



UNIVERSITA' DEGLI STUDI DI PADOVA

**DIPARTIMENTO DI SCIENZE ECONOMICHE ED AZIENDALI
"M. FANNO"**

**CORSO DI LAUREA MAGISTRALE / SPECIALISTICA IN
BUSINESS ADMINISTRATION**

TESI DI LAUREA

**"MUSIC STREAMING PLATFORMS AND THE EVOLUTION OF THE
MUSIC INDUSTRY"**

RELATORE:

CH.MO PROF. FABIO MARIA MANENTI

LAUREANDO/A: SOFIA MASSAROTTO

MATRICOLA N. 1210654

ANNO ACCADEMICO 2020 – 2021

Il candidato dichiara che il presente lavoro è originale e non è già stato sottoposto, in tutto o in parte, per il conseguimento di un titolo accademico in altre Università italiane o straniere.

Il candidato dichiara altresì che tutti i materiali utilizzati durante la preparazione dell'elaborato sono stati indicati nel testo e nella sezione "Riferimenti bibliografici" e che le eventuali citazioni testuali sono individuabili attraverso l'esplicito richiamo alla pubblicazione originale.

The candidate declares that the present work is original and has not already been submitted, totally or in part, for the purposes of attaining an academic degree in other Italian or foreign universities. The candidate also declares that all the materials used during the preparation of the thesis have been explicitly indicated in the text and in the section "Bibliographical references" and that any textual citations can be identified through an explicit reference to the original publication.

Firma dello studente

Sofia Massarotto

Index

Introduction	1
1 Music industry and digital revolution	7
1.1. Music industry: classification and properties	7
1.2. Defining the music industries	9
1.2.1. Recording industry	12
1.2.2. Music publishing	14
1.2.3. Live performance	16
1.3. A brief historical overview	16
1.3.1. Pre-Internet era: nineteenth and twentieth centuries	16
1.3.2. The Internet era	18
1.3.2.1. The advent of piracy	19
1.3.2.2. The “360 deal”	20
1.3.2.3. iTunes and the single-song download model	21
1.3.2.4. The dematerialisation of music	22
2 The streaming era	25
2.1. The shift to streaming and access-based platforms	25
2.1.1. How to compete with free?	25
2.1.2. From ownership to access	26
2.2. The market for music streaming platforms	27
2.2.1. Main music streaming services	30
2.2.2. Freemium model	36
2.3. Behind streaming success	42
2.3.1. Price	43
2.3.2. Quality	44
2.3.3. Library size, variety and music collection	45
2.3.4. Discovery and personalised experience	45
2.3.5. Accessibility, ease of use and user interface	48
2.3.6. Trends and time	48
2.3.7. Cross-border portability	49

3 The impact of online streaming	51
3.1 General overview of the current music industry	51
3.1.1 Streaming and sales	58
3.1.2 Streaming and piracy	62
3.1.3 Streaming and live music	67
3.2 The interconnection between music, listeners and social media	72
3.2.1 The artist-brand	73
3.2.2 The influence of social media	74
3.3 The power of music streaming platforms	75
Conclusions	79
Bibliography	83

Introduction

The etymology of the term *music* can be traced back to ancient Greek: indeed, it derives from *μουσική* (*mousikè*) to which the term *téchné* is implied. With the expression *mousiké techné* ("the art of the Muses") the Greeks referred not only to instrumental music, but also to poetry and dance and as such it encompassed an array of performances, from entertainment in the private home to elaborate festivals involving an entire *polis*. Relevant is the importance that the ancient Greeks gave to this art, art of the arts, which brings man in touch with the divine, transforming simple air into something that moves souls far beyond the senses, enchanting countless generations since its origin.

Differently, for Theodor W. Adorno¹, philosopher and musicologist of the Frankfurt School, in his meaningful text *On the popular music* of 1941, music becomes a symbol of the decadence of times. Music for the theorist is intrinsically a social fact and can only reflect the political-historical-cultural context from which he comes, which is in itself corrupt. Adorno's sociology of music, in analysing the relationship between music and listeners, therefore, becomes social criticism, pointing out how in the bourgeois society music has been reduced to a mere commodity, whose value is that attributed by the market. Popular music listeners are the perfect model of listener that the cultural industry needs, as they passively listen to any song that is suitably packaged for music consumers. There is no distinction between the different songs-product: everything is so similar that liking and disliking are not linked to a free individual and aware choice of listening but to a mere recognition of the piece:

¹ Horkheimer, M., & Adorno, T. W. (1947). *Dialettica dell'illuminismo*. Einaudi Editore, ed. 2010.

