

## **NFTs and the Music industry**

Is there a possibility for artists to benefit from NFTs in  
today's digital music market?

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## Abstract

The primary focus of this thesis is based on Web 3.0 technology, specifically Non-Fungible-Token (NFT). This phenomenon represents an innovation in blockchain technology. NFT enables purchasing and selling of digital items such as art, music, books, images, text, etc. Due to the use of blockchain technology and the unique nature of NFT tokens, they cannot be duplicated and are nearly secure (which will be explained why later in the paper). Moreover, the purpose of this paper is to determine what this innovation is and how music artists and fans can use it to create a unique engagement with one another, how fans can support their favorite artist, and explore new opportunities presented by the NFTs, which provide artists with a unique payment system that enables them to earn more income than ever before. The paper begins with the definition and delimitation of the relevant music industry and a brief history of what has been accomplished so far in the music industry, copyright law, how NFTs have progressed, and how digitalization has impacted the music industry.

In addition, the Internet and Web 1.0, Web 2.0, and Web 3.0 are explained. Lastly, I'll discuss the advantages the Web 3.0 application has over previous innovations.

A qualitative research method has been selected because the topic is uncharted, and the relationship between this specific technology and the music industry is not well-researched, so I conducted my own investigation through semi-structured interviews with experts from both industries. The most critical issues and opportunities discussed in this paper are usability and technical challenges, environmental challenges, legal frameworks, business models, the market, and political issues.

The paper concludes that the primary problems within the music industry are not inherently rooted in digitalization, even though digitalization is the foundation of these problems. The problems are essentially political, with the decision-making within the music industry determining how the economy should function. Different parties remain an adversary to each other, resulting in the dysfunction of the music industry. This is why NFTs cannot resolve all systemic issues. However, if those in charge of the music industry allow it to operate properly, they have the potential to assist the industry.

# 1. Introduction

Technological advances have always been crucial in humanity's life. Although the word technology may strike many people's minds as a contemporary idea, it is a very ancient term. Technology is a word that borrows from two Greek words, *Techne*, which means art or skill, and *Logia*, meaning the collection of techniques. Computers, devices, machines, and factories are all examples of technological advancements that do not require their operators to understand the underlying mechanisms. Many philosophers have arguments over technological matters. Aristotle, Francis Bacon, Charles Darwin, Heidegger, etc., express their ideas positively, pessimistically, or sometimes in a neutral matter. What is quite unison in their mindsets is that technology is made by humans for humans, preferably to make it easier to be even more human again. This is regardless of the nature of the technology; destructive, innovative, or as an elevation of already established practices (Hofseth, 2023).

Centuries later, we discuss the same phenomenon with an entirely different model (Digital Technologies). We can agree that many things have changed in our lives since the advent of digitalization. Digital technologies have helped many people upgrade their living situation, and it has also disrupted some economic sectors. Digital technologies have been a motor for this evolution in empowering individuals and, thereby, have been a vital force in the ongoing democratization of each of us and within different sectors of our societies. These evolutions might occur in several ways. Brian Arthur debates that evolution may be understood in two broad senses. The process of developing something progressively can be called evolution. These terms often can also be understood as development. The other term of evolution derives from the process in which all substances from an equivalent class work in a chain to get a common descent from a previous innovation to a new one (Arthur, 2014). We have witnessed both types of evolution in the music industry, whether it changed from something to another (the old music industry versus the new music industry).

## 1.1. Background

I have always been a big fan of new technologies and how they can help us boost and simplify our lives as consumers. My curiosity led me to study and gain a bachelor's degree in computer science. Although I have been enthusiastic about technology, my first passion has always been music. As an artist, I am aware of how technology can promote artists and make

social awareness, but the economic disruptions cannot be underestimated. There are two sides to the story when one asks artists about the digital revenue and when one asks fans about their happiness with the subscription fees they pay to stream services in order to get an extensive buffet of catalogs (in which they both are standing on different sides of the same business model). With the new technology and the fall of revenue for recorded music, major record labels were willing to dominate the music economy by bringing the 360 deal models. This has resulted in more remuneration for the labels from all the artist's revenue streams, while the economic realities, especially for smaller artists, have become more challenging (Hughes et al., 2016).

Therefore, it seems like the flow of revenue left for many artists is unfair. Is there a way to help struggling artists get a better income source to empower them in their careers by enabling them to exercise more control over their own creations? These were the questions I asked myself at the outset of this thesis. Could I contribute to illuminating the path toward a sustainable career for musicians and artists? Could I help them in their, and my own, quest for an answer to these challenges?

I believe my background in computer technology and music (as a musician, sound engineer, and now music business student) gives me a broader scope for considering this issue from many perspectives. By writing this thesis, as a researcher, I hoped to uncover a solution to mitigate some of the problems created by the initial digital disruption. Since there is little research on this topic (I have searched and not found any meaningful contributions), I thought I could try to do some pioneering work on some of the newest technological innovations: Web 3.0 and especially NFTs. Can these two technologies, or areas of technologies, assist artists in their career building?

## **1.2.Motivation**

I was inspired to write this thesis by two factors, my interest in technology and my passion for music. We have all heard of Bitcoin and cryptocurrencies since it has existed for some time. I have viewed this phenomenon and its surroundings with suspicion. I believed this would not last long because having something intangible would not stay forever. Like a bubble that could burst at any moment, it only relies on the Internet, and there is no such thing as a cryptocurrency without the Internet. Not only were my predictions incorrect, but the internet has also become a trusted set of technologies that now serve as a solid foundation for numerous aspects of life. The majority of those who depend on the internet for the way they live their lives are members of the younger generations. Even when the internet goes down for



a few minutes, I feel instantly bored. Due to the internet's strong connection to humans, the notion that something is not viable because it is intangible is no longer acceptable. The internet has demonstrated that if a phenomenon offers value to people, it will eventually find its way into the culture. This inspired me to investigate the new and coming innovations of the «new» internet, Web 3.0, to understand the phenomenon better. Perhaps it was time to challenge my pessimistic perspective and learn for myself what these technologies have to offer, their opportunities as well as their threats.

The second motivation comes from my artistic perspective. As a small artist, I was confident that it is only possible for smaller artists to make money through traditional business models, most notably the digital streaming platforms, which will be discussed later in this paper. I was hoping for discovery that could provide an alternative or perhaps an add-on to what already exists in the music industry, believing that a novel approach could result in increased revenue for numerous artists, including my band. I personally hoped that NFTs might fill a gap in today's music market, offering an alternative business model and a more direct transition between artists and their fans.

### **1.3. Research question**

The arguments mentioned earlier persuaded me to initiate my investigation into NFT and Web 3.0. Specifically, I wish to clarify how artists benefit from NFTs and what challenges Web 3.0 and NFTs can present. Since many artists are concerned about environmental impacts, it may be crucial for them to decide whether they are willing to utilize such phenomena or wish to keep their hands clean from such harmful challenges.

Hypothesis:

This research was chosen due to the pros and cons of this innovation, its visions, and the need to find a balance point for the artists' sake.

Research Questions:

1. What are Web 3.0 and NFT, and why should artists utilize these innovations over the previous model?
2. What new possibilities does NFT have to offer to artists? And what new challenges might NFT bring?
3. How can WEB 3.0 and NFTs help artists stand out in the current revenue streams?

## 2. Theoretical Framework

To understand the music industry and the challenges better, one may look back to when the rules and regulations for protecting art were first put in place. These legal frameworks for the protection of the arts are called copyright. Without copyright, no artist could be certain of remuneration for the use of their work, demonstrating this regulation's importance.

The statutes of Anne in 1710, The Bern Convention 1886, and the Rome Convention 1961 are essential pillars in an international unified legal framework, ensuring the right holders of music protection and remuneration across national borders and defining the Anglo-American sphere of copyright.

The nature of this paper is not directly copyright related, so this paper stops at the Rome convention after providing a brief history of copyright. Nevertheless, it is crucial to bring copyright in at the very outset of my thesis since it is the foundation for all music industries practice. Moreover, digital innovations have not changed this phenomenon, although many would claim that the online marketplace has challenged it. Let us consider the music industry a giant skyscraper. Copyright is the substructure and the skeleton of this building, and without protection from the bottom up, the whole structure would collapse.

### 2.1. What is copyright?

According to Frith and Marshall, the term copyright is very complex and can be enigmatic, especially for those without knowledge of these rules and regulations. One cannot “copyright something” since ‘copyright’ is a noun, not a verb, a thing rather than an action.” Although copyright does exist, it is dependent upon there being a copyrightable work to begin with; copyright is thus seen as subsisting rather than just existing. Suppose someone creates a song (sometimes referred to as a “work” under copyright law, comparable to any other innovation). In that case, the song contains both the music and the music's copyright, yet neither would be possible without the song. It is essential to recognize that the work and its ownership are separate. When you buy a CD, you get both the actual disc and the audio recordings of the songs. You may use the CD as a Frisbee, lend it to friends, annotate the sleeve notes with critical remarks, or listen to the pieces. Like all other materials and natural things, you are the object's owner.

Nonetheless, the embedded and basic copyrights are owned by the right holder. The author (and anybody or organization with whom the author wishes to share the masterwork

copyright) holds the original work. Nevertheless, the producer maintains ownership of the master recording (and whoever else the producers choose to transfer the license with). They remain with the invention and recording regardless of their material or physical form. Due to this fact, the CD owner (consumer) cannot duplicate it because of the lack the rights to the original. Although it is possible to replicate it by "burning" its content onto a blank CD, unlike the other methods, this one calls for "permission". (Marshall & Frith, 2013, p.6).

## **2.2. The Statute of Anne and copyright's philosophy:**

The first modern copyright law, the Statute of Anne (Copyright Act of 1709), was passed by the British Parliament in 1710, and it made London the hub of the early music publishing sector (Tschmuck, 2017, p.13).

The Licensing Act 1662, a censorship law enacted by Restoration King Charles II, was repealed on May 3, 1695. The Statute of Anne was established as a political reaction to avoid "abuses in printing subversive, traitorous, and unlicensed books and pamphlets," the Licensing Act was titled "An Act for Preventing Abuses in Publishing Seditious, Treasonous, and Unlicensed Books and Pamphlets." The Stationers' Company of London was allowed broad control over the printing business, including the authority to seize illicit printing machines and punish their owners. Under the Statute of Anne, publishing a composer's work without authorization was not unlawful, but it did not stop piracy allegations from flying between music publishers (Marshall & Frith, 2013, p.25,26).

At the beginning of the 19th century, the ideas that define modern copyright law underwent a paradigm shift. There are three features shared by the laws enacted during the French Revolution (1791 and 1793) and its counterparts in Prussia (1837) and the United Kingdom (1842) (Talfourd's Act). A foundation of protection now comes from the author; the mechanism of the term was changed from publication to the author's life, which now includes a post-mortem benefit for the author's dependents. Protected content broadly refers to works of literature and art that are not printed books (including music). It establishes a baseline criterion of quality (originality). Restricted activities relate to an amorphous work value rather than written substance. Transcribing speeches and lectures and instrumental arrangements or snippets are considered unauthorized derivatives when performance rights for dramatic and artistic compositions are raised (Marshall & Frith, 2013, p.32).

### **2.3. Berne convention:**

The Berne agreement of 1886 established the first modern copyright we know today. This invention has elevated the international system that adopted the creator's terms and breadth. The following guidelines were adopted at a preliminary Congress on Literary and Artistic Property that Victor Hugo organized in Brussels in 1858. The laws of "all civilized peoples" should specify the author's ownership rights to his literary and artistic creations. The principle of "national treatment" states that all nations should recognize non-nationals rights to their works on an equal footing with those of their residents (copyright policy should be based on a single framework worldwide). Treating people according to their nationality was established during the diplomatic conference in Berne in 1886, and the basic norms that applied, regardless of national traditions, were still relatively lax.

The minimum sentence of Berne has remained at the author's life plus fifty years even though both Europe and the United States have adopted an extended term of seventy years (postmortem auctoris) through the 1993 Directive on harmonizing the term of copyright protection and the 1998 Sonny Bono Copyright Extension Act, respectively (Marshall & Frith, 2013, p.35).

Nine nations signed the original Berne text, seven of which were European. There were over 130 signatures as of 2003. The Berne Convention has undergone six revisions since it was first adopted in 1886, primarily to allow authors' rights to keep up with evolving uses of their works made feasible by technical advancement. The Convention was updated in Berlin in 1908 to include mentions of photography, cinematic films, and sound recordings. Television was included in the Convention's purview at Brussels in 1948, while the Rome Act of the Convention's authority over writers' works was extended to sound transmission in 1928. In 1928, the idea of an author's "moral right" was first introduced. Later amendments in Stockholm (1967) and Paris (1971) focused on topics like "compulsory licensing" of films and potential Berne Convention exemptions for less developed nations. The 1996 WIPO (World Intellectual Property Organization) Copyright Treaty, recognized as a "special agreement" under Article 20 of the Berne Convention, is the most current modification. When authors make their works accessible online or elsewhere via wired or wireless methods, allowing users to access them from a location and at a time of their choosing, the 1996 Treaty offers additional protection for authors (Marshall & Frith, 2013, p.71).

#### **2.4. The birth of the CMOs (Collective Management Organizations):**

In the year 1849, several songwriters were enjoying a drink at a café in Paris when they overheard the café orchestra playing their music. They refused to pay the bill and filed a lawsuit against the café owner because they believed they were entitled to payment for their musical usage. The verdict supported the composers' entitlement to compensation for public performances of their compositions, establishing the "performing right" legal concept. France formed the first national organization advocating for the rights of songwriters and composers in 1853 in reaction to a court judgment. Société des auteurs, compositeurs, et éditeurs de musique (SACEM) was responsible for pursuing payment on behalf of its members when their work gets performed. Individual composers would have had difficulty monitoring the performances of their compositions and negotiating remuneration. This is the reason why SACEM was founded.

In addition, SACEM exemplified the concept of 'collective management' of authors' rights. This business decision has become essential to the functioning of the music industry. It is recognized by anti-monopoly agencies because the existence of a single music rights organization in each country (except for the United States and Brazil) dramatically simplifies the business dealings of music users such as broadcasters, café owners, and concert promoters who can obtain a single license (Marshall & Frith, 2013, p.70). SACEM is not the only collective management society but was one of the first. Almost every country that follows the equivalent regulation of copyright has its own CMO, and these CMOs are connected worldwide.

#### **2.5. The neighboring rights age where Rome convention was born:**

The music industry was on the cusp of a technological and economic revolution when the Berne Convention was drafted. Live concerts and selling printed music were the only ways to profit from music in 1886. Twenty years later, radio overtook records as the primary medium for consuming musical compositions, with sound recordings evolving into a potent new form of audience connection. The recording and radio companies also asserted their own copyright interests in music and other content, meaning the Berne Convention had to handle these new uses.

Early in the 1930s, several successful test cases were presented in European nations. New "collective management" organizations were formed to handle this right by giving licenses and collecting fees from restaurants, broadcasters, and other consumers of recorded music.

