific question was posed about cryptocurrencies and if the interviewee invested in them. The reasoning here was to test trust, i.e., if someone has bitcoins, they own a currency with BT technology behind it; hence they must have some knowledge about how it works and trust it. Finally, respondents were asked to offer an opinion about the impact of BT in the music industry.

The thesis sought to have a global perspective. Given the pandemic, interviews were conducted via video and were recorded. Table I with the findings can be found in the Appendix.

3.3. Data Analysis

With the data collected from both methods, an analysis was done by combining qualitative and qualitative data.

The main goal was to propose a new payment framework for the business model using BT, as well as discuss the impact it could have on the distribution of royalties. Moreover, with the WIP from consumers, estimates of labels' and publishers' revenues were analyzed so that the hypotheses about creators not receiving sufficient remuneration could be addressed.

4. Analysis

4.1. Quantitative Analysis

The survey returned a total of 337 answers, of which 318 were considered valid answers, i.e., where respondents used at least one of the MS platforms cited. The average age of respondents was 28.4, and 31 countries participated; Brazil, Germany, Portugal, USA, and Ireland being the top 5, respectively. 55.7% are full-time workers; 34.3% are students, and 10.1% are either part-time workers or unemployed. 50.6% have a bachelor's degree; 37.7% have a master's degree, and 11.6% have other types of degrees.

The primary platform used by respondents is Spotify, with 74%, followed by Apple Music (13%), and Deezer and SiriusXM (3%). Most use a premium version of the service (89%), and 77.7% use the platform at least once a day. On average, respondents pay $7.76 per month, since different platforms charge a different price as to different countries and plans. This result concurs with the rates advertised on Spotify's website for each of the top five countries (see Appendix).

When it comes to the top three reasons listeners use MSS, it was not surprising that the main one was to listen to music (98.4%), followed by discovering new music (64.2%) and use for entertainment (44.3%). The features most valued by consumers were unlimited playlist (68.6%), music and playlist suggestion (56.6%; 54.7%), and podcasts (45.9%).

Moreover, 95.9% agreed that the platform fulfilled their needs, and 93.1% believed that the features provided were enough. 78.3% thought the price was fair, and 77% did not wish to pay more. Hence, users seemed to be satisfied with the services they use and the price they currently pay (Figure 4). Therefore, innovation or change in the revenue stream or value proposition specifically for MSS was not taken to a need.

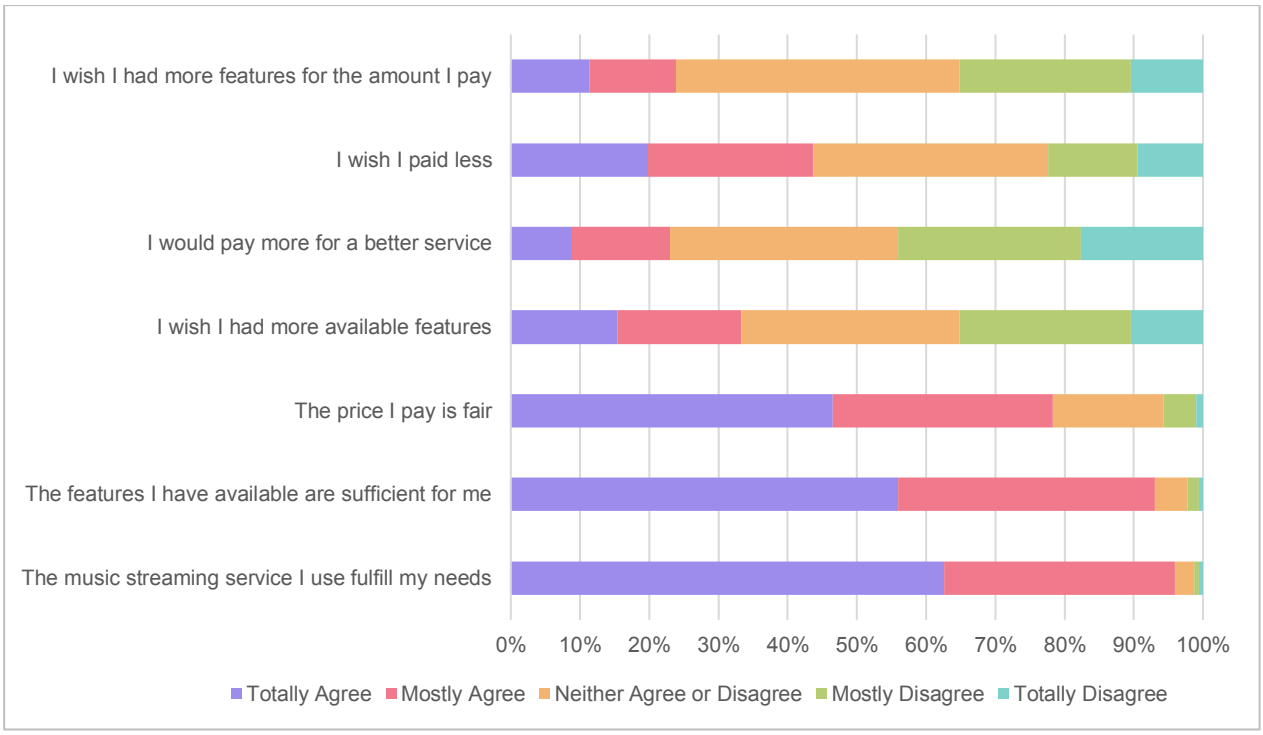

Figure 4: 5-point scale answers – out of 318 valid responses

The data collected supports the previous literature about MSS as the main source of music consumption but contradicts the claims made by Paul & Weiss (2008) that users tend to adhere to more ad-supported versions. Nevertheless, it might confirm the authors' statement about user conversion. Considering the time difference between their work and this survey, respondents may fit into the criteria of adopting the free version and later signing up for the paid one, which would explain the large number of premium subscriptions.

Furthermore, the study corroborates with the idea that MSS has democratized music even more. Users have more access to different genres and value platforms that enable them to discover new songs with music and playlists' suggestions. Music has never been more accessible than today.

Finally, the survey confirmed Spotify as the market leader; therefore, this analysis uses Spotify as the platform for model application. The results also confirmed the principle proposed by Zott & Amit (2007) that changing the way an industry works by innovating improves performance. The company is a clear example of strategic innovation as it was the first to use the then-unprecedented BM in the music industry and introducing streaming as a form of consumption.

4.2. Qualitative Analysis

In total, 13 people from the industry participated, coming from different backgrounds and positions. Interviews were conducted via video and ranged from 30 minutes to 1 hour and a half depending on the interviewees' answers. Also, as the format was a semi-structured interview, new questions came up during the conversations which were posed to add color and complement the results. Table I summarizes the interviewees' responses and opinions to each relevant topic discussed (see Appendix).