Adorno, T. W. (1941). *Sulla popular music*. Armando Editore, ed. 2008.

Adorno, T. W. (1938). Il carattere di feticcio della musica e la regressione nell'ascolto. *Theodor Adorno et al., La Scuola di Francoforte. La storia e i testi*. Einaudi Editore, ed. 2005.

“[...] the familiarity of the piece takes the place of the value ascribed to it. To like is almost the same as to recognize it.” (Adorno 1938)

Thus, the process for the reception of popular music becomes, for Adorno, very similar to that of advertising: the repetitive re-proposal of the commodity produces masses of consumers who need and demand the same commodity that has been imposed on them. Parallel to this, which we can define with the philosopher’s own words “regression of listening”, a regression of language also occurs:

“Light music and all music intended for consumption [...] seems to complement the reduction of people to silence, the dying out of speech as expression, the inability to communicate at all. [...] It is perceived purely as background. If nobody can any longer speak, then certainly nobody can any longer listen.” (Adorno 1938)

This regression of expressive and understanding abilities contributes to making some contemporary listeners unconscious and not free users, but rather that listens in an automatic and dissociated way.

The power of technological innovation has transformed many existing industries, including retailing, media and entertainment: on the one hand, creating new opportunities, as well as new desires and needs to be satisfied, on the other hand, bringing some new threats and displacing traditional markets. In the twenty-first century, some radical technological advances, such as the MP3 and file-sharing services (e.g. Napster), have threatened the music industry, leading to piracy, intellectual property infringement and, consequently, the reduction of global music revenues and the decline of the physical format. Internet, digital recording and new storage technologies have freed music from physical constraints and gradually moved our music collections from our record shelves to our devices and hard drives.

One of the key milestones of the revolution of the music industry was Apple iTunes, the first successful online service for legal sales and distribution of music, which introduced a new music distribution model, the *single-song download*, transferring the ownership model from physical to virtual context. However, while digital download services, such as Apple iTunes, represent a gradual change to the traditional music distribution logic, other legal music services have been far more radical and ground-breaking, making concepts such as ownership and acquisition almost irrelevant.

The rise of music streaming services and *access-based business models*, that generally offer consumers instant and unlimited access to a huge library of content with a fixed monthly payment rather than purchasing individual music products (i.e. albums or singles), is creating a real evolution of the record industry. Streaming models are one of the most controversial and debated topics in the music industry, considered, on the one hand, the single largest revenue source in the global music industry (IFPI 2020), on the other hand, a potential threat to sales on alternative channels.

Nowadays, the album, i.e. the iconic format not only as a physical object but also from a musical production point of view, has considerably lost ground and is considered an almost obsolete item by the new generations. Music today is listened to mainly in streaming, through platforms such as Spotify which allow, on the one hand, a less intimate and personal listening to the album, on the other hand, greater choice and therefore more flexible. What streaming services offer or, even more, what we really want, is the access where and when we want to a potentially infinite variety of musical pieces and the possibility of reproducing the soundtrack that best suits our days by drawing on the various playlists proposed.

Playlists, the lingua franca of streaming, are the main tools through which music is organised and presented in music streaming platforms, which consist of a collection of songs by one or more artists linked by a common genre, theme, mood or activity. The concept of playlists has completely changed not only listening, but also the way of producing music. Today one of the main trends is to propose singles or short EPs², rather than albums with their own identity concept, and the main goal is no longer to sell the album but to fall into one of the most listened to playlists. Consequently, the piece can boast an autonomous existence and an identity in itself, it is no longer necessary to frame it in the overall narrative logic of an album. This process of music fragmentation also affects the duration of a music track. The remuneration system of the streaming platforms rests on a listening count based on a stream of 30 continuous seconds of listening, so the song must express its identity in an incisive way from its very beginning.