Along with these decisions, a worldwide body was formed to lobby for the needs of the music industry. In 1933, business leaders from Europe, including Germany, France, Italy, and the United Kingdom, gathered in Rome for the International Federation of the Phonographic Industry (IFPI) inaugural congress. IFPI has been a strong proponent of copyright reform on a worldwide scale since it was granted consultative status by the International Labor Organization, UNESCO, the World Intellectual Property Organization, and the European Commission. One of its intended results was a kind of Berne Convention for the recording industry and other owners of neighboring rights. It took over thirty years to approve the 1961 Rome Convention for safeguarding artists, manufacturers of phonograms, and Broadcasting Organizations, principally due to conflicts of interest between numerous groups of surrounding rights owners. Regarding public performances and recordings, the Rome Convention declared that creators and labels should have equal authority to decide. Additionally, it mandated that broadcasts and sound recordings be protected by copyright for at least twenty years.

Sixty-six nations, or little more than one-third of the Berne Convention's membership, had ratified the Rome Convention by 2003. Nevertheless, Rome had been augmented by the WIPO Copyright Treaty and the 1996 WIPO Performances and Phonograms Treaty (WPPT) (Marshall & Frith, 2013, p.74,75).

Both the Berne Convention and the Rome Convention had some challenges as well. For instance, according to Frith and Marshall, the Rome Convention was unsuccessful in determining the divide between performance royalties and sound recording. However, this paper has not addressed these issues since they are not the subject of this article (Marshall & Frith, 2013, p.75).

## **2.6. The Music Industry:**

### **2.6.1. What is an industry:**

One must define the term industry first to answer the question of what is the music industry and whether it is plural or singular? According to Wikström, an industry is characteristically conceived as a particular subdivision of the economy that deals with the factory production of items intended for the public market. With the start of the industrial transformation, the term "industry" has evolved beyond its original meaning. It is frequently used to refer to manufacturing, promoting, and sharing most supplies, including services and non-material items. Different industrial activities can be divided into various categories and organizational structures. One of the more popular formats is

to use the terms primary, secondary, and tertiary industries. The first category includes, for instance, mining and agriculture, the second includes manufacturing, and the third category includes service production. Other methods of structuring industries include dividing them into light and heavy sectors and business-to-business and business-to-consumer sectors (Patrik Wikström, 2013, p.46).

### **2.6.2. A brief history of the music industry:**

So far, the definition of the industry has been discussed. One could look at the music industry's history to provide an answer. Tschmuck underlines in his book that Thomas Alva Edison's (1847–1931) creation of the phonograph in 1877 signaled the beginning of the contemporary music business with the mass production of phonograms and the appearance of a worldwide distribution system for music cylinders and music records. Conversely, music was a commodity before the recorded music industry even existed. Old records show that musical goods were exchanged as early as the decades BCE. According to legend, in the fifth century BCE, the Greek poet Pindar sent 470 poems to the tyrant Hieron in Sicily from his city of Thebes. Pindar was a kind of early music entrepreneur besides being a writer. Pindar also choreographed the dances for his odes because musical performances and dance were typically performed in conjunction with lyric poems.

Due to this information and the importance of this history, the economic development of music can be helpfully divided into five eras:

1. The period of music patronage, which lasted from antiquity to the late eighteenth century;
2. The period of music publishing, which lasted from the eighteenth century to the 1920s, during which music was an essential component of liturgy, and the term "Cappella" was still used to describe singing in churches and chapels—the rise of commercial concerts, the era of opera, and the era of music publication.
3. The period of broadcasting from the 1920s to the 1950s; the First World War halted the expansion of the radio and recorded music industries;
4. The rock 'n' roll revolution, the oligopolization of the recorded music industry in the 1960s and 1970s, and the recorded music industry's history from the 1950s until around 2000.
5. The rise of the compact disc and the superstar business, the merger frenzy in the recorded music industry, the era of the digital music economy since 2000, the

development of the MP3 file format, and the digital revolution in music (Tschmuck, 2017).

The concept of the digital era will be discussed later in this paper.

### 2.6.3. What makes up the music industry?

According to Wikström, the simple answer is recording, publishing, and live performance make up the music industry.

In the **recording section**, creating intellectual properties through recording artists' studios or live performances is a staple of the record industry's traditional business model. The record label then promotes and releases these recordings to customers worldwide.

The **music publishing** sector has little direct interaction with the music public, unlike the recording sector, which is a business-to-consumer industry. In order to license their compositions for other uses, for example, conventional recordings, sheet music, background music in film makings, or live performances, composers and lyricists deal with publishers. The creator or writer receives one of three royalties from the licensee in various ways.

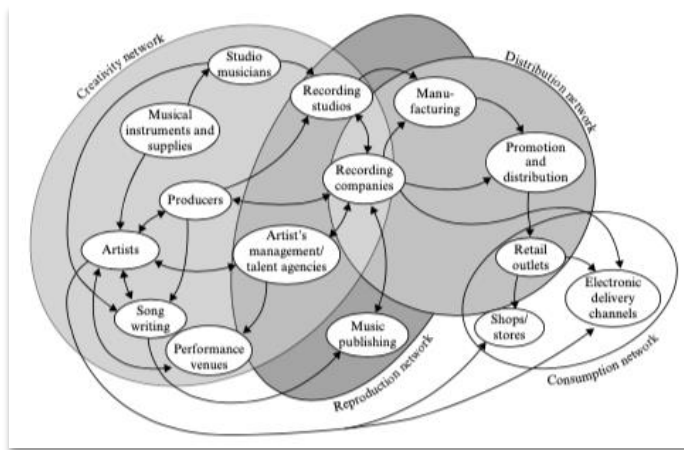
The last music industry in Wikström's book is **Live performance**. Wikström highlights that although the recorded music industry is larger than the live music industry in terms of overall revenue, live music is typically a more significant source of income for musicians (although it is worth mentioning that there are two types of income which one should separate from each other. Gross income is the whole revenue, and Net income is the final revenue after deducting the costs and other expenses). The live sector of the music business is a complex system with many facets. Live music is played everywhere: at private events, amphitheaters, neighborhood pubs, clubs, rock festivals, sporting events, crowded streets, and subway stations. The concerts may be one-off performances, tours, or a run of performances at a single location. It is particularly challenging to assess and analyze the sector due to these characteristics (Patrik Wikström, 2013, p.53,57).

Wikstrom's book suggest another example from Leyshoon's model to demonstrate that "the music economy comprises a series of sequential operations." Four "musical networks" with "different but overlapping functions, temporalities, and geographies" comprise the model. Creative networks are first. Reproduction, distribution, and consumption networks follow. Music is developed, performed, and



recorded in the creative network. The contract between the artist and the record label is the hub for this system. This industry includes producers, performers, musicians, studio musicians, sound engineers, songwriters, attorneys, venues, recording studios, management, and record labels. Being the second most important industry after creation, recording receives disproportionate attention in the reproduction, distribution, and consumption networks. In this article, Leyshon discusses physical space's challenges in the music business. He cares more about how CDs are moved through the "distribution" and "consumption" networks (which include physical marketing, distribution, retail outlets, and consumers) than he does about how music businesses may increase consumers' understanding of a project. (Patrik Wikström, 2013, p.49,50).

(It is worth mentioning that this section has been provided for the Music Business 1 exam (MU-400, Candidatenummer:4805))



Leyshon's model of musical networks. Obtained from Wikström's book "Music in the Cloud" (Patrik Wikström, 2013, p.50).

## 2.7. What is CMO (Collective Management Organization):

CMOs are responsible for monitoring the usage of works to verify that those obligated to pay to do so, providing licenses to customers, and gathering and distributing royalties to their representatives (the copyright holders). Having almost comparable licenses for similar users may reduce transaction costs and create economies of scale in rights management. The same data must be evaluated to assess usage, and databases can be expanded relatively cheaply.

In order to fully capitalize on the potential for reducing transaction costs, CMOs are present as legal or natural monopolies in nearly all EU member states. In some jurisdictions, in exchange for the compensation of special admission to a marketplace, CMOs are necessitated to carry out extra tasks in addition to serving the personal benefits of their

memberships. For example, CMOs have been expected to assist state culture policies by cross-subsidizing less popular musical genres or to deliver social benefits through collective bargaining with consumers in the manner of a labor union. CMOs were controlled at the EU level prior to the emergence of digital technologies because of their monopolistic stance. Two essential CMO directive components were agreed upon in the early 1970s and the middle of the 1990s. First, case regulation recognized that CMOs must handle every member reasonably and keep their stipulations to a minimum. Second, as long as doing so did not limit their functionality, CMOs had to grant users licenses. These two are typical competition-based safeguards against the danger of monopolistic actors abusing their position. It is crucial to remember that the domination itself was justified by the system's effectiveness (Schroff & Street, 2018). Furthermore, it is essential to note that this collecting organization may go by different names in other nations. For example, in the United States, it is known as a "Performing Rights Organization (PRO)," essentially the same as a CMO with minor differences in duties.

## **2.8. Superstar economy and technology:**

Alan Krueger mentioned in his book *Rockonomics* a phenomenon known as "The Economics of Superstars," in which a minority of artists become winner-take-all, and one percent of the individuals in a value chain earn nearly seventy percent of the total revenue. Later, he explains how the superstar model is made by expressing that a businessman with an average fortune and average intellect earns significantly less than an exceptionally lucky and intelligent businessman. Because of these factors, fortunate businessmen earn an enormous profit. Bill Gates, Mark Zuckerberg, and Jeff Bezos are great examples of this. Technology, such as the telegraph in the early days and the internet today, is a tremendous aid for these individuals. The technology significantly expands the market, which is essential for a superstar to generate astronomical earnings. Consequently, to have a superstar market, both scope and intellect are required, and without either of these characteristics, one cannot profit from the superstar economy (Krueger, 2019, p74.76).

## **2.9. Digitalization era**

### **2.9.1. What is digitalization?**

To describe **digitalization**, one must first clarify what **digitization** means and what distinguishes these two concepts from one another, as they both have similarities and variances in meaning and can be confusing for individuals.

### **2.9.2. What is digitization?**

According to Jason Bloomberg, digitization comes from the process of turning analog signals into zeroes and ones, thus enabling them access to the "digital world," since computers can store and manipulate these binary codes. Additionally, digitization is the conversion of any analog format to a digital one. The transformation of handwritten or machine-typed text into digital form and the transformation of music from an LP or video tape into digital codes, and the subsequent storage of the music in the computer as a file format are simple examples of digitization.

It is important to note that the information converted and digitalized is simply coded and not processed. Digitalization plays a role in this transformation (Bloomberg, 2018).

### **2.9.3. Digitalization:**

According to Bloomberg, unlike digitization, digitalization does not have a single, distinct definition. The term "digitalization" refers to using digital technologies to change a company model and produce new prospects for value and revenue. According to this view, "digitalization" refers to how a business operates rather than its actual business strategy. It is the process of transforming corporate operations via the use of digital technologies and information. As enterprises adopt "digital technologies," which in this context refers to computers and other information technology, people's roles change. To fully understand what digitalization entails, consider the manufacturing employees who have abandoned their hammers and lathes in favor of computer-controlled machinery. The story of digitalization includes automation extensively. It can involve changing job positions or business procedures (Bloomberg, 2018).

#### **2.9.4. The Internet, Napster, and Peer-to-Peer:**

In his book, Gervais stresses that from the 17th century until the 1990s, copyright received significant attention from both legal and illicit professions, including producers and distributors of copied cassettes, broadcasters, cable companies, and distributors. Nevertheless, these mediators frequently lacked enthusiasm for the material itself (for instance, they could have sold food and shoes rather than books or music). Many things have changed drastically since the internet was created. The introduction of Peer-to-Peer (P2P) software helped the Internet become more popular and more dominant. Napster established a centralized music file-sharing network in violation of existing laws. Although, Napster was easy to find and target for the shutdown because it had some databases on internet servers. After several American courts issued injunctions, Napster was finally shut down. However, this procedure of closing Napster was unable to completely stop illegal file sharing, often known as music piracy. Since 2001, the music business has miscalculated the strength of the demand for this kind of peer-to-peer service. Moreover, these problems were just the beginning of the era of digitalization (Gervais, 2010, p.7).

#### **2.9.5. Streaming:**

After the advent of Napster in 1999, music revenue decreased by more than fifty percent. This decline was caused by digitization and the expansion of digital music piracy and illegal file sharing. Nonetheless, the music industry recovered following the development of streaming services. Music business revenues climbed by two billion dollars between 2015 and 2017, erasing the previous decade's declines and boosting the industry. The introduction of streaming services has drastically altered the music industry. Streaming services platforms such as Spotify, Amazon, Apple Music, Deezer, Tidal, Google Play, QQ, Internet Radio, and YouTube Music rapidly shifted the music industry from a market based on ownership to one based on leasing services. In addition, streaming services have increased the overall amount of time individuals spend listening to music and helped reduce global music piracy due to an open buffet of comprehensive archives and affordable subscription models.

Moreover, streaming and physical sales are not comparable. Physical sales confer ownership, are durable and tangible, and allow the owner to listen to a recording an endless number of times. Streaming is analogous to leasing a car rather than purchasing it. As long as listeners pay the monthly subscription, they can access a vast

catalog and buy items from anywhere. Like a car lessee, a consumer may not care about the vehicle as much as an absolute owner. A streaming subscription is like having access to an entire fleet of vehicles, in contrast to the ownership of a CD, which restricts its owner to just one car at a time. (Gervais, 2010, p.186-190).

#### **2.9.6. Pro-Rata vs User-Centric Model:**

The distribution of profits between record publishers and musicians, as well as among musicians, is a contentious issue in the music industry. Whether the current pro-rata approach or the proposed user-centric model for income distribution is more equitable is a contentious issue. In summary, the user-centric approach distributes revenue based on each subscriber's plays, whereas the pro-rata model distributes revenue based on the total number of plays. Due to its emphasis on the number of performances produced, the pro-rata method has been criticized for promoting a superstar economy. This debate has been sparked in part by the contradiction that, despite the fact that the record music industry is growing again in Norway as a result of streaming services, the proportion of Norwegian repertoire has decreased from 25% to 10-12% (Hendrik Storstein Spilker, 2019, p.155).

#### **2.9.7. Digital licensing:**

With physical products, a record label uses its own sound recording copyright. It obtains permission from the appropriate music publisher or publishers to use the associated song copyright, typically through a collective licensing arrangement. The CD is then provided "rights ready" to the reseller.

However, with a few notable exceptions, download retailers and streaming services in the digital space require separate license agreements with music publishers, record labels, and/or their respective CMOs. Labels typically direct license everything except internet radio, while in some regions, the CMO may also directly license personalized radio services (especially the US, where a compulsory license applies). Most digital services are licensed collectively by publishers; however, large publishers now occasionally directly license Anglo-American repertoire, albeit through joint venture vehicles with CMOs. Downloads and streaming complicate things because they use both the copyright's performing rights and reproduction rights (Cooke, 2015).