From the analysis, it is safe to say that regardless of the role someone has within the industry, all agreed that the current format for royalty distribution is old and foggy in terms of how the organizations conduct accounting. Particularly for MSS, it becomes even hazier since companies do not disclose how much they pay per stream. According to Guilherme Tannenbaum, co-founder of the record company Braslive, streaming has become so crucial for the industry that platforms simply must become more transparent (2020).

Founder of the publisher Label Engine, Luis Delgado, created a system that made it possible to pay clients monthly instead of quarterly (2020). However, artists receive their payments three months after it has been collected. Royalties gathered in January, for example, will be paid in April, the ones from February, in May, and so on. Most labels and publishers have a system that either pays every six months or only if the SR makes a return on investment after recouping promotional costs incurred for artist. "Labels need to recuperate the money they have put into an artist. Sometimes this does not happen in the timeframe set by contract with each one", stated Felipe Rangel, product owner of SóMusica, a Brazilian streaming company focused on the country's Northeastern market.

On the one hand, most musicians do not know how the process works, relying on labels and managers to do it for them. On the other hand, that is what they want and expect when signing with intermediaries. However, they are still not satisfied with the amount they receive. For Pablo Bispo, a former artist and currently a music producer with 100 million streams every three months, everything is connected, and artists need to know how the business works. "The internet democratized music. Nevertheless, there is no point in wanting to live off of making music if one does not know how to make money from it" (Bispo, 2020).

Young artist and composer Hudson Barineau agrees and added that at the end of the day, labels are the ones that make money as the amount is multiplied by the number of plays and artists they manage (2020). "Without knowing how it works, many artists usually spend

the advance given by labels and end up not having returns since they did not meet expected results" (Barineau, 2020).

Platforms usually send a spreadsheet detailing the number of streams, amongst other data, for each label and publisher. They then need to check each file received from the different platforms for all streams, which is time-consuming. Big companies have entire departments just for that when smaller ones have label managers of even top-level managers do it. The CEO of a Brazilian Record Label is one of them, and he highlights that one can never know for sure if platforms are recording and counting every play correctly. "I cannot tell if it is a system that I trust or not. In some way, we must trust it because it has been like this since forever. However, there is a cost for the time spent on bureaucracy that could be spent somewhere else" (2020).

Marketing Manager for Braslive, Alessandra Simões, also could not affirm if she trusted the system as it is or not. "Payments are not 100% assured. It is not fair to artists. They get paid very little" (Simões, 2020). For sound engineer Guilherme Tettamanti, the system is better today since it is digital and easier to track, though companies usually pay an average and not the real value. "It is impossible to audit the balances received, and the CROs receive a big chunk of the revenues" (Tettamanti, 2020).

For Bispo (2020), who produces songs for several famous Brazilian and foreign artists, files from streaming platforms are more detailed but not exactly trustworthy. He estimates he receives around 40% of what he should from streams, which is considered a lot within the circle of industry professionals. On average, he gets 350 thousand reais (Brazilian currency) per year in royalties from streams. However, he emphasizes that his career is not usual since most creators do not leverage a financial position only from streaming, especially less-known artists and producers (Bispo, 2020).

Smaller and independent musicians are the ones who suffer the most for two reasons. First, as mentioned previously, most of the time artists do not know how the system works. Secondly, there is the so-called "Black Box" and "Market Share Distribution". The former is where royalty revenues end up if there is no way of accurately identifying ownership since the industry lacks a system that connects usage to ownership. The latter is simply the way the system distributes unattributed money, which is defined by labels and publishers' market share.

To summarize, the top ten labels and publishers, for example, will split the revenues from the black box even if they do not have copyrights for the SR. Furthermore, parties that keep the money have little to no financial incentives to find the rightful owners. It is not common to share the monies amongst artists and composers since the music cannot be attributed to any rightful owner. According to English artist manager Toby Bird, the business treats one

differently if they are an independent instead of a signed artist, which explains why platforms in some way take advantage of independents by not remunerating fairly (Bird, 2020).

Another point of agreement amongst the interviewees was the big gap between how established and new entrant artists perceive revenues from their creations. An industry consultant and manager of a significant legacy artist who has won ten Grammy Awards affirmed that for famous musicians streaming payments are not a concern as they have alternate revenue streams. The main sources of monetization are records, concerts, and touring. "Artists do not see a significant amount coming from MSS as they did with CDs, for example" (Manager I, 2020). Artist and industry veteran Torcuato Mariano summarizes: "There is a shift in value. The way it works today is unfair to artists" (Mariano, 2020).

The sample was divided into two major groups named "old school" (OS) and "new school" (NS). The former comprises of professionals who were actively working during the shift from analog to digital music. The latter is formed by professionals who started working after digital music already existed.

Even though the technology is deeply connected to the music industry, the OSs do not perceive the digital era in a positive way. This fact was evident when asked about BT since most of them did not fully trust digital technologies. Torcuato affirmed that this world is all a black box, and before there was a filter that does not exist in digital (Mariano, 2020). Similarly, Manager I emphasized his mistrusts in MSSs and how he believes that having more information can be worse than having little (Manager I, 2020).

Industry veterans like 74-year-old artist Neil Young are often talking about the difference between the old and the new days. He made a statement about digital music lacking the audio quality of analog recordings where the sound is better (2020), which is not correct, according to Dr. Robert Owen, a physician who studies gravitational waves. Owen explained that there is no scientific proof of that, and it is just a matter of preference (2020).

At the same time, OSs firmly believe in improvements that can benefit the industry and see value in changing the business model. Still, their knowledge about BT is minimal if not nonexistent. As for NSs, even though on average they know more about the technology, most did not know that it is the foundation for cryptocurrencies or that other industries already use it. In contrast, a high number of respondents (11) mentioned human error and manipulation in accounting for money as one of the main reasons they do not fully trust the current system.

This dichotomous opinion corroborates the theory that changing the framework is difficult because people do not trust a technology they do not know about, something especially true of older professionals. In fact, when presented with the information that Walmart, for

example, uses BT in its supply chain to track products faster (Hyperleger.org, 2019), interviewees were more interested in getting to know more about it. Moreover, when told about how exactly BT could impact the industry, all had a positive response towards its use in the distribution and payment of royalties.

Both groups highlighted the difficulties about the implementation of a BT-based system with concerns about lack of regulations, lack of trust from professionals, and resistance from big players to adapt. The latter might confirm Fairchild's' (2015) argument about labels not wanting to add new technologies as they assume it would pay them less in the long-term.

4.3. Remix

The study confirms the hypothesis about professionals perceiving the industry's framework as outdated. Regardless of whether they are artists or not, all acknowledged the system as worn and old, and saw room for improvement that can help the business function in a better way. At the same time, artists want fair remuneration, and labels and publishers want to expend time spent on accounting on something more productive.

