

# **Digitalization of the Music Industry: Critical Success Factors of Mobile Streaming Platform Applications**

## **Bachelorarbeit**

zur Erlangung des akademischen Grades „Bachelor of Science (B. Sc.)“ im Studiengang  
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# 1. Introduction

## 1.1 Motivation and Relevance

Since the release of CD's in 1983 the music industry went through drastic technological changes when it comes to releasing and demanding music. With the introduction of MP3-files in the 90's, the way music is consumed and shared changed drastically. MP3- files are accesable via personal computer and can be shared via e-mail and other clients.

Napster, which was founded in 1999, was one of the first online services to provide free sharing and downloading of MP3- files. (Aguilar and Waldfogel, 2016)

However, problems with piracy threatened the music industry and record labels. Fighting piracy issues in online music sharing was one of the reasons music streaming applications have entered the market with massive success.

Streaming services such as Spotify and Apple Music offer users a completely new way to listen and experience music. The digitalization through all segments led to a decrease in physical music format sales, while on-demand streaming services gained increasing popularity. (Aguilar, Waldfogel; Nordgård, 2021) While production cost sunk over the years as more and more software solutions replaced highly expensive studio equipment, consumers were confronted with new ways to demand music.

Stakeholder throughout the music industry are in need to adapt to the dynamic changes and new possibilities that internet music streaming offers. Recent reports reveal that streaming services make up over 60% of market share, while physical mediums and downloads decrease. (IFPI, 2020) Therefore, the wants and needs of music consumers as well as music labels shifted. Traditional music purchases are increasingly replaced by access and rent solutions. (Nordgård, 2021)

With mobile application solutions users can access millions of songs right through their mobile devices. Therefore, new chances and challenges for the music industry are created. The goal of this work is, to gain a better understanding on how mobile music streaming works and identify the critical success factors of such applications. Moreover, the chances and challenges for stakeholders in the music industry should be revealed and discussed. Therefore, the following research questions are addressed in this work.

*RQ 1: Which are the critical success factors of mobile streaming platform applications?*

## *RQ 2: What are the chances and challenges of the music industry in the digital era?*

To answer these questions, a status quo analysis is conducted to reveal the current stands in music streaming research. Moreover, surveys regarding the user as well as stakeholder behavior in the music industry are reviewed and presented. As new technologies arise, the wants and needs of users adapt and it becomes more challenging for companies to meet those needs. Thus, this work may provide insights for further development of music streaming platform applications, revealing potentials in a dynamic music industry environment.

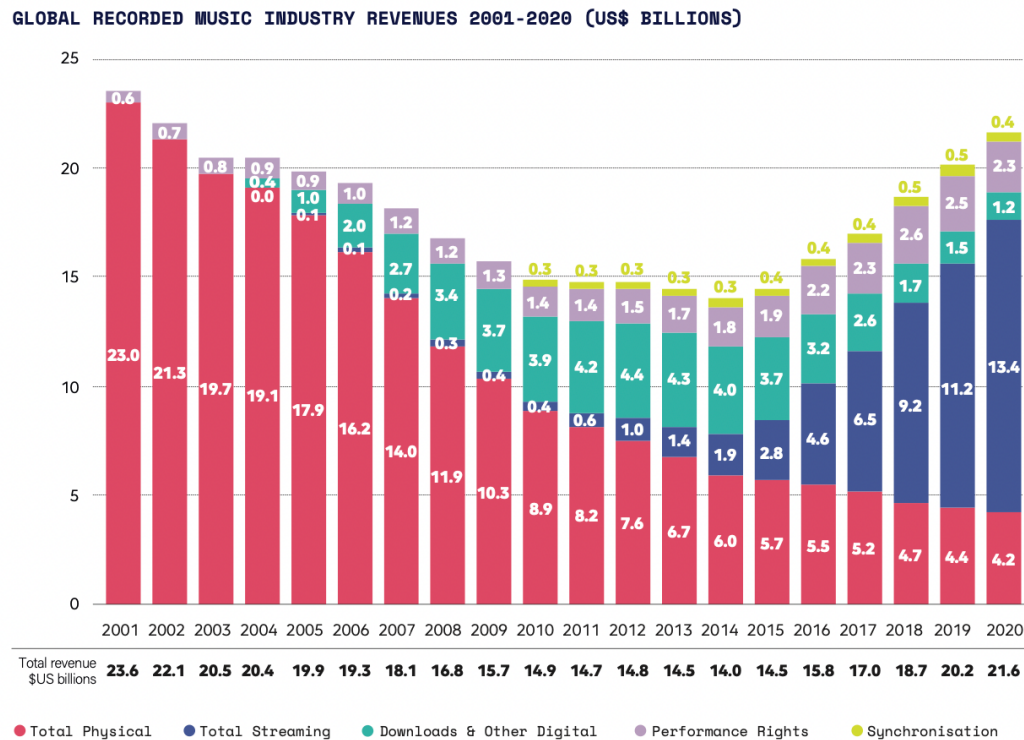
### 1.2 The transformation of consuming and releasing music

The digitalization of music businesses and the industry itself led to new chances and challenges for both, consumers and music labels. While compact discs (CD's) revenue increasingly declined over the past decade, digital music makes up the biggest proportion of music revenue. (Josko, 2019)

With the Internet, consumers of music were able to share and download music files through the web. New technologies such as data compression forced a drastic change in the music industry and all of the involved stakeholders. (Dolata, 2011) Moreover, production and distribution of music has changed. With the digitalization there are almost no production costs when it comes to the production of music, since there is no need to press the music on compact discs. (Waldfoegel, 2014)

The first online service to introduce the digital consumption and sharing of music was Napster, established in 1999. Napster is a file sharing services, which allows internet users to download and share digital multimedia content based on a P2P (Peer to peer) network.