### **2.9.8. Digital disruption:**

As with the example of cars in the “streaming section,” there is an issue with having a wide range of vehicles to choose from for a lessee rather than just having one car. The driver may have difficulties deciding which car they want to drive. The same issues might occur with current digitization systems as the range of choices expands and selecting music becomes more challenging for the consumer. The American psychologist Barry Schwartz called this phenomenon "The Paradox of Choice." When the range of choices increases, this issue can be a barrier. This phenomenon brings up another problem by itself. Although scarcity is eliminated by digitalization and many choices become available for listeners when using streaming systems, getting the consumer's attention becomes essential. When there are numerous options to choose from, it can be difficult to make the right decision. This can also be the case when it comes to selecting music. In this case, having guidance becomes vital to help a person choose the right product.

On the other hand, having guidance to help select the music often has a negative impact, mainly when defining the term gatekeeping. It's important to recognize that gatekeeping can also have a positive impact on marketing and promotion. It often works to influence tastemakers and early adopters to invest in an artist, song, album, or even a music subgenre (Nordgård, 2018, p.40).

According to Nordgård, to describe the digital shifts that have occurred in the music industries, disruptive technology theories are models that are widely used and applied. According to these theories, technological progress can lead to innovations that change the market dynamics. These technological advances resulted in new attributes such as portability and/or price reductions but also in a decrease in the performance of certain features deemed essential by core customers (or customers deemed most valuable by the companies) and thus abandoned by the incumbent or established companies. According to Nordgård, who elaborates on this topic by using an example from Bower and Christensen, new technologies typically perform significantly worse on one or two dimensions that are generally relevant to an existing customer base, even though new technologies impart unique characteristics to a product.

Changes in media storage, such as the advent of CDs and DAT tapes in the mid-1980s and, subsequently, Mini-Discs, CD burners, and MP3 files, exemplify the rapid development of technology in this area. The recorded music business has been using digital formats for decades, long before the appearance of Napster and Spotify.

Unauthorized duplication was concerned with these early digital formats well before Napster emerged in 1999 and completely altered the industry. Evolving technological innovation has historically created economic challenges and risks for the music industry, yet the business structures of the recorded music industry were not significantly disrupted until the internet allowed for an explosion in size and volume (Norgård, 2018, p.41).

### **2.9.9. Digital Markets Act (DMA):**

After digitalization and the digital disruptions, as well as the damage digital firms caused the culture economy, it was time for some amendments to the laws that primarily regulate big corporations. These new rules aimed to bring a degree of equilibrium to the economy with the goal of creating a more level playing field between large and small businesses.

The Digital Markets Act aims to give all digital firms, regardless of scope, an equal opportunity to work in a healthy environment. The European Commission proposed the Digital Markets Act on December 15, 2020, as a regulation to ensure a fair and competitive digital market. This strategy seeks to solve issues relating to gatekeepers who control a significant portion of the network in the digital economy. Large web platforms predominate among these gatekeepers (Cabral et al., 2021).

### **2.9.10. Who are gatekeepers:**

As stated previously, digitalization has led to a rise in the cultural sectors, whether through film, music, television broadcasting, or other entertainment platforms. Additionally, some persons and organizations oversee the process of deciding which artistic creations should be turned into marketable products and which products should not; these individuals significantly influence selecting what products ultimately find a market. These people, organizations, and big online platforms are so-called “Gatekeepers” (Foster et al., 2011, p.248).

### **2.9.11. Obligations to gatekeepers:**

Following the EU platform to business rules is the DMA's purpose. These rules regarding business environment transparency on Internet platforms remain in place. The DMA created a standard to identify those significant gatekeeper companies to guarantee which platforms this rule covers. Companies with over 10,000 active business users per

year or more than 45 million active monthly users are subject to these laws. For instance, the main targets are big tech firms like Google, Apple, Amazon, Microsoft, and Meta. However, some of the powerful Chinese platforms are exempt from this rule because they do not have enough market share in the EU.

In the classic three-step competition policy procedure, the first stage is defining the relevant market (determining which companies compete in a market). The second phase is to evaluate the market strength of the firms, and the third step, if required, is to develop appropriate remedies. Given the difficulty of constructing genuine digital markets, the DMA opted for a one-step technique that skips the first stages by applying absolute size requirements and almost automating the enforcement of commitments. Article 3(6) of the DMA authorizes the designation of a gatekeeper based on several qualitative factors, including entrance barriers caused by network impacts and database benefits. (Cabral et al., 2021).

Lastly, this paper stops elaborating on this subject. There are many more subjects to cover about “DMA” and the following topic, “DSA,” which are not this paper’s main subjects.

#### **2.9.12. Digital Services Act (DSA):**

After numerous obstacles and lengthy debates, the Digital Services Act (DSA) was approved on October 19, 2022. This legislation aims to improve the rules and regulations governing online services, one of the most vital aspects of the European Union.

The scope of this rule is confined to intermediate services, despite the fact that it may appear to apply to all digital services. To be more specific, intermediary services are digital services that involve caching, hosting, and the transmission and storage of user-generated content. The significance of these digital services cannot be underestimated not only from an economic standpoint but also from a cultural, social, and political one. The social media platforms Twitter, Facebook, and Instagram, as well as video hosting sites like YouTube, have played a crucial part in the aforementioned topics. They play a role in revolts against autocratic regimes (the Arab Spring), US presidential elections, the struggle against COVID-19, and public relations relating to the Russian-Ukrainian conflict (Wilman, 2022).

**Final note:** The subjects DMA and DSA were the topic for the MU-401 Exam, and in the exam paper, there is more elaboration regarding these two topics. As the



exam paper suggests, these two acts have two primary goals: 1) to create a safer digital space where the basic rights of all users of online services are protected, thereby fostering innovation, expansion, and competitiveness in the European Single Market and beyond; 2) to equalize the playing field in order to promote advancement, progress, and profitability across the globe (Esmaeili, 2022).

## **2.10. Internet as World Wide Web:**

The popularity of the internet in the 1990s and 2000s made it possible for many individuals to use technology. The result was the digitization of cultural production: the World Wide Web and the Internet link information technology and personal liberty, independence, and decentralization. The academic and countercultural computing cultures that gave rise to the internet and web attracted many people who were thoughtful enough to want to share their accounts of the exciting discoveries they believed they had a hand in (Hesmondhalgh, 2013, p 313).

### **2.10.1 Web 1.0:**

In the early days of the internet, a small group of authors created websites for a large readership. As a result, people may receive information by going directly to the source. The World Wide Web, often known as Web 1.0, is a collection of online-viewable hypertext pages. Web 1.0, often known as the "read-only web" in Berners-opinion, is the original web implementation. In other words, the early web made searching for and reading information possible. User participation and content creation were meager. However, building an online presence and making their content available to anybody at any time was precisely what most website owners desired (Naik & Shivalingaiah, 2008).

### **2.10.2. Web 2.0:**

Web 2.0 is an online platform connecting any connected devices by serving as a bridge. These programs provide services and software to improve and provide users with a better experience. Each user can give their own data, and these services enable them to combine their data with other users to build networks and facilitate engagement. Early adopters of this concept were blogs, which later saw increased use from video file-sharing websites like YouTube and Wikipedia, an online encyclopedia. Due to its

flexibility, it offers people the chance to freely share information, content, and ideas with one another, and Web 2.0 has a lot to offer. Web 2.0 quickly became a household term as businesses worldwide sought to capitalize on this phenomenon for marketing objectives. For instance, some contend that Web 2.0 facilitates a significantly more intense version of Toffler's "presumption," one that typically gives consumers more power and is characterized by the end of the economy of scarcity and the start of the economy of abundance (Hesmondhalgh, 2013, p.317). Web 2.0 is known as "Read-Write," meaning users on the internet have the capability to write their own content, upload pictures on social media, upload videos on platforms such as YouTube, or comment on each other's posts on social media. These features are the main characteristics of Web 2.0.

### **2.11. Web 3.0:**

Web 3.0 is still part of the Internet section, but since the subject of the thesis is based on Web 3.0 and its subdivisions, the Web 3 section is excluded from the Internet part and has a separate area.

If we examine WEB1, 2, and 3, we may determine that Web 1 was based on Read-Only. Web 2.0 is based on Read-Write because user interactions occur on Web 2.0, where practically all social media resides. Web 3.0 has something unique to offer because it is based on Read-Write-Own, which did not exist on the internet during the Web 2.0 period.

Blockchain is the foundation of Web 3.0, which is a decentralized network of servers, peer-to-peer nodes, or both. These applications are known as Decentralized apps (DApps), frequently found in the Web 3.0 system (Ejeke, 2022, p.24).

Because data in Web 3.0 has a distributed storage structure, there will not be a single point of administration, significantly reducing the cost of providing data management services. So, the subsequent development trend is to build a Web 3.0-based platform for the digital economy. Web 3.0 gives websites the freedom to develop self-learning capabilities. Using blockchain distributed storage technology also makes creating a decentralized autonomous network possible. Users can post information, conduct business, and do other tasks without a centralized platform. They administer their digital assets, data, and identities using Decentralized Autonomous Organization (DAO). This is accomplished using the hardware for distributed blockchain storage and extended reality (XR) technologies, which together form the technical backbone of Web 3.0. Because of this, Web 3.0 may provide unified consensus data valorization services as well as decentralized services for the digital

economy, which is advantageous for the ecology of development of the digital economy (Chen et al., 2022, p.234).

### **2.12. Web 3.0 and the connection to the new generation (GEN Z):**

If one looks at Web 3.0 and its features and effects, one could argue that Web 3.0 has the most significant impact on youth. Younger people in their teenage years of life, currently between 11 to 26 years old (Generation Z), are the people who have lived in the digitalization era, and digital devices had a significant impact on their lives. From video-sharing platforms, streaming services, online games, and social media, this generation feels comfortable and confident using these technological advances, unlike the older generations who think these technologies have made a gap in people's relationships. According to research by Razorfish (2022), it has been debated that "52% of Gen Z Gamers feel more like themselves in the Metaverse than in Real Life". This research reveals that 45% of gamers feel the Metaverse allows them to explore their identities. One says, "My identity in a game is a truer portrayal of who I am." 40% of respondents say it gives them more confidence. According to 77% of Gen Z gamers, the primary reason for gaming is to relieve stress and anxiety. Gen Z approaches the Metaverse with practicality; 33% want to utilize it to enhance their careers, and 47% want to meet new people. However, less so than in previous generations, data privacy remains a concern for Gen Z gamers - 63% of Gen Z are concerned about data privacy in video games and the Metaverse (Razorfish, 2022).

### **2.13. What is Blockchain:**

Satoshi Nakamoto introduced today's blockchain technology, the initial mathematical underpinning of Bitcoin and cryptocurrencies. Not only is blockchain technology the backbone of all cryptocurrencies, it also has opened many new opportunities for smart contract applications. Specifically, Nakamoto solved the difficulties of creating a distributed storage system where the timestamps are recorded, and no one can modify the data or timestamps without being noticed by other parties. This was made possible by blockchain technology. By providing a digital signature for a document, a signatory may be linked to that document in a way that can be independently verified. With a genuine digital signature, you may be certain that the record has not been tampered with and that the signer is meant to sign it. The document's entity must be trusted in order to rely on the timestamp, something the digital signature does not ensure. Time is of significance in financial transactions and other

forms of legal contracts; thus, the sequence of financial transactions has to be verified independently (Pierro, 2017).

To be more precise, when two network members (nodes) conduct a transaction, they notify all other network members (nodes) of the trade. The nodes then record the transaction in a block containing only a certain number of transactions. When a block is complete, all nodes simultaneously do Proof-of-Work (PoW). These are challenging arithmetic problems with easy-to-verify accurate solutions. Even though these mathematical processes have nothing to do with Bitcoin transactions, they are fundamental for the system to function because they necessitate the authenticating nodes to utilize processing power that would otherwise be wasted if they included incorrect or fraudulent transactions. The answer to a Proof-of-Work problem and the transaction block is transmitted to all other nodes by the first node to solve it. The authenticity of solutions and transactions may be checked by nodes quickly and cheaply. As soon as a block receives approval from at least 51% of the network's processing power, nodes begin appending new transactions to it, which are then appended to all of the blocks that came before it. Verifying that a block's Proof-of-Work is correct is significantly less expensive than solving it. This makes determining who owns the currency inexpensive and lucrative. Blockchain technology functions as a verification technology. Since resolving the Proof-of-Work is exceptionally more costly than validating its precision, nodes can only earn money by being trustworthy which leads to a flawless record that no member of the network can contest (Ammous, 2016).

### **2.13.1. Blockchain features:**

According to Chen et al. (2022), some characteristics of the blockchain include Distributed Ledger, a peer-to-peer network operating beneath a database without the need for any central authorities to ensure data consistency. Cryptography is the second feature of a blockchain, which is particularly important since it ensures data consistency and protects user privacy and transaction information. Another aspect that provides the distributed ledger is always accurate is the consensus mechanism, which requires the blockchain to concur on the transactional history for each block. A significant issue is how to employ a rule to ensure each node keeps its data constant. Finding a method for universal agreement is the answer to this issue, which is Smart Contract.

### **2.13.2. Smart contract**

The last and essential characteristic of blockchain is called a smart contract. Smart contracts are digital scripts that operate on the blockchain that define the behavior of applications in a distributed environment by exchanging and sharing information.

In most cases, their behavior mimics that of a digital method that must follow specific guidelines. Every node in the network has a copy of the code that defines these rules. Smart contracts built on the blockchain make it possible to construct malicious protocols. As a result, a blockchain-based contract may be used between parties who do not know or trust one another, even though they are both bound by the terms of the contract.

Additionally, the elimination of mediators through the use of smart contracts significantly reduces operational costs. Smart contracts are autonomous and independent of any one entity or group. For instance, when specific criteria are settled, they often carry out the activities outlined in the smart contract automatically, requiring no action from the parties who signed the contract. Moreover, they conceal the complex behavior of each node in the blockchain network and make the data at the foundation of the blockchain programmable. This significantly impacts blockchain since it makes constructing apps on top of blockchain technology simple. However, smart contracts still have security issues when utilized with unreliable systems and when the government is not monitoring them (Chen et al., 2022, p.236).

### **2.14. Non-Fungible Tokens (NFT)**

Regarding the origins of NFT, there is some disagreement about who was the first to profit from it. Some claim that Colored Coins was the first investor in this phenomenon, while others assert that Kevin McCoy from Quantum is the valid NFT owner. However, the idea of who came first is less significant. What matters, for now, is that the first generally acknowledged use of NFT was launched in 2017 by Ethereum under the name "CryptoKitties" (Hennekes, 2021).

Understanding NFT, or Non-Fungible Tokens, requires understanding why people accumulate various items. In his book, Matt Fortnow emphasizes how people have a tendency to collect a wide range of things in the actual world, including sneakers, civil war relics, stamps, etc. Therefore, it should be no surprise that there is a market for collectibles, even in the digital sphere. To understand the term Non-Fungible Token, one should break this up into pieces and dissect it part by part.

To answer the question of what Non-Fungible means, we need to clarify what fungible means in the first place. Fungible is an adjective that indicates the exclusivity of existence in such environment or kind as to be freely transferrable or replaceable in a completed shape or fragment. For example, a dollar is fungible; one dollar's value is always the same as another dollar. In a digital world, cryptocurrencies are fungible since a Bitcoin has its own value and one's Bitcoin has the value of another Bitcoin, regardless of the up and down streams. That being said, Non-Fungible, on the other hand, cannot be freely exchanged or replaced by similar goods. Diamonds are non-fungible since they differ in size, weight, clarity, cut, or color. You cannot trade a diamond for another diamond. Like Diamonds, NFTs are Non-Fungible.