With more people paying for premium subscriptions, platforms have higher revenue than ever before, consolidating streaming as the vehicle by which people consume music. This confirms the data from the DiMA report (2019). Nevertheless, the percentages in contracts are not disclosed and vary from artist, label, publisher, and platform.

Platforms are more than just a means of distribution; they are part of a marketing strategy. Previously the industry measured success according to the number of CDs sold; nowadays, it is measured by the number of streams. However, streams do not pay the same way. In fact, labels can buy a ranking position on a platform so that a song can perform better. This has been a common practice since the advent of radio which the industry simply transferred to the digital world. For example, if an artist's SR is featured in Spotify's "Global Top 50 Worldwide" playlist chart, it will reach more than 15 million people.

The study also showed that trust is connected to a lack of knowledge, meaning that the main reason professionals did not trust the system is because it is not transparent enough for everyone to understand. At the same time, creators tended not to know the minimum about how royalty distribution works and depended significantly on managers and labels for their accounting. The research proved that the industry needs and wants a new system that all parties can understand and that it is beneficial for everyone.

Industry professionals do not clearly understand BT as a potential disrupter, which explains why the industry has not yet implemented any kind of technological solution for this problem. The fact that OSs still hold higher positions in influential companies also contributes, since they tend not to trust digital whatsoever. Platforms may leverage this to their advantage, laying low as the framework stays the same.

4.4. Existing Solutions

Start-ups are emerging to develop and offer solutions based on blockchain. The founder of Musicoin, Isaac Mao, saw the problem in payments and created a company in 2017 with the publication of its whitepaper (Musicoin, 2017). The firm is a blockchain-based add-free streaming platform where listeners have access to songs from a variety of artists and are encouraged to tip them, provide feedback, and share them within their networks. The platform uses smart contracts where artists are paid automatically and instantly on a pay-per-play basis with the platform's cryptocurrency called $MUSIC.

Mao highlights the importance of industry remodeling or redefining the distribution models, which is the main goal of his company. "We need to change the focus from industry players to musicians themselves, and we believe BT has the potential to do that" (Mao, 2020). Also, he emphasizes the need to work with artists in conjunction with IT professionals to develop the application.

Other examples include Ethereum-based streaming platforms Voise and Bitsong, as well as Resonate with its "stream-to-own" framework, which splits the total cost of a song into nine plays until the listener officially owns it and can play it for free.

4.5. Pandemic's Impact: Certainties and Uncertainties

This year's COVID-19 pandemic hit the entertainment business in its core. Goldman Sachs' annual report "Music in the Air" estimates a drop of 25% in revenues due to the economic recession (2020). Social distancing rules prevent live events from happening, consequently dropping profitability by 75%. One of the main sources of income for the industry – concerts and tours – were simply taken out of the picture this year. According to Goldman Sachs, for every $10 spent on music, artists receive 60-70% from touring in contrast with 17% from recorded music (2020).

Nevertheless, the report expects the crisis to contribute further to the shift from offline to online in the industry, which can be a push towards better methods around remuneration in

digital music. While performance revenues drastically declined, streaming has stabilized. Ad-supported revenues were impacted since there is less demand than before, but the number of paid subscribers increased and may reach 1.22 billion by 2030, a 6% growth relative to previous reports. Paid streaming is forecasted to grow 19% in 2020 despite the pandemic.

At the same time, income for artists, labels, and publishers has dropped, turning the industry's more towards digital revenues. Artists have postponed new releases. Physical sales are not feasible at this time since stores are closed or partially open. New licensing formats are emerging, e.g., TikTok and e-fitness. Digital mechanical royalties have become more critical. Also, platforms have the potential to expand to new markets. Spotify is presently in 79 countries, while Netflix has service in 194 states (Goldman Sachs, 2020). The data shows that streaming has even more incentives to review its royalty remuneration system without harming its revenues.

Delgado thinks the pandemic reveals a big problem in the industry. "It shows how we rely on one major source of revenue (concerts and touring), and we do not acknowledge the great potential streaming has" (Delgado, 2020). Manager I also saw his business suffer and, up to the time of the interview, did not have a contingency plan for the upcoming months.

The music industry owes a lot to streaming since the market started to grow again in 2015. After 15 years of decline, the business model changed to fight piracy (IFPI, 2019). Goldman Sachs estimates that the business will rebound quickly and will grow again in 2021. In the meantime, the pandemic brings to light more vividly the discussion of an outdated framework that must be reformulated to become a more optimum and fairer source of income for players other than platforms.

5. Discussion

5.1. Why Blockchain?

Innovation in the BM is the path industries follow in the digital era. Returns have proven to be profitable, and new business opportunities can continue to emerge. The main goal of BT implementation in MS is to be more transparent and consequently to increase income for creator. Musicians presently do not get paid fairly, and the system is opaque. With BT, a new framework for streaming services will provide accurate and accessible data about plays and will enable faster and more reliable payment and royalty distribution processes. At the time of

writing, scholars and cybersecurity professionals affirm that BT is one of the most secure, transparent, and reliable technologies that exist (Mao, 2020; Coelho; 2020).

5.2. A New Creator-Centered Framework

Given all the data collected and our analysis, a new payment system with the use of BT can address the foregoing issues which are a critical and ongoing problem in the industry as well as bringing about more fairness and transparency.

Primary data collection has to be standardized (minimum viable dataset) to successfully implement a consistent blockchain solution (PWC, 2018). Every phonogram already has its unique code (ISRC) containing all the information about the SR. They would be encrypted (transformed in hashes) and put in a blockchain that is accessible to everyone. There would be one main music-library where the recordings would be uploaded with all information about them. No one can tamper the data, i.e., claim the ownership besides the true and correct owners of copyrights.

This blockchain solution would make use of smart contracts set up by the parties involved in the music creation process which would be enforced as soon as creators publish a recording. The contracts would contain the names of the writers, composers, producers, labels, performers, and any other necessary information needed to split revenues for each of the stakeholders. The blockchain library would record plays with information about where, when, and how many times an SR was played. Whomever around the world streams the song would activate the terms of the smart contract (e.g., the streaming platform paying labels for customer streams, etc.).

With every execution, the blockchain would record a new transaction that can be verified by the owners, if needed. Data would be continuously updated, and anyone would be able to access the information in real-time.

MSS would not have to send files to each organization with the number of plays anymore. They would be able to distribute royalties according to ownership share and contractual percentage arrangements agreed to between platforms and other parties. MSS could pay within a shorter timeframe, e.g., monthly instead of quarterly. Moreover, labels would not need a whole department or their managers spending time accounting for royalties.

The new framework does not work as a payment service but is a content protection system so that the owners can have accurate and transparent data about the use of their

recordings anywhere in the world. Therefore, any copyright owner would be able to verify information and make legitimate claims for actual money owed.