This logic has triggered deep and substantial changes in the structure of new releases. First, streaming's playlist economy has led artists to crank out more and more hits lasting less than two and a half minutes, probably to placate the diminished attention span of online listeners³. Secondly, artists are "front-loading" their songs, cutting or almost deleting the long instrumental intro⁴ that slowly brought the listener into the song (like in *The Final Countdown*),

² According to RIAA (Recording Industry Association of America), an EP (Extended play) is a musical recording that contains from 3 to 5 songs for a total running of less than 30 minutes.

³ Pearce, S. (2018). Considering the rise of the super short rap song. *Pitchfork*, March 15.

⁴ The instrumental part, usually at the beginning of the song, that introduces the lyrics.

reaching the musical point more quickly in the interest of grabbing the fickle listening audience⁵. Furthermore, more and more artists are changing the traditional song structure in order to anticipate the entrance of the chorus, which is often used as a “hook” to catch the ear of the listener, on the one hand, inviting the audience to listen a little more, on the other hand, making the song more repetitive and easier to remember.

In order to be effective and immediately recognisable to the listener, the musical piece must recall a certain standard of composition of the mass culture industry in all three fundamental components of its structure (i.e. *harmony*, *rhythm* and *melody*). The singles, in addition to being shorter, simplify their components, to become immediately *catchy* and attract the attention of listeners.

The increase in the number of artists on the music scene has institutionalised standardisation, both from the point of view of listening and from the point of view of musical writing. The result is a progressive simplification of pop music as well as the continuous repetition of successful formulas. From a harmonic point of view, the standardisation of musical material is reflected both in the particular internal structure of the individual songs, with the obsessive return of the same *chord progression* in each section of the song (intro, verse, chorus, bridge), and in the choice of *tonal functions* recurring in all pop songs⁶, immediately creating in the listener a sense of familiarity with the piece, even at the first listen. From a rhythmic point of view, we can observe the prevalence of some insistently repeated patterns (such as the *tresillo*⁷ of summer hits or contemporary reggaeton) and a clear trend toward faster-paced pop music⁸. From a melodic point of view, in line with mass listening habits that gravitate towards recognition and memorisation, the standardisation is emphasised by the construction of *magnetic* choruses, with the aim of insinuating themselves into the heads of listeners (a phenomenon known as “*earworms*”⁹), and more repetitive song lyrics¹⁰.

⁵ Intros, which averaged over 20 seconds in the 1980s, now last 5 seconds on average (Crane 2017).

⁶ For example, in a major key piece: tonic (I), subdominant (IV), dominant (V), submediant (VI) and less frequently supertonic (II) and subtonic or leading tone (VII).

⁷ The tresillo is a rhythm of African origin brought to Cuba by the Spaniards with the slave trade of the 19th century. It is a rhythmic pattern in which three beats fit in place of two, creating a “syncopated” accent (i.e. an interruption of the regular flow of rhythm).

⁸ A study conducted by Ohio State University found that the average tempo of pop music has increased by 8% over the past three decades, satisfying the need for stimuli that awaken the listener’s attention (Crane 2017). Moreover, according to BBC analysis, the average tempo of the 2020’s top 20 best-selling songs hit 122 beats per minute (Savage 2020). Some studies have brought to light a direct influence of music in manipulating moods, concluding that fast-tempo songs are directly associated with greater energy, movement and dancing, typically associated with a state of happiness (Kim 2015).

⁹ Borella, A. (2015). Quel motivetto nella testa? Ecco perché ci perseguita. *La Repubblica*, November 1. https://www.repubblica.it/scienze/2015/11/01/news/motivetto_musica_bachi_delle_orecchie_earworms_screen_saver_mente-126073603

¹⁰ Many studies have looked at repetition. For example, Nunes et al. (2015) have analysed the effect of repetition, finding a positive effect of greater repetition in song lyrics on processing fluency (defined as the relative ease of processing a stimulus) that makes songs more memorable and likeable. Morris (2017) has examined the

In a music market saturated with releases, where new songs are produced every week, it is increasingly difficult to remain firmly in the high positions of the charts. Many songs survive only a few weeks in the top 100, that is among the hundred most listened to national and international songs, and more and more artists, the so-called "one-hit-wonder", survive the time of a single and then are forgotten.