Also, NFTs are typically recognized as a particular category of digital collectibles, like digital artwork from Beeple. The term "non-fungible" refers to distinct, authenticated, and secured assets by the blockchain system, which gives proof of ownership, origin, scarcity, and uniqueness (Fortnow, 2021, p.22-26). NFT can also include collectibles, digital artwork, event tickets, game items, domain names, and the ownership of a musical track for a tangible object. In addition to the term Non-Fungible, now there is time to define the term "Token." Dictionary.com defines tokens as a "souvenir, memento, keepsake" (Fortnow, 2021, p.22).

Is it not simple to obtain, share, and copy digital photos from the internet, one could wonder? Aren't NFTs, like digital assets or simple images, able to replicate with a single click? The answer is yes, and it is simple. However, one must mint a cryptocurrency or an NFT to produce it. Digital coin minting is precisely the same as physical coin minting. A cryptocurrency usually has a circulating supply as well as a maximum supply. The quantity of coins or tokens in circulation is known as the circulating supply, while the ultimate collection is the maximum number of coins that can be produced. The cryptocurrency's creation algorithm contains an unchangeable limit on the number of coins produced. "In contrast, a fiat currency, such as the US dollar, has an infinite supply since more dollars may be created. If demand for dollars remains constant, each dollar's value decreases as more dollars are printed. As a result, there is no limit to the number of dollars or other fiat currencies that can be created. Bitcoin has a maximum quantity of 21 million coins, but Uniswap (UNI) has a maximum supply of 1 billion tokens. Each NFT functions similarly to a cryptocurrency, except there can only be one. This distinguishes NFTs and renders them non-fungible; they cannot be traded for something else because nothing else of the same sort exists. Consider an NFT to be a one-of-a-kind piece of art. A painting can have prints or duplicates, but there can only be one original" (Fortnow, 2021, p 26).

## 2.15. Types of NFTs

Fortnow, in his book, highlights that NFTs can contain various forms, although, in this paper, only the central structures of the NFTs will elaborate on.

**2.15.1. Digital arts and collectibles:** Digital arts are a kind of contemporary art, but they were lived before the NFT era. The origin of digital arts goes back to the 1950s. When computers appeared in the 1800s and 1990s, the medium boomed. The artists started to create their own digital art with digital tools, like computers, tablets, and smartphones, but the nature of digital art is the medium itself. Although these types of digital art can be printed out, the nature of this phenomenon is to remain in the digital format. Digital collectibles are not excluded from digital arts; they are created in the digital world with the intention of remaining in the digital form. Digital Arts on the NFT can be in several states: Images, Videos, Gifs, Audio, and 3D Model.

**2.15.2. Images:** Every type of photo shoot, whether it was taken digitally or scanned and subsequently converted into a digital file, can be considered an image. Pictures may be original works, art, or a combination of both, as we have previously discussed. There is no motion in a still photograph. Furthermore, with NFTs, there are no restrictions on the image's size or resolution. However, some NFT marketplaces may impose size restrictions on the files that can be mined. Typically, you would want to give high-resolution photographs so they can be viewed on larger displays.

**2.15.3. Videos:** Videos are not just comprised of genuine video material but are also increasingly used to create digital art. For instance, the Rob Gronkowski trading cards contain videos in addition to still images. They have an incredibly great aesthetic design. The cards not only have Rob Gronkowski's artwork on the front, but you can also "flip" them over to reveal extra details on the back, including the edition number and some of the football player's stats. Although the majority of video formats do not loop by default, websites like OpenSea will take care of it for you. As a result, it is common practice to align the last and first frames of a video to create a seamless loop. One of the Sean Mendes NFTs, for instance, includes a statue of Sean that rotates and has the appearance of a cartoon character. In some cases, a video's end frame and initial frame do not line up, causing the image to flash back to the beginning. When creating

films or GIFs (which we will discuss next), it is preferable to have a smooth loop because this can be unsettling.

**2.15.4. Gifs:** A.gif is a file format that is commonly used to create short, simple films that play on their own (or loop). GIF, or Graphic Interchange Format, is a method for sending and receiving still pictures. Gifs were designed initially for still images, but since several photos can be stored in a single GIF file, they are ideal for short films or animations. Animated GIFs are a term occasionally used to describe GIFs that include video or animation.

**2.15.5. 3D Model:** A three-dimensional model from an object, video game, movie, architecture, etc., is another item that can be made for buying and selling NFTs in the marketplace.

**2.15.6. Books and text:** Although there are not many text-style items like books, poems, and short stories on the marketplace, these kinds of items can be bought or sold in NFT forms.

**2.15.7. Game items:** In the world of gaming, there are approximately 2.8 billion gamers around the world, which is significant when compared to the world population. There are many games that support in-game items, and people can buy those items like weapons, armor, skins, costumes, and other things and customize them for each player. A player can buy an item with real money very quickly instead of playing for hours and searching for a rare item drop in the game; These items now can be as part of NFTs.

**2.15.8. Audio/Music:** Like any other digital format, audio files can be converted into NFTs. Kings of Leon was the first band to release a successful album via NFT, generating over \$2 million in royalties. Also, independent artists invest in audio NFTs. The notion of NFTs may be seen as an additional benefit for reaching new audiences beyond the conventional way. Several music distribution sites, such as OpensSea, demand artists to offer an image accompaniment for their tunes. This image might be the album cover, a photograph, or a GIF—more elaboration about this topic in the findings chapter.



**2.15.9. Event tickets:** As many people have experienced with concert events, there have been physical tickets that permit entrance. After digitalization, Digital ticket usage has increased in parallel to physical ones. Moreover, some people may desire to resell their seats since they are unable to attend the event. Scalpers are those who acquire large quantities of tickets only intending to artificially induce scarcity so that they may resell them for a benefit. On the NFT side, because the legitimacy of an NFT is validated by the blockchain, there is no need for a centralized entity to verify the validity of the tickets. In addition, the NFT might be set up such that a certain percentage of any profits made from reselling is remitted back to the original ticketing agency (Fortnow, 2021, p 29-45).

Lastly, to close up the argument regarding NFT, we take a look at some of the terms for this innovation.

## **2.16. NFT TERMS:**

- **Burn:** Burning an NFT is a particular method of eradicating it. Although non-fungible tokens are immutable on the blockchain, they may be permanently withdrawn from circulation by being delivered to an unusable wallet address.

- **Floor price:** The minimum NFT price in a set is referred to as the floor price. By "buying the floor" or "sweeping the floor," the least priced NFT available is purchased.

- **Floor sweep:** Collecting all of the cheapest NFTs in a set is equivalent to cleaning the floor. The community around an NFT collection may host raffles to raise the project's basic fee.

- **Fractional ownership:** Claim to a portion of an NFT, as in "fractional ownership." Dealers may establish their own rates for a portion of the artwork, and buyers can pay as much as they choose.

- **Gas Fee (Transaction Fee):** A blockchain network requires customers to pay a fee known as "gas" to cover the cost of the computing power necessary to execute a transaction. Gas fees prevent malicious actors from overwhelming the system with fraudulent transactions and ensure that every transaction is legal.

- **Generative art:** The purpose of generative art is to build NFTs from such a limited resource pool. Each NFT in a collection of generative art may have a distinct set of qualities as well as shared traits with the other NFTs in the collection.

- **Metadata:** Metadata is the collection of data that describes the property and differentiates one NFT from another. On the main chain or off the main chain, metadata may exist.

- **Minting:** Prior to adding a new NFT to the blockchain, the "minting" process must take place. Once an asset is put into the blockchain, a token representing that item is "minted," and that token cannot be altered (Ghelani, 2022).

- **One of a kind:** rare since there is just one.

- **Drop:** to snuff out.

- **Genesis drop:** A musician's first NFT is comparable to a genesis drop.

- **Market place:** An area where users may explore and buy NFTs is referred to as a "marketplace." This requires the transfer of NFT from the market. They are placed in their digital wallet.

- **Airdrop:** You are not required to accept an airdrop of more tokens or other tokens if you currently own a token. Accept or reject just yes or no responses.

- **Utility:** A backstage pass to a show is an example of a valuable item located outside the frame.

### 3. Methodology

#### 3.1. Research design:

A scholar should choose a research technique to view the study and collect the best quality material with a technique that can significantly influence a study's findings. A researcher might choose three different kinds of study: qualitative, quantitative, or mixed technique. As computer technology has enhanced our data processing and ability to assess complex models, and as people have outlined new methods for conducting social science research, the choices available to researchers have expanded over time (Creswell & Creswell, 2018, p.49).

#### 3.2. The selected research method:

The chosen research method for this thesis is a qualitative research method since this era is entirely contemporary, and few people have the proper scope to elaborate regarding this topic. On the contrary, the quantitative method can be suitable for investigating and comparing two or more groups, correlating the statistics, and calculating between variables. Structured equation modeling, hierarchical linear modeling, and logistic regression are examples of how these designs have been developed to accommodate increasingly intricate interactions between variables (Creswell & Creswell, 2018, p.49).

In the quantitative research method, the researcher puts a theory to the assessment by developing specific hypotheses and gathering data to support or disprove those ideas. In an exercise, attitudes are calculated both before and after experimental treatment. Data on attitudes are collected using a uniform poll instrument and analyzed using statistical techniques and hypothesis testing (Creswell & Creswell, 2018, p.54). Due to these statements, one may argue that this research method is unsuitable for such research.

On the other hand, with the qualitative method, a researcher can examine multiple data sources, potentially revealing the answers. The researcher can collect some data within the field of study by having some participants who are experiencing the issue and challenges or have done some study and have already found a solution. In this phase, the researcher might invite the participant into a face-to-face or online meeting where one can gather information by interviewing the informants. Several approaches can do this type of research. The first approach is called **Narrative research**, in which the researcher gathers the information by studying the informants' experiences by asking individual questions. The informants provide a

story about their lives or experience directly to the researcher and the data gathered through the narratives. The second type is called **Phenomenological research**, in which the researcher describes the already lived experience of the individuals regarding a phenomenon as the participants describe. The third sociological method, known as "**grounded theory**," starts with the perspectives of those involved in an investigation and builds a more comprehensive theoretical framework. This data collection method follows in compound phases, and various data types are refined and related. The fourth method is **ethnography**, in which researchers examine cultural groups' language, behavior, and action patterns in their natural environments over time. This information is gathered through observation and interviews. **Case studies** are the last approach used to comprehensively comprehend a particular phenomenon (such as a program, event, activity, process, or individual) by researchers in various disciplines, particularly assessment. Researchers devote a substantial amount of time to accumulating detailed data from various sources on specific cases with time and activity constraints (Creswell & Creswell, 2018, p.50.51).

Reading articles, observing actions, and performing conversations are standard methods used by qualitative researchers to gather their data. Although researchers can use a procedure as an instrument to record data, it is ultimately their responsibility to gather and evaluate the data. The researcher hardly relies on the questionnaires or any other tools by other researchers (Creswell & Creswell, 2018, p.257).

### **3.3. Other types of data collection:**

Instead of depending on a single data source, qualitative scholars gather various kinds of data, such as talks, notes, documents, and video footage. These are instances of free-form statistics in which the limits of any specific measure or instrument do not constrain the authors' ideas. Experts then evaluate the data to spot patterns and trends before organizing it into consistent themes and symbols. Qualitative researchers frequently employ inductive methods to construct patterns, categories, and topics by progressively abstracting data. This iterative process between the themes and the database illustrates inductive reasoning that continues until a comprehensive collection of themes is formed. The researchers then apply rational thinking to investigate the data from the themes and determine whether additional evidence can be discovered to support each theme or if more data gathering is needed. The analysis is carried out in two stages: instinctive reasoning and deductive logic (Creswell & Creswell, 2018, p.258).

*“In deductive logic, the premises of a valid deductive argument logically entail the conclusion, whereas logical entailment means that every logically possible state of affairs that makes the premises true must also make the conclusion true”* (Hofseth, 2023).

#### **3.4. Process:**

To have an excellent overview through the interviews with informants, one may have a strategy to have a smooth and exciting procedure. An exemplary protocol of interview may be used for this type of research. Creswell (2018) has mentioned in their books that a good interview must have a protocol of one or two pages in length, and a total question number of five to ten questions maximum, although there is no precise standard number of questions. On top of it, one may have the questions ready in advance to have a better flow and also prepare the interviewer for any types of surprises and other challenges (Creswell & Creswell, 2018, p.266).

The process for this interview started with the aim of following the exact academic descriptions mentioned above with a semi-structured form of questions, which starts from some general questions regarding Web 3.0 and redirects the respondents to answer more specific questions after one or two questions. There are also more specific questions for informants with more expertise in some of the technical parts of the Web 3.0 innovations. These questions were exclusively asked to those people and were not mentioned to other informants. The interviews were done in one-hour digital Zoom meeting sessions and recorded within the application in video and audio form.

#### **3.5. Data analysis:**

After the interviews, the audio and video must be converted to text form to have a written-ready format and used as data. One may transcribe the audio into text by copying and writing the file. However, technological innovations have helped us here. One can use transcribing software applications that assist researchers in analyzing audio and converting it to text format. Since the language of the interviews was English, and the transcribing software easily supports English as the primary language, the transcribing part was not as time-consuming as it was before these types of AI tools were invented. However, these AI tools do not do all the work, and the system has many errors and mistranslations. Still, it needs the researcher to go through the interview, correct the errors, and proofread the text, which occurred many times in the analysis process of this thesis. One may check both audio and text simultaneously in order to fix the problem and keep the flow of the interview. Lastly, text

files must be edited once more to utilize the data. In this stage, one should clear the text from the repetitive words, delete the fillers and hesitations in the speech, and keep the conversation and sentences smooth and clean, which is time-consuming and requires lots of effort and focus. Afterward, the researcher can separate the sections or chunks of the text he thinks to address the issue and use it as a direct response to the inquiries. Some parts of the interview may be unused depending on the relation to the topic.

Regarding the Desk research study in which the researcher gains knowledge from books, articles, websites, etc., the researcher is responsible for finding credible books and online articles to bring a legit context to the research since credibility plays a crucial role in such research. Online libraries, such as Google Scholar, JSTOR, and DOAJ, can be suitable sources for finding credible articles. Since the topic of this thesis can be listed as a contemporary subject, a large amount of online research through these libraries has been done to gain the most updated information.

### **3.6. Choosing of informants:**

When choosing informants for the interview, it is crucial to find people with knowledge of the subject of the study, especially when trying to work on a new subject; the scope for the people in the target study would become even smaller. In this case, finding people with the knowledge becomes much more challenging. Since this study concerns technology and Web 3.0, and it was not about Web 3.0 in general, but within the music industry, the scope becomes even smaller. Because not only does one need people within the music industry, one also should find people who are fluent with the new technologies. Since finding people willing to participate in this research was challenging, I decided to have at least one interview with someone entirely familiar with Web 3.0 without necessarily knowing anything about music. In this case, one may have a clear perspective about technology without having any view of the music industry and make their mindset opaque. Unfortunately, the person I planned to discuss this topic with declined to talk about this topic due to their busy time schedules.