Figure 5 shows the configuration of the proposed new creator-centered framework.

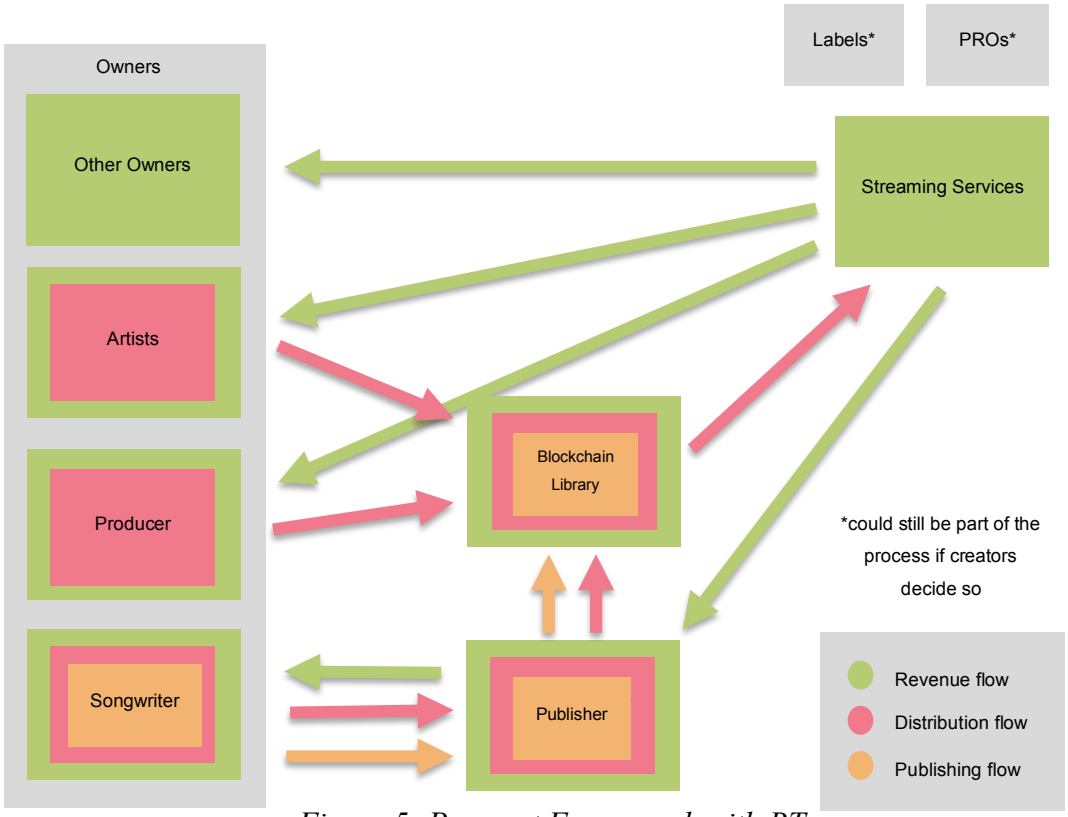

Figure 5: Payment Framework with BT

$$CR = [PR] - \%P$$

Creator Revenues; Play Revenues (minus MSS %); Publisher %

5.3. Framework Implications and Potential Consequences

For this ecosystem to function, regulations must be clear and enforced. Firstly, smart contracts must be valid worldwide. Secondly, the timeframe whereby particular streaming platforms must send payments to owners must be fixed, for example, at one month to avoid mistakes for accounts payable and receivable. Blockchain data represents the "truth" which is incontestable, i.e., the blockchain library provides correct data at all times, e.g., the numbers of plays an owner is able to use this date to enforce fair payments, if necessary.

The industry would have to re-organize all data generated and collected must implement standards concerning technical, ethical, and legal questions. For example, the wide variety of industry players work differently using diverse contracts and billing models, so metadata from

sources differ considerably with regard to quality and information detail. The new framework must enforce the quality of data entry so as to account for information correctly and minimize errors. Consequently, the black box would not exist or at least it would shrink significantly, and money would be split fairly.

One of the main concerns this study addresses is the industry's lack of trust. Based on the premises that professionals do not trust what they do not have enough knowledge of, the industry would have to be further educated on the use of this technology and its benefits for all.

The new framework suggests that Labels and PROs are dispensed as a major proportion of the functions they serve appears superfluous. For the former, it does not mean that they would be cut out completely. However, the ownership the labels formerly enjoyed over recordings could potentially shrink. Creators would not need to transfer rights to labels to keep track of how much musicians need to receive in royalties. Nevertheless, the creator might still want to use them as intermediaries to do so, which would make sense, especially for artists with a large portfolio who do not have the time to track all their recordings themselves. Independent artists, however, would have more freedom and opportunities under this new system.

The difference lies in creators having comfort that they can check the blockchain at any time to gain full and accurate information about royalty payments they are entitled to receive. All in all, labels would remain a big part of the music industry as they provide a range of different fundamental services for artists such as booking, career management and marketing.

Regarding the PROs, the same situation can be applied. However, as they provide fewer services than labels, they might be seen only as another unnecessary entity to check values and be thrown out of the game. Therefore, unless they manage to add value to their services or change their business models and responsibilities by finding new roles in response to emerging needs (e.g., the verification of data to put into the blockchain), this framework would most likely be superseded in a BT music world.

5.4. Potential Obstacles and Problems

The main obstacle is achieving consensus about deployment. For the system to work, most players in the industry would have to agree on its execution and participate in establishing the new framework as the industry's standard. This might be difficult, especially for big players. Without consensus, the framework would most likely fail. If streaming platforms have no incentive to participate in a blockchain solution, they could easily boycott the development of

the whole ecosystem. However, if only specific platforms are reluctant, the benefit of participation may, at some point, become higher than the advantages of holding out in favor of the old way of doing things. Musicians, labels, and publishers could pressure platforms to adopt BT, forcing a change in the business model. For example, artists may not make their songs available to platforms that do not use the blockchain library, potentially resulting in customers changing streaming services due to a lack of variety.

Another obstacle is the financial resources that would be necessary to build up a network of this scale, which would likely be expensive. Again, a consensus perhaps between big labels, publishers, and streaming platforms could help build a plan for construction.

BT may be too slow to serve the needs of a global database for processing many transactions per second. No final solution exists for this issue yet; however, potential answers include decentralized payment protocols such as the Lightning Network (PWC, 2018) or hash graph solutions which significantly raises the number of transaction per second that can occur and be verified by the nodes in the network.

Further legal questions arise in a world where decentralized databases, blockchain applications, and smart contracts are not yet an established standard. The system would bring up issues regarding privacy and personal data protection. For now, with current blockchain applications, it is theoretically impossible to delete personal data (e.g., how many times a customer X played song Y).