However, the possibilities provided by new technologies and the internet disrupted the music industry as it was known before. (Dolata, 2011) Illegal downloads of music files decreased the revenue from physical sales drastically. Moreover, traditional music providers such as radio stations were affected by digital music sharing and its services. Therefore, the need to adapt to the new chances and challenges of digitalization became crucial for artists, record labels and consumers.



*Figure 1: Revenues in the music industry*

As the figure reveals, the music industry experienced a drastic and dynamic development, due to digitalization. (Global Music Report 2021) Revenue from physical sales declined by more than the half within 10 years from 2001 to 2010, while the overall revenue had its peak in 2001. With rising numbers of music streaming users and revenues from performance rights the next years will probably outperform this peak. The amount of retail stores, therefore, decreased while on- demand services boomed.

On-demand streaming services offer access to millions of songs from music databases. With the increasing popularity of mobile phones and smartphones especially more and more music consumers prefer mobile music applications such as Spotify, Apple Music and Deezer. Thus, the market structure and the way music is distributed went through drastic changes. Before the digitalization of musical content, sales were strongly impacted by the big record labels such as Warner, Sony Music and Universal Music. (Dolata, While these labels still have a huge impact in the music industry, the music market adopted to its drastic changes and an increasing number of smaller labels currently enter the market.

As figure 2 shows, the market structure of the music industry and its value chain have changed over time. While music was distributed in physical form in the past, digital music retailers have the most impact nowadays. Moreover, in the era of social media new

marketing and communication channels have evolved. Thus, artists as well as other stakeholders in the music business are able to distribute and consume music in a new, dynamic environment. As physical music distribution declined drastically in the past decade, thus, the costs of production reached almost zero. (Bockstedt et. al, 2005)

Meeting the needs and interests of all stakeholders across the music has always been challenging, since record labels, artist and consumers differ in their interests. For example, revenues that artists receive was and still is a huge part of designing and re-thinking the music market. The supply link arrows mark the distribution paths made possible by the digitalization. (Bockstedt et. al, 2005)

Changes in the market structure have resulted in new business models. For example, distribution channels have shifted to social media as it is becoming increasingly popular in the past years. The integration of social media to music streaming services fosters this development and is promising for future research to measure its impacts in the music ecosystem.

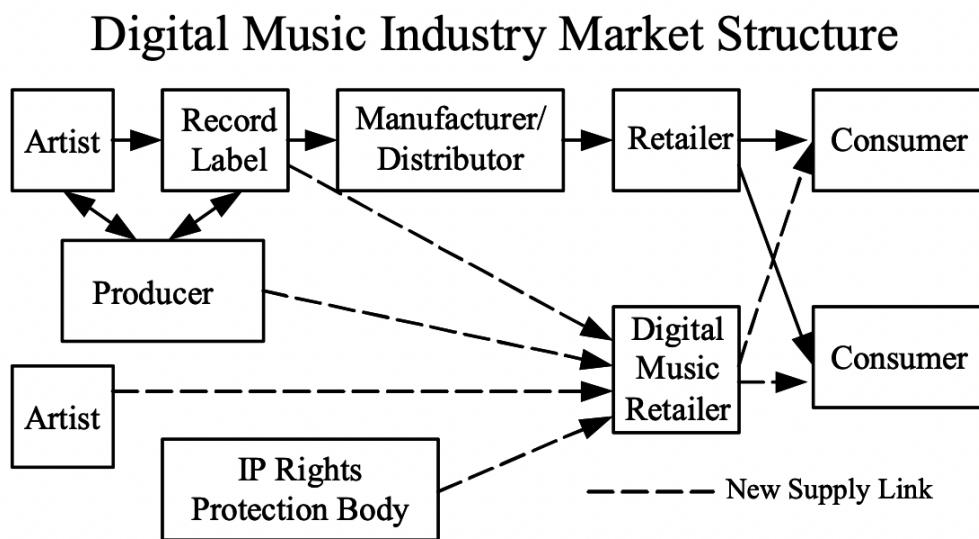


Figure 2: Market Structure in the digital music industry (Bockstedt et. al, 2005)

## 7. Conclusion and Outlook

This work presented the current state of music streaming and its potential for the future. New technologies were crucial drivers in a dynamic and steadily evolving industry. Expectations of users of different streaming applications increase with the forces of digitalization. Artificial intelligence highly impacted the way music is consumed and revealed new potentials for market participants. Automatic continuation and music recommendation systems have effectively contributed to achieving higher user satisfaction addressing the first research question in this work, which deals with the critical success factors of mobile streaming platform applications. While current market participants offer slightly similar functions and prices, the quality of recommendation algorithms have huge impacts on the position of a music streaming company in the market. Moreover, different countries consisting of a variety of users differ in their listening and interaction habits within music streaming applications.

Thus, gaining a understanding of user behavior within such applications and especially recognizing their emotions remains a challenge but is highly desirable for consumers as well as companies. Further research in Computer Science dealing with emotion recognition within these applications supports potential new market entrants as well as established market participants.

The aim is to achieve consensus within an industry consisting of a variety of stakeholders within a dynamic ecosystem.

Maximizing revenues for artists which suffered from revenue setbacks due to illegal ripping and copyright policies while optimizing the user experience and eliminating illegal downloads and distribution of musical contents is a huge challenge for the music industry.

As there is not much literature dealing with application of evolving technologies such as Blockchain to the entertainment sector, future research might investigate the chances and challenges.

However, as the music industry has been disrupted by new technologies in the past, adoption of new technologic approaches is a long-lasting process.

Moreover, revenues from music streaming increased massively in the past years and experts predict that the following years will follow this development.