There were several factors in finding suitable informants for this thesis:

- The informants should have a clear understanding of the music industry (In my case, except for the last participant who declined to have the interview)
- Having experience in at least one of the Web 3.0 domains.
- Informants are concerned about the artist's side, not only the business.

### **3.7. Informants:**

**NIC GARNETT:** Nic, a specialist in right administration and copyright, is highly esteemed throughout the industry. He has worked as a business consultant in the digital media industry in Silicon Valley for the past decade and is a certified barrister in the United Kingdom and France. There, he advised a variety of businesses on rights management strategy. InterTrust, AOL, Trident Capital, Virtual Venue Networks, Urfilez, and the International Federation of the Phonographic Industry (IFPI) are among the companies that have been his clients in the past. He is currently working as a principal consultant at Interight company.

**VICKIE NAUMAN:** Nauman works in mergers and acquisitions (M&A) to provide insights and close blind spots, assists with the strategic development of a product or service, and coaches fledgling businesses on achieving sustainable growth. She also works in the music industry counseling large companies on new music projects. She worked on digital technology and music and gaming, startups, finance, and other sections, with much hands-on experience in music licensing with the first legal digital services (MusicNet). She is the CEO and Strategic advisor at the Cross Borders advisory firm.

**JAKOB WREDSTRØM:** Jakob is an entrepreneur in the music industry in Norway and the founder of multiple startup companies in Stavanger. He has a passion for music as he gained a bachelor's and master's degree in music production. He is currently focusing on his company which is called Capella Entertainment. Another company he runs is Mintix, a ticket sale platform that works with many artists, and the tickets are sold in an NFT form.

### **3.8. Limitation:**

Every study has advantages and disadvantages; like all other approaches, this study is not an exception.

- Lack of diversity in people with the knowledge for interview.
- Insufficient data for research
- Lack of diversity in previous studies
- Time-consuming
- Very advanced topic in some parts, which causes difficulty with deciphering for the researcher.

Although there might be more documents and articles on the web regarding Web 3.0, when a researcher minimizes the search scope to music and Web 3.0, results are even rarer. The same concepts are confirmed for the people with the knowledge. Finding people with sufficient knowledge to interview to find new and valuable information becomes even more complicated when the research topic is complex and contemporary. Being contemporary brings another issue which is the lack of previous studies. Few studies on the topic challenge the researcher to support and approve his finding with a solid theory.

Furthermore, such research with all these limitations makes the process extremely long. It becomes time-consuming for the researcher to analyze and process the data and interviews to dig for an exciting result. Lastly, such advanced research needs background knowledge of both technology and music since, without background awareness, the topic becomes significantly opaque and hard to digest.



## 4. Findings

### 4.1. The interview:

My **first question** for my attendees was about the NFTs and Blockchain technologies advantages in comparison to the former technology advancements like Web 2.0, mentioning that IT businesses acquired control of many music industries when digitalization became widespread; media corporations were sluggish to adapt and lost power. Streaming services have eliminated physical music content and the scarcity element from the old analog world. Lack of scarcity has impacted the music industry, say many. To your mind: are these NFTs and blockchain technologies practical means and possible lifesavers for parts of the music industry (by putting scarcity back), or do they represent primarily ideological interests?

**Nic** responded, *"I think blockchain has a pretty broad application across many different industries and many different applications."* Then he brought up an example of Silicon Valley, in which some people thought blockchain could fix the slow payment problems for artists. Highlighting that *"having new sets of technology advancements cannot solve all of the issues since the problem is not the technology itself. Still, the music industry wants the system to be slow and confusing, and they do not want to pay artists immediately. This is how the music industry works, and this is how capitalism works."*

For the second part of the question about the ideological interests of the NFTs, Nic has responded that if we go back before NFTs and say let us select an album and keep the very first copy of the record and call it the very first copy and put it in a bank vault. He does not think that people would pay much attention to it. So, it might not be a brilliant idea in terms of ideology.

**Vickie** Has responded to this question by saying that these technologies can fill the hole which is missing in the current streaming economy. She highlighted that *"the way our music business works online right now is you can access music. So, you can stream on TikTok, YouTube, Spotify, and Apple Music, but you cannot really express that you are a fan. And there's a gap there around how to serve the people who are not just casual listeners, letting the music play in the background of their homes. But, for those who want to buy more music for artists and who want to support bands and express it, that's where I think the value really is going to come."*

**Jakob:** He points out that in the traditional approach, fans could spend much on buying expensive tickets for seeing their favorite artists; however, many artists could not see the money since the revenue mostly goes to promoters, managers, and other expenses. So, artists do not have a medium right now to effectively earn higher revenue from their die-hard fans. Nonetheless, Web3.0 and NFTs can open this debate for those people to invest in their favorite artists.

My **second question** covered the phenomenon of the Superstars economy, where moderately small numbers of artists receive massive quantities of wealth and dominate the industry sector they engage with, which is highly crucial in this modern world. Moreover, we have seen that more prominent artists have used NFTs, which has benefitted their careers, at least in recognition and credibility. How can DIY and smaller artists benefit from NFTs?

**Nic** has responded to this question that he does not think that this phenomenon could help smaller artists since the cost of minting and putting NFTs on the platforms is very high, and in return, there is less chance to get profit from selling NFTs if they succeed to sell. So, it is not going to help their career. He also mentioned that we would eventually witness people lose their interest in NFTs, so it is not a long-term proposition.

**Vickie**, on the other hand, believes that this feature can work for all artists, whether small or huge, in terms of popularity; the key concept is to have engagement and royal fans regardless of the fame. And the great thing about Web 3.0 is that artists don't need a million fans on the Web 3.0 platform. Suppose a small artist can invite their small groups of fans into Web 3.0; that does the job. The number of fans is not dictated that all of the fans on Web 2.0 will follow the artist on the Web 3.0 platform. She pinpoints that *“Many people will want to buy scarce goods and engage, in the superstar economy, but it isn't the same as what we know now that the smaller artists who have 50 fans who absolutely love the artist and want to follow a part of a community and have a kind of an interactive fan club with them and the artist is offering them something that, that they can do that nobody else can do; They'll pay for that. And I think a small group of fans can deliver meaningful revenue to a small, emerging artist.”*

She later mentioned an extremely vital point that even many famous artists got wrong. Highlighting only because an artist is highly famous and has many fans on Web 2.0, it is not necessarily true that if the artist puts an NFT for sale, it will be great. She pinpointed an

example of a famous artist who skipped creating a community on Web 3.0 during the pandemic and put NFTs for sale with a physical object. As a result, nobody bought it, which resulted in a huge failure.

**Jacob:** He thinks that Web 3.0 is not going to affect smaller artists, and it is mainly best for major artists and big independents, who have many big companies around them. He pinpoints, *"So just by being signed to a major, you can have some sort of integration to those opportunities. So if, anything is going to favor the major labels more than the independence, I don't really think that it's going to make much of a difference other than the people that are already making some sort of career that they can help increase that revenue, which I also believe is the most important aspect because I work a lot with upcoming artists. Still, in reality, they're not that important."* Furthermore, Jakob had a debate for smaller artists, which was the smaller artists in the smaller cities have more focus and opportunity to expose and grow in comparison to the same artist in a bigger city. He notes that *"you can stay in Stavanger and be one of the 20 people that has focus, or you can move to OSLO and be one of out of 5,000. And I'm not necessarily saying that I can provide a better service than they can do in Oslo, but I can provide you with more focus. You, you will stand out because there are few people. So, I think small and medium-sized artists can utilize the opportunities, expose themselves in a less crowded environment, and there's also new ways of expression."*

The **third question** was regarding the regulations of the innovations in Web 3.0. Some may claim that every invention has numerous advantages and challenges, especially when the invention involves a new era of digital technology, such as Web 3.0, which introduced a new set of regulations. I asked the informants if NFTs are compatible with the current legal copyright framework in the US and Europe.

**Nic** has clarified the ambiguity of the regulations on Web 3.0 by mentioning that these are just marketing tags. Web 3.0 has not fundamentally changed the Internet and the world wide web since it is just a new name and number. We are in the fourth or fifth industrial revolution, and Web 3.0 is a straightforward label people use. If you ask people to describe this phenomenon in detail, you will probably get different explanations. Regarding the framework, he also noted that NFTs are compatible with the current legal framework in both US and Europe since it is based on computer codes, and codes can be protected by copyright. He continued by arguing a significant problem with NFTs *"I think we discussed this in Kristiansand, was the fact that, from the research I've done of all the NFT companies, they*

*are very unclear about their terms and how they relate to copyright law. Basically, when you are dealing with a sound recording, which contains a song, you have at least two things there which are protected by copyright law, sound recording and the song which has been recorded. So, if you mint an NFT concerning that, you have created a link somewhere where a digital file containing that recording and that song is stored; that's all you've done. So, in creating the NFT, you've not touched music; you've just created a secure link to somewhere you alone can find it. Maybe the manager of the system can find it as well. The problem is that what can you do with that link? Can you play music? Can you display the song's lyrics? It's unclear from the business terms of so many of these NFT sites. They all use Silicon Valley language, which I was exposed to living there for ten years where, so it was explained to me if you say enough words, people will never understand what you're talking about, which is the whole intention. Accepting so far as the link is expressed in computer code, which may itself be protected by copyright. There's no real relationship between an NFT and copyright unless the person creating the NFT has the copyright license to grant certain copyright licenses to the person purchasing the NFT. ”*

He elaborated more and came up with an Example of JK Rowling, the creator of Harry Potter, and responded first about how an NFT company could establish a copyright agreement mentioning if JK Rowling said here is my first manuscript of the books. I give an exclusive right to an NFT company and the exclusive rights to create an NFT; the copyright company will have a copyright license; however, in terms of the underlying work, that is a different case. In terms of buying and selling the NFT, “*what does the purchaser of that NFT actually acquire? Can they open the book? Can they display it? Only if she has given them permission to do so. So, it gets very complicated. This is why business terms are so important. This has many more problems because suppose she tells somebody else, I want a backup copy of this manuscript. They get "a backup copy. What's to stop them from creating an NFT of the backup copy? NOTHING.*”

**Vickie:** In some terms, there are lots of issues. The US Copyright Office is studying the impacts of the creative sector of NFTs. One of the themes that came out very clearly in January was whether the user and the end consumer know what they are buying, which they did not. Or other occurrences, like when one buys a visual NFT, they get the commercial rights; as a result, they can make a movie with it, create a T-Shirt, sell them, or create a storyline as long as they have the NFT. However, with Music NFTs, commercial usage is impossible. And there are many things in between, so this is something where the government

should come in, and it requires some mandatory minimum level of disclosure of what people are getting when they buy an object.

The **fourth question** regards the platform compatibilities to users, highlighting that every new technology leap requires an effort to adapt since new systems may have different approaches to utilizing them. Some might be straightforward to understand, and some may be difficult for the average user. To your mind: How user-friendly and accessible are NFTs for the general consumer as of today?

**Jakob:** it depends on who the person is and what age group they are. It is a new way of thinking that would be kind of tricky even for people in their twenties and thirties. But it is easy for young people in their thirteens, fifteens, and eighteens because it is what they already do. And like all new innovative tech we had seen before, there have never been people in our age; there have always been kids who were early adopters. It will be effortless for kids to understand and communicate, but for grown-ups, it will not be easy, and it will take a lot of time for them to get involved. Jakob distinguished an example of Facebook in 2007 when he was a teenager, and everyone in his age had a Facebook page. However, it took almost five years for his parents to open a page on Facebook, and they are still in it, but he is off of it. Later he pinpointed an excellent point *“because the communication has been really tech-heavy; it’s been really like crypto-based, it’s been really by cash grabs, and opportunities and stuff like that. Even though the technology is probably the most optimal for the next generation to adopt, it’s just not been that focus. It’s been FTX kind of people that had the focus with the technology. So, that’s why it’s in a bizarre place right now because everyone hates NFTs and crypto. Still, now it’s actually a place where technology is getting good enough or developed enough that you can actually start practically using it.”*

**Nic:** He believes it is challenging for the general consumer to understand. Many people are driven by greed and see this innovation as a medium to get profit out of it. They think they can buy some art for 60 million and sell it for 120 million. They don’t understand what they are doing at all. Nic elaborates that, in his opinion, governments should step in and say, *“We need some protection for consumers here because they are being ripped off left, right, and center.”* He pointed out the Sam Bankman-Fried case, which occurred recently due to crypto exchange problems demonstrating that people are getting ripped off very severely. (Jakob has mentioned the “FTX kind of people” in the paragraph above, in which he is mentioning the same subject that Nic has brought up with Sam Bankman-Fried.)

**Vickie:** *“It's not user-friendly at all. I mean, it's kind of crazy when you want to do something. You're like, I'm going to buy some crypto, and then I create a meta mask account, and I'll put my crypto and my meta mask account, and then I'll connect my meta mask account to an NFT platform, and then I buy that NFT. But then I close my meta mask account. It's crazy; only people who are really enthusiastic about this world are doing any of this right now. And so, especially with music, there is a mass consumer market. All of that has to get easier. I remember the first Internet 20 years ago, which was similar. It was really hard to create an account to put your credit card in; It was risky. We didn't know if we used our credit card or whether it was secure. None of the accounts could have any help with the password; things went wrong all the time. You ordered things, and things didn't get ordered; it was kind of similar in that we have to now get to the next point, the next level of ease of use, and music consumers, in particular, have gotten accustomed to things like Spotify and Apple Music, that is so easy to use, They're so intuitive. To ask a casual fan to go and do all of these steps in Web 3.0 doesn't make sense. But I think crypto will be around, but it will get regulated, and we can't expect every music consumer to create a wallet by crypto, trade in crypto, and manage where their crypto is held. All of those things, I think we have to have some interoperability of wallets, some interoperability across platforms, and certainly be able to transact in regular currency.”*

I asked Vickie if there is an opportunity to have these steps smoother and easier in the near future or if it's just a fantasy to think someday these approaches would be more straightforward; Vickie replied she does not think it is a fantasy, but since this innovation is so early, it might take some time. Many companies are now trying to build infrastructure; they're building stable platforms to offer better ease of use for consumers. But she mentioned that it would take around three to five years for us to see how this plays out. She made a point that *“in the NFT world, I believe NFTs for music are probably going to evolve slightly differently than NFTs for visual art and other kinds of uses, And I think that NFTs for music are going to end up evolving kind of around fan clubs, like a more modern fan club with maybe there are all sorts of different options of buying and collecting thing, There can also be belonging and access, ticketing, other kinds of things, just community co-creation with the artists. We haven't even seen that beginning, so I think music will separate and evolve slightly differently from the rest of the market. That's when we will start to get the customization of what music fans need to engage and actually do something that is easy as buying a ticket to go to a concert.”*

My **fifth question** touched upon the compatibility of the Web 2.0 and Web 3.0 platforms by asking the informants, to their mind, how they are compatible with NFTs with current streaming services.