By crossing records from the blockchain library with the customers' usage data, companies could have access to their use of songs. This may be problematic in case persons want to exercise their "right to be forgotten". Third parties could gain access to or make use of the data to their advantage in some nefarious way. For example, a health insurance company may want to analyze songs people listen to using algorithms in order to forecast the likelihood of diseases such as depression and then adapt their insurance costs accordingly.

Finally, the coordination between on-chain and off-chain is essential for implementation, and it has to become a standard for parties to follow. They would also have to upload all the information, at this point, manually, which would be time-consuming. Human error is a possibility, and information uploaded is not guaranteed to be correct. In 2014, some players in the music industry sought to implement a standardized global database, the Global Repertoire Database. The project failed as no consensus regarding the standardization and validation of entered data could be reached (PWC, 2018).

5.5. Study Limitations

Although the research was broad in terms of participants, both quantitatively and qualitatively, an opinion from the point of view of streaming platforms would give further needed perspective about their concerns regarding this subject. Access to labels and publishers' contracts with platforms and artists is another limitation that would further add critical information to the issues raised in this study. Information from previous research and current professionals can be limited as the data changes depending on the period, the artist, and the company. Literature about the music industry is very dated and few studies have been conducted about the topic of innovation in the business model of MS.

6. Conclusion

The aim of this study was to show how BT has excellent potential to address many of the problems the music industry currently faces, such as royalty distribution and accounting, trust in the system, and fair remuneration. The analysis demonstrated that BT is an obvious solution. However, before it can be implemented, the business has to overcome various obstacles. The lack of knowledge from professionals in the industry about how it actually functions BT itself is a significant drawback, as well as lack of interest in technologies such as blockchain. To overcome this fact, musicians and managers must be educated somehow in both subjects.

Once and if ever implemented, BT will enable musicians to achieve financial flexibility and therefore enable them to focus on their core competencies. At the same time, they will have the assurance that they will receive the appropriate royalties for their creations. Labels will have more time to spend on crucial parts of their business, and publishers might have to reinvent their services to continue in the business. As for platforms, it is still uncertain if they would experience a decline in profits if the system were to become more innovative than it is at present through BT. More research would have to be done with the companies to arrive at a relevant conclusion.

Beyond this study, the industry could aim for a single holistic blockchain solution that would eventually collect, retrieve, link, store, and send back all types of data, including musical records, streaming services, ticketing, merchandising, and much more. In this new era in the music business, embedded smart contracts could include incentives to fans and audiences to share music and thereby receive rewards for promoting music to within social networks.

Future research should address how metadata management of musical records can be more consistent and transparent and how to deal with past data. If implemented, researchers should examine the varied impact on various stakeholders and the functionality of the framework as a whole. Data should be analyzed about whether there is an effect on music consumption when the underlying business model and legal framework of the industry changes. Also, research should be conducted concerning how creators can fully monetize music records via all platforms of the digital age such as social media (e.g., live streaming on Instagram, or Instagram stories, or posted videos) and other websites which provide audio content either directly, such as music uploads, or indirectly as found in the background of applications or videos. What is clear is that the industry is on the cusp of change as blockchain technologies take root in various other supply chains. It is just a matter of time before music also embraces it.

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8. Appendix

8.1. Questionnaire

[Introduction]

Dear participant,

Thank you very much for agreeing to participate in this survey. This is part of a research as a requirement for completion of a Master's in Business Degree at Cátolica Lisbon SBE.

The aim of this survey is to collect data about one's relationship with music streaming services such as: Spotify, SiriusXM, Tidal, Pandora, Deezer, Amazon Unlimited Music, Apple Music and Google Play Music. Please keep these companies in mind when answering the questions.

The information provided by you in this questionnaire will be used for research purposes. It will not be used in a manner which would allow identification of your individual responses. Please answer as truthful as possible.

If you have any further questions, please do not hesitate to contact me at m.aliceroche@gmail.com .

Thank you! Let's go!

[Streaming Service Usage - 5 Items]

[Introduction]

Please keep these companies in mind when answering the questions: Spotify, SiriusXM, Tidal, Pandora, Deezer, Amazon Unlimited Music, Apple Music and Google Play Music.

a. Are you a user of any of these services? (Yes or No)

b. Which one? Mark all that apply. (Spotify, SiriusXM, Tidal, Pandora, Deezer, Amazon Unlimited Music, Apple Music and Google Play Music)

c. What version of the service do you use? (Free or Paid)

d. How much do you pay for the service(s)? You can round up. E.g.: if you pay $9.99, write $10. (Complete with number)

e. How often do you use a music streaming service? (More than once a day, Once a day, Three times a week, A couple of times a week, Once a week)

f. What are the three main purposes of the use of a music streaming service? (Listen to music, Listen to podcasts, Keeps me updated on releases, Discover new music, Discover new podcasts, Use as an entertainment, Use for sports, Other – please specify)

g. What features does your music streaming service provide that are seen as GOOD features for you? Please, mark all that apply. (Podcast, Unlimited Playlists, Suggestions, "Radio" Function (keeps playing music that are similar to a playlist), Suggested Playlists, Friends' plays, Charts, Multiple Devices Play Option, Family Sharing, Search, Other - specify)

[Willingness to Pay - 7 Items]

Thinking about the same group of companies as before, please rate the statements below according to a scale of 1 to 5, 1 being totally agree, and 5 being totally disagree.

a. The music streaming service I use fulfill my needs

b. The features I have available are sufficient for me

c. I wish I had more available features

d. The price is fair

e. I would pay more for a better service

f. I wish I paid less

g. I wish I had more features for the amount I pay

5-Point-Scale: Totally Agree – Mostly Agree – Nor agree or disagree – Mostly disagree – Totally. disagree

[Demographics - 5 Items]

a) Where are you from? (List of countries)

b) Age: How old are you? (Number)

c) Gender (Male, Female, Other)

d) What is your current occupation?

(Student, Working, Unemployed, Disabled (not able to work), Retired)

e) Level of education (Bachelor's Degree, Master's Degree, PhD, High School Degree. Other)

[Debrief]

That's it! Thank you again for participating. All the information provided by you will be handled confidentially.

If you have any further questions, please do not hesitate to contact me.

E-mail: m.aliceroche@gmail.com

Subject: Music Streaming Questionnaire

8.2. Semi-structured Interviews

Thank you very much for agreeing to participate in this survey. This is part of a research as a requirement for completion of a Master's in Business Degree at Cátolica Lisbon SBE.

The aim of this survey is to collect data about the relationship between people who work in the music industry, music streaming services and blockchain technology. Please keep these companies in mind when answering the questions: Spotify, SiriusXM, Tidal, Pandora, Deezer, Amazon Unlimited Music, Apple Music and Google Play Music.

The information provided by you in this questionnaire will only be used for research purposes. Please answer as truthful as possible!

PART I

Keep in mind to answer the questions based on your previous experience(s) and your current role, **not on predictive information**.

1. What is/were your role(s)? Please describe it in as much detailed as possible (label/company, Artist, Songwriter, etc.).
2. Regarding the relationship between artists and company, how do royalty payments, in general, flow in the company that you work / have worked for? If you can, provide numbers/percentages.
3. How do royalty payments flow regarding ONLY music streaming services and for your specific role? (E.g.: if you are a creator, how often do you receive it, how do negotiate your contracts, how much is the percentage you usually get, etc.)
4. What is your opinion regarding the periodicity of payments?
5. What is your opinion about the transparency of payments?
6. What is your opinion about the amount paid/received?
7. Do you trust the payment system as it is now?

PART II

8. Do you know what Blockchain Technology is? If yes, skip the next point. If no, here is a quick explanation:

Mostly used for financial services, blockchain technology is defined as a type of Distributed Ledger Technology (DLT) that enables sharing information between different nodes in a transparent and secure way. In short, the information is recorded in blocks that are added to "the chain" as unique codes, known as hash, that are generated cryptographically

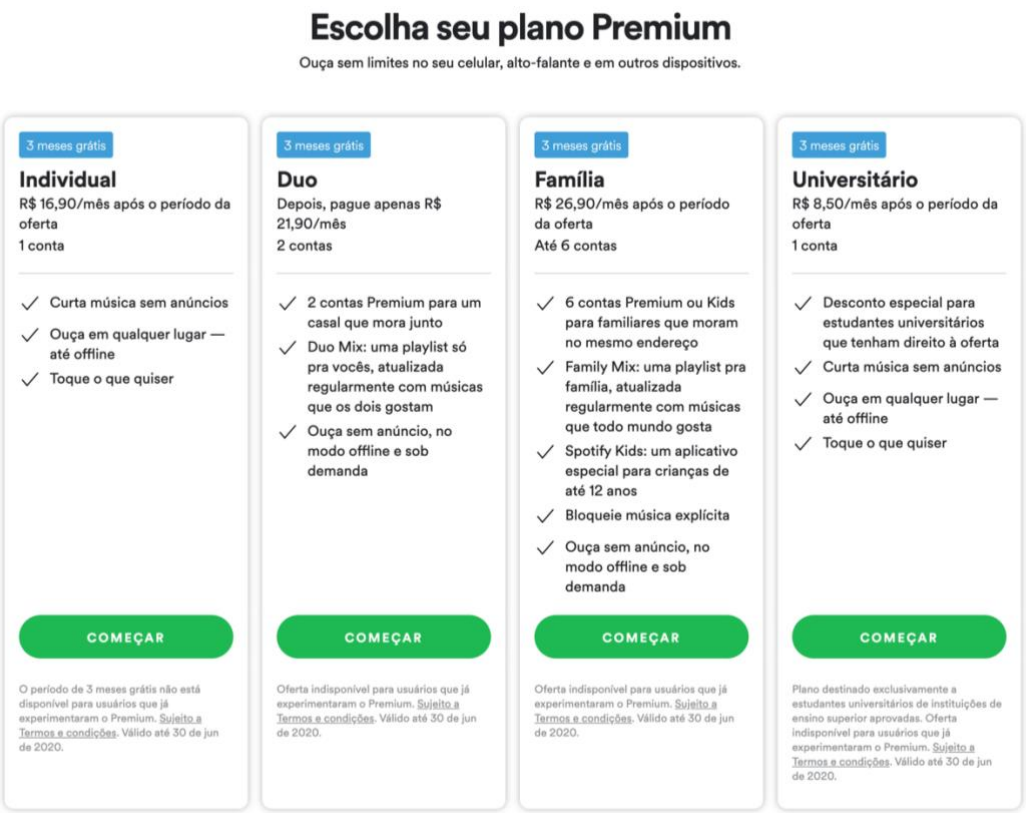
(meaning, encrypted) based on the previous blocks or on encrypted information if it's the first time that is being added. The hashes are also timestamped. This technology creates a secure, immutable and trustworthy record of the chain of transactions of the information.

Based on this:

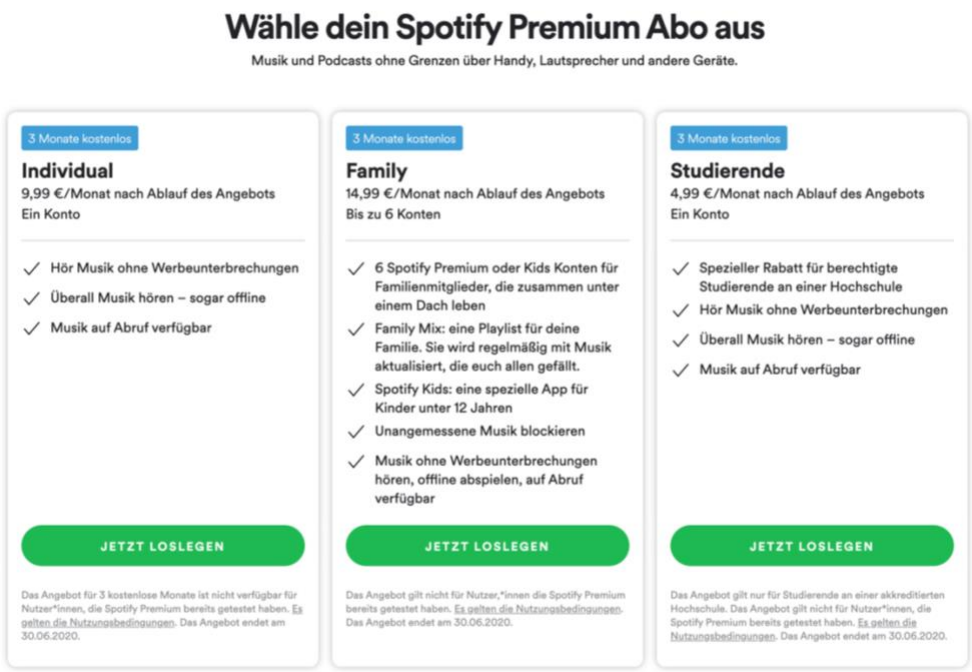
9. Would you trust blockchain technology? Why? Why not? In what situations?
10. Do you own/invest on cryptocurrencies?
11. Do you think Blockchain is a technology that can be used in the music industry? Why? Why not?
12. Do you think Blockchain Technology can impact the music business? How? Why? Why not?