**Vickie:** *“I think they’re going to coexist for a really long time, and they’ll probably be separate for a while, but what we always see is when there’s a streaming service that relies on giving people continuous access to music when a new kind of service comes into the market, they often adapt. And this is already happening. I don’t know if you saw the news, but Spotify is introducing a TikTok-like feature, which will be a vertical stream swipe instead of a fixed screen. So, I could imagine streaming services thinking about what if we created some sort of token-based community around the top streamers for an artist. If I were running Spotify or Apple Music, I would be looking at doing things like that. It doesn’t necessarily have to be anything you’re buying or selling, and that’s the other thing about creating precious communities without selling anything.”* She continued by emphasizing that these two worlds of Web 2.0 and Web 3.0 will coexist for a long time, and in some way, we will witness that these two would overlap with each other in the coming years. However, she highlighted an issue that the problem is the amount of time every human has every day, and spending more time on Metaverse and NFTs means there is less time to listen to Music on Spotify.

**Nic** has started answering this question by pinpointing that he has to do more research in this area, and he is unsure. However, he had some critical points about the legal issues with the streaming services that the problem is not with the technology. The problem originates from the lack of willingness to sort out fair dealing. Since people in the business had the technology to develop an excellent solution to make the streaming services work better for artists, people with the power don’t use it. The streaming services don’t want accuracy because they don’t want to pay royalties to the right holders. And record companies don’t want accuracy because they don’t want to pay the performers, composers, and publishers.

The **sixth question** regards the shares between the right holders and other shareholders and the way the pie is divided. I asked the informants if revenue streams from copyright based on NFTs are emerging: How should the pie be divided amongst the stakeholders (rights holders, distributors, investors, software companies, etc.)?

**Nic** responded that the marketplace would decide how the pie would divide since this is the function of the market in a capitalist economy. Sometimes some agreements clarify

composers and publishers gave to receive a minimum revenue, which is very rare. He said he thinks that people who are creating the music, like composers and performers, should be the ones who get the bulk of revenue, but they don't. Publishers and record companies are often taking advantage of these remunerations. Also, the investors are those who stand at the top of the pyramid.

**Vickie** has mentioned the opportunities and issues with Web 3.0 and the limitation, which is highly crucial for artists and fans. She stated, *“When you think about many people in Web 3.0, they're very utopian. These technologies can change and transform anything for good; they can do anything; they have the power to do all these different things well. We've immediately seen this breakdown in smart contracts in that there's a limit. To how many smart contracts you can have associated with a single asset. There's also a limit to calculating all the different shares of something related to an asset. I had another NFT project that fell apart because the NFT and the blockchain we were using had a limit of four smart contracts to be associated with an asset. We had done a deal with a music company with a song we were using with five performers and four writers. So immediately, we've exceeded the limits of what the platform can support. What do we have now? When we think of how you divide the pie, there's usually the platform that gets something. The label usually receives a large share; the publishing gets either equal to the label or less. And that's kind of it. Maybe a performing right also plays in there, but the artist doesn't usually get anything. Users don't get anything. There's not a visual artist. And so, you think now maybe we have four different parties that have everything divided. The whole pie is divided up between all of them: a PRO label publisher and the platform itself. But in a Web 3.0 world, you have those and the artist. And I believe the artist needs a discreet share separate from what they may have with their label or publisher. You also have a visual artist creating some sort of image. There could be another technology partner that is enabling some of this tech. And the end user constantly wants to participate in everything. So, we've immediately got at least 8 different parties to divide the pie. And that is a huge challenge to come up with something that all of these parties would think is fair and that they will all agree with. Still, getting everyone to agree to the right percentage of what the platform thinks is really hard. So, I think this is going to be a big challenge because there are the labels that are certainly not used to cutting in a fee for the end user or the fan, or a visual artist or the artist themselves.”*



The most important question is about the environmental impacts of using blockchain technologies and Web 3.0, which asks how the tremendous environmental impact of blockchain technology can be mitigated.

**Vickie:** *“That is a really important one. And in my view, if we cannot get the environmental impact to be as close to zero as possible, I don't think these technologies will survive. Because I think that it is too costly, it is something that flies against, especially; I think everything with Web 3.0 will be defined by the generation under 25 now. And probably the generation under 20 will express that the environment is an enormous issue for them. In contrast, the older generations have just been terrible about it; we'll keep polluting until we decimate everything. I think that we already see some blockchain technologies be able to promise zero carbon or a better way to have a decentralized tech that will not be so environmentally costly and so intensive. I think the ones that don't do that will die off.”* I emphasized her point by confirming that she was talking about another method of evaluating the blocks, proof of stake, and She Confirmed. She continued that *“And I think there are probably also things that we can't even foresee yet that could come out where it's harnessing a decentralized kind of peer-to-peer network without requiring so much energy coming from using all of that. I think we're still in such early stages of this.”*

Jakob: *“I don't know how far it is in general, but we use the flow blockchain, which is one of the most environmentally friendly blockchains. So, they have blockchains that use very little energy and minimal pollution to make transactions. They use a lot less computing power in order to do it. So, flow blockchain is one of those; it's not something I personally have focused on.”*

From here, I had some specific questions for my informants related to what they are doing in their businesses.

I asked Jakob how his company helps small artists who don't have the knowledge to know and utilize NFT. He replied: *“I have ‘Mintix,’ which is a blockchain-based ticket company. The way that we have people integrate with NFTs is they don't know that it's NFTs. Because if you use the word NFT while it's in crypto and stuff, people get really confused. So, what we do when we are creating NFT tickets, is that we are setting up an ordinary ticket system. And basically, what you do is you put in your email, make a user, buy the ticket, and now you own an NFT; you didn't need to know what it was. You didn't need to know what it*

*did. But now you have a wallet because you just made a user. And now you have an NFT. And because you own that wallet, you can, through smart contracts, make benefits associated with that NFT.”*

**Me:** If an artist doesn't know he owns an NFT, how does he utilize it? **Jakob:** *“You can know that you own it, but you don't need to know anything about it. You just need to know if you buy this product, you will have these opportunities because of blockchain. Like you bought something, and that enables this. But don't talk about NFTs; it is more like buy this, and with this, you get a three-month subscription to Apple Music, as simple as that. That's how I like it, and people don't care what technology we use. It's basically saying you buy this ticket to this concert, and because you have this ticket, you can get these benefits if you want to access it. And if you want to access those benefits, that's also the Artist opportunity. Like that's their responsibility to say, hey, you were at my concert, log into this forum with the email you used for the concert, and you get access again. But the communication part is the hard thing”.*

The other question was if your consumer wants to sell and buy NFT, what should they do? Do you take care of the rest, or is it just their responsibility to sort it out? **Jakob** answered, *“No, we're doing that. We haven't done that yet, but we are building it now that is just on a website; you basically just access the secondary market. So, go into a website and say, I want to sell my ticket, and then you can put it for sale, but you don't need to say, I need to sell my NFT, so go into my wallet and put it in a marketplace. We're creating it for you. You just tell us your email and what product you want to sell, and we'll list it on our platform. The user experience needs to be comparable to what they used to. It's like eBay Or Finn. It's like I have a ticket and want to sell it. I go on Finn, describe what it is, and then I put it for sale. With us, it's even easier because we inherently know what it is. You can choose your product and then list it for sale. Smart contracts in general, have so many opportunities, and it's basically to define for the artists what they can provide. So, if the artists can provide cool merch, you can access specific merch. Maybe it's exclusive merch for the people who's been at the concerts. Or you can get airdrops video content, or photo content. So, whatever the artist is able to provide as content or experiences, the artist is able to write into smart contracts. It's really not limitless (I think he meant it is limitless), but there are so many things limited by what the artist can imagine to be and be able to provide. And we as a company, bridge that smart contract. We help them create those benefits but write them down. We give access to them.”*

In the end, **Jakob** debated the music industry and Web 3.0 adaptation challenges by mentioning that *“I think one of the things that are really important for you to think is, historically speaking, the music industry is really slow to innovate. And you mentioned yourself with media companies and digital companies taking over, and I think that's going to be the same thing now. And even though we are more aware and educated based on what happened with streaming, I think it will still be slow. I do think a lot of the solutions will not come from the music industry. I think very few things are going to be from tech companies that have some understanding of how the creative industries work that then provide services that some of those really make sense for the music industry to adapt. But I don't think it will come from the music industry. I'm not totally aware of how the music industry all over the world, but at least in Scandinavia, which is quite innovative, very few people know anything or have some sort of understanding of tech innovation. And I think in order to innovate a whole industry, it needs to be a large number of people. So, I don't think the solution will come from the music industry. I think it's going to be a byproduct of people focusing on gaming, focusing on financial transactions, financial solutions, and other technical aspects. So, it's a company that's going to focus on where the revenue is. Then they're inherently going to create opportunities that the music industry can adapt to and evolve. I think the music industry will be one of the main reasons things will be slow. I can't refer too much to Roundtable, but one of the things talked about is the black boxes or the registration of money and the flow of that. And even though blockchain inherits could do something about it, the music industry sits in the data, and they're probably not going to come together. To combine the efforts to create a transparent system for many reasons, including bureaucratic reasons. There are lots of financial things and services that will lose their business because of it. I think the technology will mature a lot before the industry will be matured to use it.”*

As the last part, I asked Vickie about some features of Web 3.0 that can have advantages over the Web 2.0

The first feature I asked Vickie to elaborate on was Digital Merchandising and Collectability. She elaborated, *“Whenever there's a new technology, I always try to think about existing behavior that we know in music. With Web 3.0 and NFTs in particular, one of the things that we have a very long history in is its collectability. People love to collect colored vinyl and ticket stubs when it's not just a QR code, band merchandise from tours, and on and on. I think that NFTs for music are going to evolve. There's going to be a lot of collectability in there of both. I think it's going to be both digital and physical goods. I really*

*like some of the initiatives where there's a physical good that's reflected on the blockchain so that people who are collectors get a physical object and a digital object. I think there's also going to be access, where people get access to the artist, ticketing, or some other benefit that you wouldn't get otherwise. Lastly, I think there will be a lot of opportunities around NFTs that are around co-creation. Maybe the fans who are in there get to vote on which mix they like coming from an artist, or maybe they get stems, and they get to play around with that artist's work, or maybe they even get to mix and participate in the creation of the artwork. Whether that artist will then take it to the next level and say, okay, now you've co-created this, and you get a share of my revenues on the NFT and off the platform. I think these three things of collectability and access and co-creation will be really central to how NFTs evolved for music."*

POAP: *"It's perfect for music because we all love to brag that we saw a band when they were young. As for me, I saw Beck. When he only had a single out, and there were 15 people in the club in Seattle, he didn't know what he was doing on stage. He was so young, and he was kind of uncomfortable. But it was the Crocodile Cafe in Seattle, in this tiny venue. And absolutely, if I could have a POAP that proved that I was one of 15 people in that room, I would definitely want that. And I think POAP is like proof of many different things around fandoms. I think it is also going to be huge."*

I asked Vickie how artist centric the NFTs are when there are many companies around for getting benefits from the artists. **Vickie** *"That's a really great question, and I think that right now, we see things as very artist-centric because artists have always been very open to embracing technology. Same thing with AI; I use AI to unblock my creative limits. They're going to do it. We've seen this, and we've also seen some companies really lead the path, like Warner Music, trying to create a pipeline of their artists into Web 3.0. In that sense, the Warner Music initiatives it's very label led. I think that we will start to see more and more of this, that it will be a mix of artists, and it will also be labeled who wants to do this, but I think that what they won't likely be able to do is to create community if artists are not involved. People will not buy into that; I think in the Web 2.0 world, artists are much more passive. They are present on Spotify if they even don't do anything. And yet, I think having a presence in Web 3.0 is going to require more of a decision be there, do something, perform, so there's just a difference, there's a difference in the expectations of what consumers want."*

I asked Vickie if she thinks Web 3.0 is only artist-centric in terms of being present or if it is artist-centric in revenue also. She replied, *“I think right now, it is very artist-centric in terms of revenue. I also know we have three very big major labels and major publishers, and they will want to have models that are much more about their entire catalog.”*

#### **4.2. Findings from desk research:**

**Scarcity:** Due to the decentralized nature of the blockchain technology on which NFTs are based, there is a widespread misconception that token scarcity should motivate investors to acquire NFTs swiftly. Nevertheless, one could argue that demand is affected by more conventional factors. Efficacy and Origin are the two most influential demand-driving factors. For an NFT to be effective, it must be something that people are willing to buy, such as a ticket to a concert or conference or a piece of in-game equipment. Furthermore, the history of a token, such as who created it and where it was first used, is referred to as its "origin," which is the second most vital factor in persuading a fan to buy the token (Hayworth, 2021, p.68).

**Proof of Attendance Protocol (POAP):** One may utilize a Proof of Attendance Token (POAP) to demonstrate attendance at any event, whether online or in person. So, it may serve a similar purpose as a concert or event souvenir. As a mark of thanks for your participation, you may add these tokens to your digital wallet (Afolabi, 2022). Moreover, POAP may be utilized to provide exclusive access to promoted brands or additional functionality for badge holders. It's simple for a band to recognize fans who attended their first album release party and reward them with a VIP pass or other perks.

**Compatibility:** Examining Web 2.0 and Web 3.0 leads us to conclude that these two domains can coexist because they are a part of the same worldwide ecosystem and society known as the Internet. The basis may change, but there may still be some practical issues. Web 2.0 and 3.0 can work together because of this common feature. Some Web 3.0 strategies, as Vickie mentioned, enable Web 2.0 apps to gain from Web 3.0 as well. The new playlist feature that Web 3.0 artists can use for their fans is another tactic that Spotify has given. The new Token-Gated NFT album that Spotify has created can only be accessed by users with an NFT key card and will be validated on the Web 3.0 realm. Fans enter their NFT accounts, sign into the Discord and Twitter accounts of their favored musicians (in this instance, KINGSHIP), and then click on the link only available to token users to view this video. The

secret Spotify playlist is then accessible via the URL. (DALUGDUG, 2023). Using this as an illustration, there would have been many more approaches and techniques in the near future for bridging these two areas.

**Music record labels and artists:** Zi Wang(2022), in an article, mentions that after the NFT sales boomed, the marketplaces for many visual artists, and music artists have evolved in this innovation, and many record labels like Warner Music Group (WMG) and Sony Music did not stand back and watch, but they dived into this innovation hoping to see a massive revenue from NFT sales. Later Universal Music Group (UMG) signed a partnership with CurioNFT to launch officially licensed NFTs, WMG partnered with OneOf marketplace, and Sony became a partner with Snowcrash. Lastly, Kobalt Music Group was another publisher that launched NFTs for the market. In an interview with Vérité (singer-songwriter), she claims that the record labels' stance on Web 3.0 is not dissimilar from their stance on streaming, which the brands initially resisted because it interfered with their business plan before eventually yielding. The global music industry was worth \$24.9 billion in 2021, or about the same as in 2001 during the CD surge. Vérité expresses concern over how much control the company will have over the artist's finances and information. Labels indicate a great deal. A lot of stuff gets thrown against the wall. And if it succeeds, you'll become famous; if it doesn't, you'll be basically immobilized (Wang, 2022).