8.3. Spotify Prices in Top 5 Countries

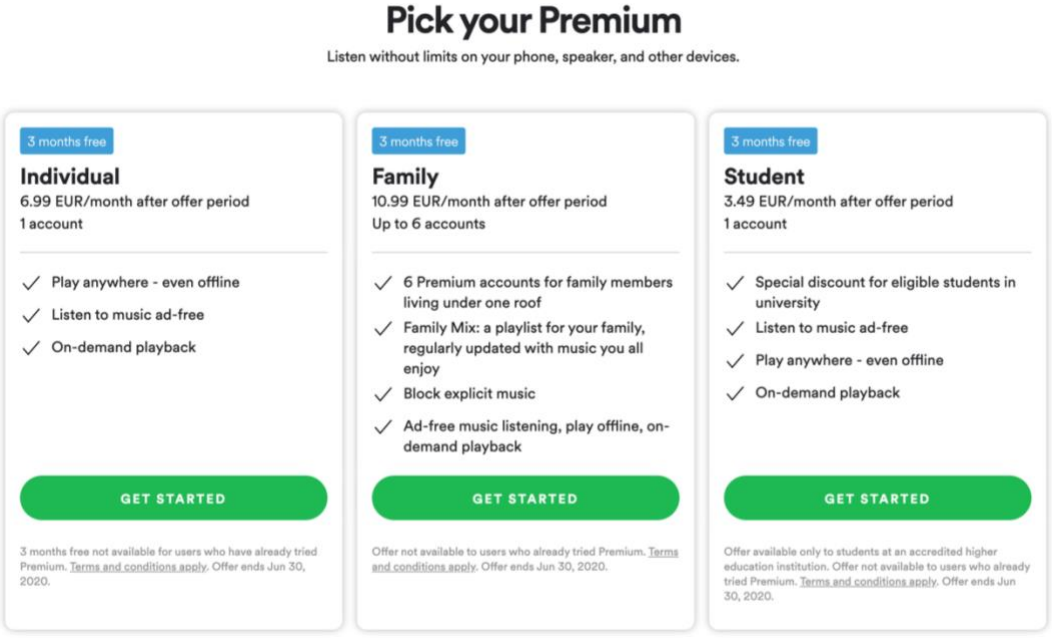
8.3.1. Brazil



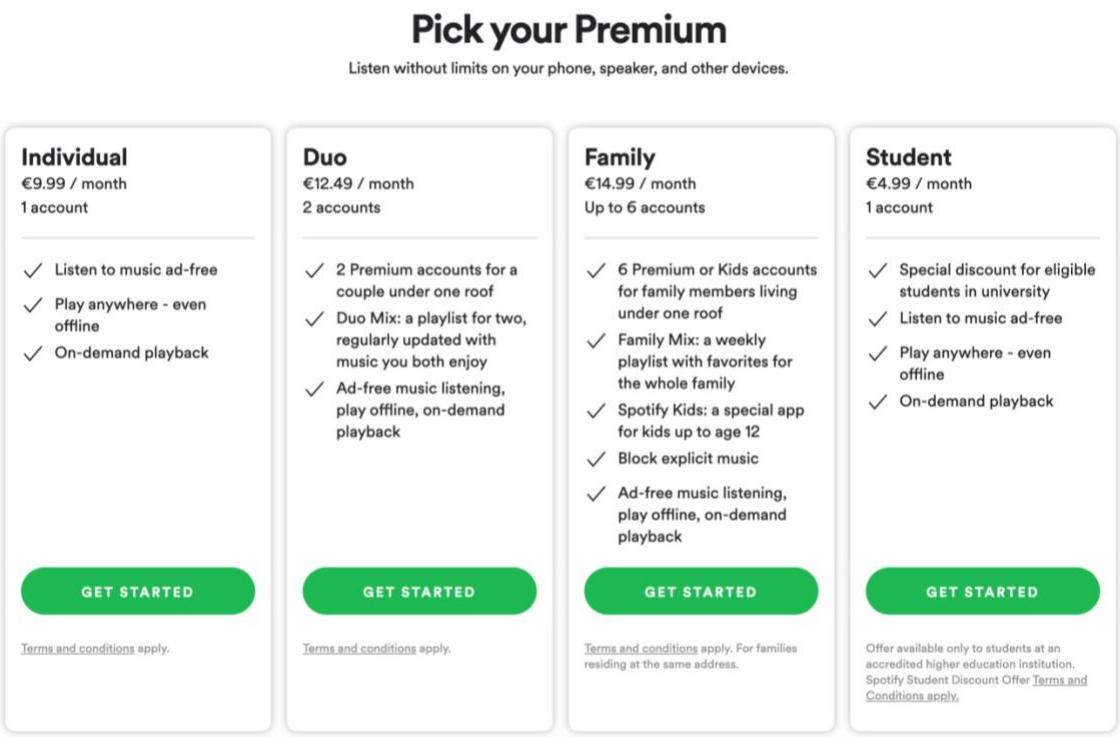
8.3.2. Germany



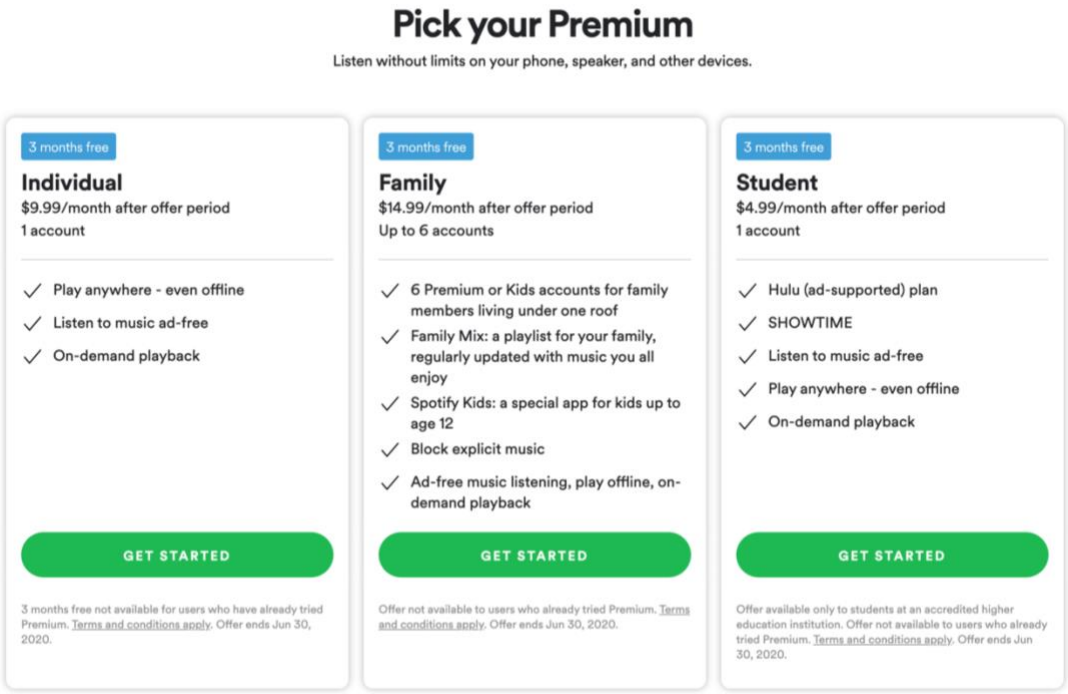
8.3.3. Portugal



8.3.4. Ireland



8.3.5. U.S.A.



8.4. Interviews Findings

Name	Position / Role	Years in the industry	Opinion about MSS framework	Opinion about periodicity of payments	Opinion amount paid/receive	Trust in the system	Knowlegde about BT	Trust in BT	Opinion about BT in the industry	Opinion about implementation	Impact of human error
Alessandra Simões	Makerting at Braslive	3	Foggy	It is fine since companies need time	Very little for artists.	Trust in the digital world is higher than traditional ways	None	Would trust it.	It seems that it could have a great impact.	Thinks the industry could implement, but not sure if wants to.	Not mentioned.
Felipe Rangel	Product Manager at SóMúsica	10	Not ideal for digital music	Not fair to artists, however labels do see them as investments and need to have returns. But SóMúsica does not pay royalties.	Is very little compared to what labels make.	There is more transperancy than before, but the problem relies on the amount received.	Little	Would not trust it completely since there is little regulation about its use.	It can be good if there are more regulations.	Do not think would be accepted by the industry	Not mentioned.
CEO I	CEO Record Label	5	Confusing	Fair for labels. No opinion about artists'.	Fair for how it works today	Can't say if trusts or not. Just accept it	Some	Would trust it.	Thinks is a great idea. Anything that would save time from accounting royalties is a plus	Maybe it would be difficult to convince the whole industry, especially veterans.	Can occur and have had problems with it.

Guilherme Tannenbaum	Founder Braslive	10	Labels depend a lot on publishers' honesty and it can be difficult sometimes	The ideal would monthly, however touring artists do not care that much since they have other income sources.	For companies it looks fair, but there is no way to say that is 100% transparent.	The company does not receive directly from the platforms so it relies on others	Little	Would trust it, but not 100%	Technology is the way, the industry should use what BT has to offer.	Could be difficult. It is a very egocentric industry.	Happens all the time with the current system and there is no way to correct it.
Guilherme Tettamanti	Sound Engineer	20+	Sound Engineers do not always get paid in royalties. It is getting better in general, but it still not fair.	Every 3 months works for him.	It is not the real value, it is an average.	Trusts more in digital system, but not completely.	Little	Would trust it.	Has a great potential to disrupt the system.	Do not know how the industry would react. Lacks knowledge.	Happens all the time and they cannot really say how and when.
Hudson Barineau	Artist	5	It can be very complicated to understand and most artists do not which reflects on their income.	For independent artists is not ideal. They depend on the money and it takes too much time for them to put their hands on it.	A big problem is that artists do not know how to deal with money. They spend the advancements before giving any return to the labels for example.	It is complicated and people need to trust since there is no other option.	Some	Not 100%	Thinks is a good idea, but would have to learn more about how it would work.	Industry might not be willing to.	Not mentioned.
Isaac Mao	Founder Musicoin	10	Outdated. Does not work for the industry anymore	Slow and does not meet the artists' needs.	Not fair at all with musicians.	It is not a transparent system,but it could be with BT.	Expert	100%	Could change the way everything works. Musicoin was	Musicoin is a different platform for streaming and payment. Implementing in	A lot errors occur in the current framework. BT can tackle the

									foundedfor that.	the current system might not be feasible.	problems in a much faster way.
Manager I	Artist Manager	20+	Complicated. Hires another company to do it for him.	For bigger artists it does not matter that much as they have other revenue streams.	People use to get more money from CDs, now the industry relies on touring, records and concerts.	Do not trust any MSS.	Little	Do not fully trust anything that is digital	It would be great if the system could be more transparent and easier to understand.	Do not think the industry would implement it since it is a shift of power.	Not mentioned.
Jessica Nunes	Label Managerat Braslive	5	It's confusing with a lot of players and percentages to be deducted. One gets pay per stream and not per CD. It gives the artist more creative freedom. The cost of producing and promoting phisical music does not exist with streaming.	It works, but it could be faster.	It is not fair how much is paid.	Thinks is transparent for what she needs. It is detailed enough, however the reports are confusing.	None	Would trust it.	If it can facilitate the whole process, it is necessary.	The system is almost immutable, so hard to change. A significant change like this one would be very hard to implement and be accepted by the industry.	There are some points that have a big incident of errors: when an artist uploads information they can do it wrong for example.

Luis Delgado	Founder Label Engine	15	It was worse. It has been slowly getting better. However it is still blurry.	At Label Engine, they pay montlhy, but regarding royalties from 3 months. It is an advancement but it could be faster.	As a publisher, he sees no problem.	Since it is blurry, it is hard to talk about trust. It is very hard to audit.	Little	Would trust it.	Can change things for the better. Tranforming estimated numbers into real numbers.	The industry needs something like BT. But there is a grey area between OS and NS, and how each group would accept such technology. The new generation is more keen in adapting a change.	Not mentioned.
Pablo Bispo	Music Producer	4	It is so complicated. Companies have departments to take care of it. But musicians do not have the knowledge to account for what they deserve. The system does not help.	As a big musician, it does not matter. As a less known, every month counts. Artists reinvest the money on their careeers.	Again, as a known musician it is not a big part of the revenue. For independent artists, it is the difference between continuing in the career or not. Today, he gets 40% of what he should from streamings, but SR that he produces get on average 100 million streams every 3 months.	Do not trust it. The way royalties are collected and distributed must change.	None	Would trust it.	Anything that can change the current system, is a plus. Especially when is related to intellectual property.	Could be hard, but the community of musicias would have to push for the implementation.	Not mentioned.

Toby Bird	Artist Manager	5	It works, because it has been like this since forever. Never had a problem with it, but it can be foggy.	It works, but it could be faster.	Platforms take advantage of independent artists since they do not pay enough but sill have a large portfolio.	Trusts the system. The artists that he manages know how it works which helps.	Some	Would trust it.	It can impact the industry when it comes to the ammount paid.	Difficult to implement.	Not mentioned.
Torcuato Mariano	Artist / Manager	20+	Cannot understand, it is foggy.	Does not receive a significant ammount so he does not pay attention to it.	Does not receive a significant ammount so he does not pay attention to it.	It is unfair, there is no transparency about how it works.	Little	Would probably trust it, despite the fact that he does not like anything that is digital.	He sees the potential of BT to change the remuneration, hence would give it a chance.	Anything that can make the system work better is valid.	Where there are humans, there are errors.
Airton Coelho	Blockchain Expert - Computer Engineer, Master in Computer Science	20+	-	-	-	-	Expert	-	-	-	-