**Intellectual property rights:** In the context of NFTs and art in general, intellectual property rights are an extremely important factor. Artistic activities generate intellectual property. It is not something one can hold in their hand; rather, it is an intangible characteristic. Intellectual property includes legal rights for creative works, such as patents, trademarks, and trade secrets. Copyright and trademark issues will dominate this debate on NFTs. Copyright is formed whenever an original creation is permanently documented in some manner. This requires a physical medium, such as a painting, piece of paper, cassette, CD, or computer file. So, one cannot rely on the work existing only in their mind, in spoken or sung form, or in a live performance (unless, of course, they have a recording of the last three). Although registration with the US Copyright Office is not required to secure a copyright, there are advantages to doing so. It is essential to highlight that the copyright does not form part of the actual work. Real works include paintings, computer programs, JPEG photos, films, and songs, and copyright is an intangible right granted to creators.

When a customer buys an NFT product, they simply get ownership of the work itself; they do not acquire any rights to the underlying copyrights. The author still has the right to the original work. In addition, the purchaser is not permitted to make or sell further copies of the NFT. Nonetheless, in the event of assigning formal agreements from the original inventor, one might purchase the copyright in an existing work. Nevertheless, as practically every item on the internet is protected by copyright and using the existent work would infringe the creator's copyright, it is recommended to produce an original work while making an NFT. However, there are some exceptions concerning using an already existing copyright. Some websites offer a royalty-free license for videos and images, enabling the buyer to utilize the work (Fortnow, 2021, p 243-245).

One of the essential features of NFT for artists is the royalty upon resales. That means every time that the artwork has been resold by different people, the creator gets his own share of the royalty. To utilize this phenomenon, Smart contracts shall be used. The creation and ownership of 3D digital and physical things may be validated and documented through smart contracts according to blockchain technology. It is feasible to code a smart contract that distributes a resell royalty to the NFT's creator upon collecting information showing that a resale has happened. This phenomenon can happen with the help of NFT platforms. For instance, OpenSea is an NFT platform that is one of the most popular sites for minting, trading, and selling NFT in 2022. Any NFTs issued through one's OpenSea listing account will be subject to a resale royalty that you would choose during the signing-up process. The royalty rate is variable and might range from 0% to 10% (Murray, 2022).

### **The critical concerns of Blockchain technologies and its subcategories:**

Before we go further, we should clarify Proof of Work (PoW) and Proof of Stake (PoS) because we will see these terms in this paper.

In short, PoW refers to a type of validation that necessitates the users to mine or solve a complex computational algorithm to validate and send a transaction to the network; this approach makes a transaction expensive enough and safe to prevent fraud. On the other hand, proof of stake (PoS) uses less energy than proof of work (PoW) while performing the same function for which it was designed. However, PoS needs users to pledge bitcoin as security in order to add a new block to the blockchain's digital record (Nahar, 2022). Now that we know what these terms mean, we can continue.

Valeonti et al. (2021), in an interesting article, note that one of the massive debates regarding blockchain technology and crypto collectibles that concerns many people in and out

of the industry is the energy consumption connected with the Ethereum blockchain, where the NFTs are bought and sold. The energy that Ethereum consumes is estimated at 48.7 Tera Watt Hours (TWh) per annum, which is equal to the consumption of energy in Malta as of May 2021. This colossal consumption has resulted in severe criticism by environmentalists. The Art Newspaper argues that NFTs are helping us to destroy the planet. However, NFTs are simply smart contracts, and they are not exclusively related to Ethereum. Still, Ethereum was the first platform that introduced NFT. NFTs can initialize on any type of blockchain, which is more environmentally friendly.

On top of that, there are some systematic efforts which are being made by Ethereum to eliminate the carbon footprint that makes the future of NFTs brighter. Nonetheless, some critics say the issue of the environmental hazards with NFTs will not be solved in the near future. The critics debate that the method that the blockchain experts offer, which changes the energy-consuming Proof-of-Work(POW) method into the energy-efficient Proof-Of-Stake(PoS) method, is impractical since making such fundamental evolution on a blockchain system that has a 1 million USD transaction daily, requires a monumental effort and is eventually impossible (Valeonti et al., 2021).

Ethereum repeatedly went beyond the limits of the possibilities of decentralized innovations and claimed that it might also succeed in altering the PoS method. It is worth mentioning that this method (PoS) would decrease the carbon emission by 99 percent, resulting in the reduction of the minimum carbon footprint of all NFT-related trades.

This makes sense since the PoS architecture enables node operators to utilize their coins as collateral for confirming more transactions given the more coins they own. Strangely, green campaigners have also highlighted worries about the Proof-of-Stake strategy for conserving energy. Numerous individuals believe Proof-of-Stake (PoS) blockchain "transfers authority to the already powerful," which is also problematic for climate justice. When we reach that 'point, we must analyze the larger picture and all our available alternatives (Valeonti et al., 2021).

Important note: Ethereum successfully converted the proof-of-work method to the proof-of-stake process, resulting in 99,95% less carbon emission than the previous method. This conversion occurred on September 15<sup>th</sup>,2022 (Ethereum, 2023).

However, the statement regarding environmental impacts is still valid since NFTs are the innovation of Ethereum. Yet, it is not entirely linked to Ethereum and can be utilized with other cryptocurrencies.



## 5. Discussion

This chapter analyses and discusses the findings and attempts to link and elaborate more on some of the literature or external research to support a concrete concept. In this chapter, some personal analyses will be considered in addition to the findings from the informants and the theoretical context.

Firstly, I should note that the interviews did not all go as planned. Two additional informants declined my invitation to discuss this with me. The first informant I did not get a chance to discuss was Yvan Boudillet. When I met him, he showed interest in this interview, yet after sending several emails, he did not reply to any of them. However, regarding data gathering from other informants, having Yvan as an interviewee would probably not alter the findings significantly since he works in the same industry as my other informants. The other person I was hoping to contact was an expert from the technology side to help balance the fields of music and technology. Unfortunately, the informant declined to be interviewed.

Secondly, some of the answers were not as expected. Some of my questions have been dodged or redirected to somewhere else, and I could not get them back on track. There might be several reasons for this. Since this topic is contemporary with not many books or experiences in this area, informants might have lacked knowledge and redirected questions to topics they know about. Alternatively, this could have been my fault from being shy in requesting them to get back on track and stay with the flow. Therefore, I had to rely more on desk research and try to find some of the answers through the most updated articles in this era.

Lastly, I should mention that sometimes I elaborate on blockchain technologies, although my thesis is limited specifically to NFTs. This is because NFTs are using blockchain technology, and many of the challenges in this era come from the parent. NFTs rely on blockchain technology, which powers the payment system and currencies. Therefore, to grasp the functioning, potential, and limitations of NFTs, it is essential to comprehend the fundamentals of blockchain technology.

### 5.1. Web 2.0 and the lack of scarcity:

The debate about the challenges within the music industry involves not only technology but also the systems and people in power deciding how the music industry works. One may argue that the new approach utilizing digital technology, streaming services, and subscriptions, makes people rent access to the catalogs of their choice. In this system, the traditional sense of buying a copy that you may keep and use in whatever way you want, does

not exist. Without any private goods to own, streaming services can be categorized as digital club goods. Everybody with access to the club (everyone that has paid a subscription fee to the streaming service) has equal and non-rival access to the catalog. (According to Tschmuck, private good is referred to as an approach when there is exclusivity and rivalry in consumption when only individuals who paid for the item can use it, and others are excluded from the consumption. For instance, Vinyl Records, CDs, Paid downloads, and other types of physical access. For the public good, all content is accessible for everybody for free, and it is non-rival and not excludable in consumption. The club good fills the gap between public good and private good and acts as the intermediary between these two goods; people who paid the ticket and access to the Opera, Live Concert, and in our case, the subscription fee, can listen and consume the goods. Yet, this phenomenon is still a non-rival (Tschmuck, 2017, p.45-55)).

Nonetheless, in such a system, scarcity cannot exist as with physical sales because, as mentioned before, Web 2.0 is meant to work as a read-and-write medium. On the other hand, Web 3.0 includes the opportunity to own data. This phenomenon might not be interesting for average listeners with little personal interest in their favorite artists. However, this might be a game changer for artists who have hardcore fans willing to support their favorite artists in both the physical and digital worlds. As Vickie mentioned in the findings, when playing music in streaming services, one could not express that they are real fans just because you played someone's music. So, Web 3.0 and NFT can bring exclusive opportunities for those wishing to support their favorite artists in the digital world.

Subsequently, token creation can bring scarcity back by producing a limited number; thus, bringing rivalry back into focus, turning NFTs into private goods, and giving some value to the consumers holding tokens. Moreover, artists can provide more value to their token holders through their creativity and services. It is worth mentioning that the value the artist brings is the most crucial element in this medium. As mentioned, origin and efficacy are the elements that give value to the tokens. Furthermore, tokens without these two elements are just useless digital items.

## **5.2. NFTs and solving the superstar economy:**

The informants' answers regarding the superstar economy question were quite different. I believe they were looking at this phenomenon from different perspectives. However, I personally agree with Jakob and Nic's viewpoints. Although NFTs and Web 3.0 has a lot to offer and help many smaller artists with fewer fans, in the end, upon closer examination of the benefits afforded to both smaller and famous artists, it becomes apparent

that the advantages tend to favor the latter group. The superstars are the ones taking most of the money out of these platforms. Superstars can be leaders and persuade their fans to do what they ask. Many biased fans follow and obey what their idol (favorite artist) asks of them. Although one may argue that opposition to the streaming services' unfair pro-rata distribution model, which compensates artists based on their streams relative to the proportion of the total stream, NFTs are more like direct payments to the artist. Nonetheless, superstars would be the real winners of this innovation due to the bigger audience number of fans, marketing, technology access, and investors' support.

### **5.3. Usability and users' category**

The technical and non-user-friendly nature of Web 3.0 has generated a massive gap for both artists and consumers. Although there is a statement about the gas fee, perhaps a barrier to entry for many small artists, this gas fee is not expensive enough to stop people interested in buying and selling NFTs. Suppose we divide the usability and user groups into two parts: artists and consumers, and then divide each group into two other sub-groups: people with knowledge (age, geography, etc. is very crucial) and people without any insight. Then we ask people about the straightforwardness of NFTs. In my opinion, we would get completely contradictory comments. On the artist side, it can be easy for those with background knowledge or superior artists with plenty of professional support around them to more easily accomplish these NFT-related tasks. For smaller artists, these methods would get more complicated and labor intense. However, Vickie has mentioned that the popularity of the artists does not matter if they cannot successfully convert their Web 2.0 fans into Web 3.0, which may be true. Still, the audience size and the number of fans matters. In bigger crowds, there is a greater chance of different people in different age groups, as deductive logic suggests, so the conversion rate would be even higher given the greater diversity of the audience.

Having a concept as Jakob mentioned with NFT companies eliminating the challenges and doing most of the job for their consumers might solve many difficult challenges. In this situation, consumers and even artists using this service do not need to worry about all the difficult approaches to create and utilize Web 3.0 services. However, this idea might be interesting if a company is small and has limited consumers. Likewise, consumers need to know what they are buying and using and how to have control of the products they own.

Speaking of the younger generation (Generation Z or Gen Z), one may argue that the post-digitalization age consists of people who grew up utilizing mobile devices, tablets, computers, and other forms of digital technologies in their everyday life. This generation is very comfortable adopting new digital technologies since they already have years of experience using modern technology. They are entirely familiar with online games, buying accessories for their game characters, and using Web 3.0. Although they might not know the technical names and terms, this world is not unfamiliar to them. This is why Web 3.0, in general, and NFTs are for them. Moreover, the prospect of owning old recordings and artifacts of their favorite artists may appeal to the older generation who have been purchasing such items traditionally. More research has to be done to determine the potential target audiences for Web 3.0, as well as the need to understand the generation Z, their purchasing potential, and their capabilities, which is beyond the scope of my thesis. Furthermore, although NFTs platforms might be challenging for many people, especially for the older generations, we will witness more straightforward-to-use platforms, as we already have seen many in Web 2.0. As Web 3.0 evolves, many companies will offer services with greater convenience as they develop new approaches to interacting with their customers.

#### **5.4. Web 3.0 and legal framework:**

One of the most challenging aspects of Web 3.0 is the legal framework. Although there are some practical rules and regulations in Web 2.0, it should be debated whether these rules still apply in Web 3.0. As Nic mentioned, numerous undiscovered gaps in this era require attention and action. The issues mentioned by Vickie illustrate some of these flaws. Moreover, there are some issues with these regulations from both the legal and consumer perspectives. Numerous individuals are unaware of the capabilities and limitations of their NFTs. Although individuals purchase an NFT from the artist, they are not absolute owners of anything else than that specific «tangible» object because the token's underlying work and copyright or author right still belong to its creator and the artist. Purchasing a piece of music from the artist does not grant the purchaser the right to alter, copy, and sell it as their own. In addition, reselling an item would grant the original creator royalties, so every time a token resells, the artist should receive a royalty payment. This phenomenon may be unique to blockchain technologies, as nothing comparable existed in earlier innovations.

Legislative and judicial bodies require time to keep up with the accelerated adoption of new technologies. As we wait for the courts to catch up, we can make educated predictions about how the law will be interpreted based on the relationship between the new technology

and long-standing legal and policy principles. However, we can infer how the law may be applied by examining how it is presently applied to other asset classes, such as cryptocurrencies, artwork, and collectibles.

### **5.5. Environmental issues:**

There have always been debates regarding the carbon emission of blockchain technology and Web 3.0. As mentioned in the findings section, the environmental impact of blockchain technology is immense and worrying. One also can open a debate about the entire internet, which almost nobody questions. The internet is not as green as we think. With a quick Google search, one finds that sending one simple email generates 4 grams of CO<sub>2</sub> and that the greater internet generates almost two percent of global carbon emissions. Speaking of blockchain technology, this innovation and its energy consumption have raised red flags for many environmental critics and, in my opinion, these are very crucial topics. The environmental impact should be one of the most critical issues for all humans around the globe, whether they live in the north or the south, surrounded by desert or ice. Nobody is excluded from this global challenge as we all live on the same rock. As Vickie mentioned, we cannot utilize the innovations of Web 3.0 worldwide and call it a successful business model unless we reduce the emission and environmental impact to next to zero. We have read that proof of stake may reduce the emissions by a tremendous amount, yet why have all cryptocurrency companies not immigrated to the PoS method?

In my opinion, there are several reasons for that. One reason could be that system immigration is not as easy as many say. Changing to a new method of validation means a company should redo the entire infrastructure of the system, rebuilding every brick of the code. Moreover, the safety which PoW offers is far better than PoS's, meaning PoS is less secure and more exposed to cyber-attack and hacks, which are nearly impossible within the PoW framework. This does not imply that PoS is entirely unsafe, but it means it is less safe than PoW. This is a good excuse for those heavily invested in blockchain to not migrate their assets to an innovation that is less secure.

Lastly, if we use the PoS method, it will generate less emission. Still, companies in power have a significant amount of consumption, and they are choosing and controlling what others should do, exactly as the people in power control the music industry. For example, bitcoin is one of the most famous cryptocurrencies in the world. One of the main reasons for this could be that it uses PoW, which brings more safety, resulting in complete trust and

triggering more value for this cryptocurrency. Also, getting bonuses and payroll is one of the most focused approaches in PoW, which makes even engineers and investors face the moral challenge of deciding between an environmentally-friendly option and a more profitable one, particularly in a capitalist economy that prioritizes profit for limited companies.

To conclude, one can argue that using Proof-of-Stake would decrease energy consumption significantly. Nevertheless, if we set energy consumption aside, Proof-of-Stake is not an excellent substitute for Proof-of-Work. Both of these methods have their advantages and drawbacks. As mentioned in the findings section, PoS would have the lack of decentralization as a disadvantage. Lack of decentralization happens when a large node conquers other smaller nodes, causing control over other nodes and resulting in a less decentralized node network.

### **5.6. Independent NFT marketplaces:**

Some independent marketplaces provide green services on top of all issues and challenges within these technologies. Since NFT tokens are non-fungible and do not follow the cryptocurrencies value concept, having Proof-of-Stake has no barrier to use. Due to this, many independent marketplaces now use the PoS method as their medium, which causes a significantly low carbon footprint. Companies like Jakob's Mintix or Serenade etc., are independent platforms with concerns regarding environmental impact. They were able to come up with new alternatives to make transactions with less carbon emission. Not only could these companies have greener energy, they also successfully bring a straightforward approach for their consumers, which enhances ease of use. For instance, Serenade offers consumers NFTs and only needs a bank card. There are no signs of crypto-wallets and intricate, advanced technologies. Moreover, as Jakob mentioned, their NFT ticket-selling project is just a regular buy-and-sell approach which is very straightforward for many average users. Many other companies have shortened the advanced steps and made it easy for consumers, which we will continue to witness.

### **5.7. NFTs being artist centric:**

As we discussed with Vickie, she mentioned that in contrast to Web 2.0 and streaming services' catalog-centric nature, NFTs are artist-centric in terms of presence and connection with fans. Artists are directly in communication with their fans through fan clubs and Discord. Fans can participate in many stages, from composing to releasing the song to going live. Likewise, it is the artist's responsibility to bring as many services and new ideas as possible in

order to create engagement with their fans. POAP can produce another method for relationships between artists and fans. The artist can provide many unique benefits to their fans through this method, bringing more credibility to the artists and more engagement for the fans.

However, this presupposes a specific characteristic of an artist type, either a well-educated and knowledgeable DIY artist with aspirations both on the artistic and the technological side. Many more traditional artists would be exempt in this picture. Also, the revenue side of Web 3.0 may not be as purely artist-centric as the Artist-Fan relationship. When a record label steps in, this equation loses balance in being artist-centric because not all the revenues go to the artists. As Vérité mentioned, record labels would take control and remove artists from the focus on income.

## 6. Conclusion

### 6.1. Closure/Continuation?

So far, this research has elucidated the essence of Web 3.0, the innovation of the NFT phenomenon, the potential solutions they offer, and the potential benefits for musicians. In addition, the paper clarified on how the current framework for the music industry has been constructed and evolved with the introduction of new technologies. The discussion of the methodology that follows clarifies the efforts made to gather and compile data for this research. The restriction of the semi-structured interview has been discussed. Several issues have been addressed in the conclusion and discussion. Issues and solutions that must be highlighted here are: 1. Usability and Technical difficulties. 2. Economy and Marketplace. 3. Environmental Issues. 4. Legal Framework, 5. Business model issues and challenges. Lastly, this paper will elaborate on final thoughts and opportunities for further research.

Firstly, usability has been elaborated on in the discussion. As time passes, we will undoubtedly observe that the technical issues and the usability of these innovations will become less complicated because of the accelerated development of technology. It is important to note that while composing my thesis, I observed a positive change in NFTs. When I began writing this thesis, the technical nature of NFT platforms was more difficult. For instance, connecting the Meta-Mask digital wallet to the NFT platform was difficult. One had to create a digital wallet separately, run it on a smartphone, and sign up for the NFT platform separately. There was also a lengthy process, jumping back and forth between software and an extended, unique code that had to be copied and pasted to connect the wallet. Now that I am nearing the end of the paper, this lengthy process has diminished significantly. Because now there is a browser extension for digital wallets that opens automatically in parallel with the NFT platform, 80% of the work is done automatically. As Vickie mentioned, numerous companies are investing in this phenomenon, making the development process significantly more efficient and user-friendly for most people. Perhaps, it will be like the early internet in the mid-1990s when many feared it would fail because it was difficult to comprehend and use. As the gap between knowledge and difficulty has shrunk, the internet has become an essential instrument for most people today. However, Web 3.0 is still in its early stages and has not yet reached the level of Web 2.0 regarding user-friendliness. It has been discussed that the process may be complicated depending on the user's age group and technical knowledge. Utilizing NFTs and working in



this domain requires some particular expertise as it is time-consuming and requires knowledge of the digital marketplace and how it functions. Due to the rapid rate of change, one must always strive to adapt quickly. This has nothing to do with the user-friendliness of NFT, but rather with this innovation's market and commercial aspects. Due to this, it requires additional helping hands, and it would be challenging for a DIY musician to carry this heavy load in addition to their music equipment.

The NFT is becoming more user-friendly and artist-friendly, which could be a game-changer for content creators and users. This development has the potential to broaden outreach and widen opportunities.

Secondly, NFTs, like many other innovations, can be utilized in various applications, not all of which are valid and artistic; they can be created by many people with artistic visions or just for non-artists who see this innovation as an entertaining game. Yet, this thesis considered the artists and bands as the core creators. A participant in the Kristiansand roundtable conference has mentioned that nowadays with the help of technology, many people have free access to applications like garage-band in which they can create some beats and some melodies with that application, does this make all of those people an artist? Should we call the musicians? (Kristiansand, November 16, 2022), NFTs are not excluded from this viewpoint. As previously mentioned, Web 3.0 platforms can be utilized by anyone, allowing artists to interact directly with their followers. Furthermore, with the aid of NFTs, artists, and supporters can collaborate on something mutually beneficial, this phenomenon might assist many artists to stand out in this new revenue stream. Fans can directly support their favored artists by purchasing and selling NFTs as merchandise. Trading NFTs on a stock exchange enables artists to receive royalties whenever a trade occurs. This phenomenon did not exist prior to NFTs. NFTs cannot eradicate the superstar economy problem, as it is not limited to Web 2.0 and the internet. Superstars can still generate massive revenue from NFTs if they can successfully convert their followers from Web 2.0 to Web 3.0 and increase their fan conversion rate. Having a superstar economy is a market issue. Due to the demand threshold from followers and successful marketing and branding, they would benefit more from these modern innovations.

Thirdly, environmental issues and their associated dangers have always been one of the primary concerns of environmental activists. With the advent of NFTs and the prevalence of Proof-of-Stake-based cryptocurrencies on most NFT platforms, environmental impact is no

longer an issue. However, not all crypto-currencies use PoS, and many crypto-currencies, such as Bitcoin, use the traditional PoW method. NFT platforms have shifted to greener options and are attempting to leave the smallest possible carbon footprint since the value in the NFT system is derived from the art itself and not from the currency being traded.

Fourthly: As indicated in the discussion, the copyright underlying NFTs still requires additional consideration. There is often a lack of understanding regarding the ownership of intellectual property, as purchasing an NFT generally grants the buyer permission to display and use the artwork. However, this type of permission does not grant the buyer intellectual property since they are not the original creator. Comparable to paintings, purchasing a painting from an artist does not transfer all copyright rights to the purchaser. They cannot claim that they have created the painting; they are merely the painting's owner, which allows them to display it and place it on their walls. They do not have permission to use the painting in a gallery and generate revenue by hosting an art exhibition unless the artist grants permission to do so. The only distinction between NFTs and this method is increased complexity. The original creator has the ability to modify the access control of their art by considering the categories of access they grant to buyers and granting them a special license. As Web 3.0 is a global issue, and copyright laws are predominantly region-specific, these regulations still require additional attention.

As a consequence, various nations may take diverse approaches toward these innovations. Nonetheless, this global innovation necessitates a robust framework to be utilized equitably and effectively. As Vickie mentioned, the jurisdiction sector requires additional time to develop a complete set of rules.

Fifthly, one of the issues for this business model is with the current technological transition; investors have expressed high confidence in their investments and believe there is minimal risk involved. However, history has shown that technological advancements do not always guarantee success. For instance, case studies on Quadrophenia and MPEG7 support the hypothesis that not all technological innovations are embraced by the public. There is a concern that, despite investors' optimism, the public may not share the same enthusiasm. It is important to note that investors tend to follow each other's lead, which can result in a lack of independent analysis. This can be due to the fact that not all technologies are as attractive for consumers as they might be for the engineers who design them. As such, it is possible that

investors may be incorrect in their predictions, and the public may not fully embrace this new technology.

In addition, While the Internet was originally envisioned as a democratic utopia, it has since evolved into a global marketplace dominated by a small number of technology giant companies (which is elaborated in DMA, DSA section). Countermeasures seek to once again make the Internet fairer, more transparent, more accountable, and more democratic. These signs that the democratic dream and hope have not died completely. Blockchain can be viewed as a similar movement, with its sectarian approach and religious fervor exemplified by the slogan "This is a possibility for everyone to get on board." With our skeptical lenses on, we've seen similar phenomena emerge only to be swallowed by multinational companies before. It's possible that something similar to what happened with the monopolization of key ingredients in the supply chain will happen here, or that big companies like Microsoft, Amazon, or Google will come up with a solution that is more user-friendly or attractive. After complete penetration of a market, a sustainable business model will emerge; as in the examples of Google's search engine and Meta.

## **6.2. Returning to the research questions:**

The purpose of this study was to discover answers to the research questions regarding what this innovation is and why artists should use it over the previous invention. It described the challenges and issues with the previous streaming services, namely the pro-rata business model and the digital disruptions within the Web2.0 era, which pose a significant disadvantage for many artists and provide them with a strong incentive to find a better revenue-sharing model in the music industry.

In addition, the paper suggests that Web3.0 and NFTs have the potential to offer new approaches and solutions over the Web2.0 innovation, thereby resolving many of the problems that artists encountered with the previous model, also, the challenges associated with Web3.0 have been discussed, as well as the fact that not all of the challenges inherently stem from this innovation.

Moreover, in response to the third research question, the paper explains that Web3.0 may help artists stand out in the current business model by providing new tools for gaining attention as well as a new revenue stream, like bringing scarcity back, POAP, and the new features that artists can get advantages of. Nonetheless, this issue is related to market challenges because, in today's music market, standing out requires massive marketing promotion and numerous supports from sponsors, major record labels, publishers, etc. The

problems in the music industry cannot be resolved with only a new business model that might or might not generate awareness for the fans.

### **6.3. Final thoughts:**

This thesis described the possibilities of utilizing Web 3.0 and NFTs to assist artists and create more equitable revenue streams for everyone. It details what has been accomplished so far and how the music industry could evolve to provide more equitable solutions for all the stakeholders in this sector. Nonetheless, every innovation may have benefits and drawbacks, which this paper aims to illuminate and elucidate. There is a very blurred line between using and abusing an innovation. For instance, scarcity can be beneficial in developing consumer competition and rivalry, but it can also be abused. One should never forget this quote: “Music is for everybody. A painting is only for the person who owns it.” (Willem de Kooning.) The primary purpose of music is to be heard, not hidden away.

It is imperative awareness that technology is merely a tool, and it is incumbent upon us to consider how we utilize it with fairness and ethical principles in mind. Music has become data-driven as a result of digitalization; it is produced in a data format, released in a data format, and primarily listened to on digital data-driven devices. It is not the existence of these digital technologies that is problematic; rather, it is the industry frameworks and the individuals behind the practices that are responsible for the best possible advantageous implementation of technology implementing these innovations. Distribution chain and royalty distributions are the key consideration in this regard. If we cannot resolve these issues, even innovations that follow NFT will never be effectively implemented in the marketplace.

To answer the query, can Web 3.0 eliminate the problem and resolve the system's issues? The simple answer is NO. Yet can it be of use to our sick music industry? The answer is: If applied correctly and if embraced by both industry and consumers it could in some areas be a step in the right direction. Innovations, such as Web 3.0, hold the potential to address and improve certain problems within a system. However, it is important to note that these advancements cannot be relied upon to act independently and require supplementary efforts. Additionally, no-one can predict the future. One thing is certain in this equation: technology will shortly offer another innovation, as it has numerous times in the past. The history of music demonstrates that there is always room for innovations and technologies. From 1811 and the introduction of the Music Box to the Photograph, Gramophone, Vinyl Records, Magnetic Tapes, Cassette tapes, Radio Stations, Boom boxes, Walkman, CDs, MP3 Players,

The Internet, iPod, iTunes, Spotify, etc. and now Web 3.0 applications, there is always room for innovation. It is a significant observation that numerous technological advancements have the potential to withstand the test of time and remain relevant even with the emergence of new technologies. This is because, despite the expansion of possibilities and technological platforms, only a select few solutions eventually become obsolete. As an example, despite the evident benefits of digital formats, people are increasingly turning to vinyl as a means of listening to music. Moreover, it is worth noting that tape is still widely used in various industries, which emphasizes the point that not all technological solutions become outdated or irrelevant over time.

In contrast to the 1980s, when consumers sometimes struggled to follow new technological developments, general audience today are more receptive to innovations. However, consumers today now believe a better innovation system is on the horizon, which may make them feel less connected to advances because they believe the current innovation will not last. It is also conceivable that people will delay investing in NFTs if they believe the trend is fleeting. This viewpoint may be accurate, but in my opinion, this innovation might endure, as there are numerous massive investments in this development from major corporations, which could make this a stable medium. Lastly, history has proven that when there is a considerable investment in a system, the primary revenue will flow into the investors' pocket. That is why this innovation cannot eliminate all the issues in the music industry. It might remedy them for a short period of time, once the major labels start investing, which they already have, that doesn't solve the political problem that is the heart of the problem. The potentially successful outreach of NFT's can only become a reality if the industry as a whole, and not just certain rights holders and stakeholders, collectively ascribe to the idea. Everything starts and everything depends on this political consensus, this initial decision from CEOs and Boards of directors all over the world. But from all the historical, theoretical and empirical data that I have collected and analyzed, that seems like a utopian and unlikely outcome.

#### **6.4. Recommendation for further studies:**

There are several things I would like to mention. Since technology is advancing swiftly and I have witnessed an upgrade to the NFT system even through the period that I have been writing this thesis. Several new opportunities and challenges should be addressed through future research. Technology advancements always offer something new that merits investigation along with the discovery of new applications. As the digital world progresses at a rapid rate, more knowledgeable individuals are required to keep up and identify new challenges and opportunities. Since they are interconnected at their core, the introduction of Artificial intelligence, new Web 3.0 applications, AI agents, etc., would confer additional advantages for each other. How the music industry responds to such innovation will of course remain a topic that demands continuous research.

The same applies to legal frameworks; how will lawmakers adopt legal frameworks to balance the wants between the music industry, technology companies, and consumers? How can changes in copyright law ensure that music remains a sustainable and predictable business in the digital with the coming of AI, etc.

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