In a world where capturing and keeping the attention of the audience is increasingly difficult, the artist-brand concept is gaining ground as a platform for building loyal and profitable relationships between fans and artists. The role of merchandising, the basic tool of the artist's cult, fits into this context. Created as a promotional tool, today merchandising has evolved into a real brand closely connected to the world of fashion (especially for pop stars), becoming one of the main sources of income for artists as well as a fundamental choice to compensate for the losses generated by the crisis in the physical market and the temporary postponement of live concerts due to the Covid-19 global pandemic. Today the boundaries between merchandising and the world of fashion are becoming increasingly blurred: the "tour merch" is no longer an obsession for memorabilia but, especially for the younger generations, it is a desire to own or wear something authentic to show off, on the one hand as a distinctive sign of their own identity, on the other as a fashion item in line with trends.

Before the Covid-19 global pandemic, the music industry seemed to be on track to recover from the long slump that has plagued the recorded music industry, thanks to the advent of music streaming and the strong growth experienced by the live music industry. Suddenly, streaming platforms take on additional responsibility: with music events and concerts being postponed or cancelled, artists increasingly rely on income from streaming platforms, which are offering financial assistance to support the music community during these difficult times. At the same time, the music industry is looking for new ways to monetize music consumption, for example by "setting up" virtual concert-events within video games, as in the case of Travis Scott's recent performance in Fortnite¹¹.

The following pages were created with the intent of analysing the current state of the music industry by focusing the investigation mainly on the changes produced by streaming platforms.

repetitiveness of a dataset of 15,000 songs that charted on the Billboard Hot 100 between 1960 and 2015, through compression (applying the Lempel-Ziv compression algorithm). His analysis shows a clear trend towards more repetitive songs from 1960 to 2015, turning out that the repetitiveness of lyrics increases every 10 years, peaking in 2014, also illustrating that the songs that reached the top 10 on the Billboard chart are, on average, more repetitive than the rest.

¹¹ Shanley, P. (2020). Travis Scott's "Fortnite" in-game concert draws more than 12M concurrent viewers. *Billboard*, 27 April. <https://www.billboard.com/articles/columns/hip-hop/9366303/travis-scott-fortnite-in-game-concert-draws-12-million-viewers>

The first chapter presents an overview of the music industry. After retracing the various definitions attributed to the music industry, its segments will be defined, arriving at the most shared subdivision (*recording, publishing and live music*). We will then move on to the presentation of some conceptual models that have tried to illustrate the dynamics between these three areas, mainly representing the music industry of the twentieth century, laying the foundations for a more purely historical view on the evolution of the music industry.

The second chapter focuses on music streaming. After trying to account for the economic, social and cultural impact of these platforms, the streaming market will be analysed, considering the main players in the market and business models. Particular emphasis will be given to the *freemium*¹² model, adopted by more than half of the main music streaming services, which includes a basic core ad-supported version of the service for free and a premium subscription version with additional benefits, trying to illustrate some theoretical models that have contributed to the related literature. Finally, some success factors of these services will be defined: price, quality, size and variety of the music library, discovery and personalised experience, accessibility and ease of use, trends and time, cross-border portability.

The third chapter, after illustrating an overview of the current state of the music industry and a snapshot of listeners' music consumption, will present the impact of streaming, today the largest revenue source in the global music industry, on sales, piracy and live performances, through a survey of the related literature, looking then at the changing relationship between music-listeners-social media and at the changing power of streaming platforms also through the lens of playlists.

¹² Term coined as a combination of the words free and premium.

Chapter 1

Music industry and digital revolution

This chapter will present an overview of the music industry, outlining its various definitions and its main segments, thus arriving at the most shared subdivision (*recording, publishing* and *live music*), then trying to illustrate the dynamics between these three areas through some conceptual models that mainly represent the music industry of the 20th century. A brief historical overview is then introduced, retracing the changes that led, firstly, to the dematerialisation of music with the advent of piracy and secondly to the unbundling of music content with iTunes.

1.1 Music industry: classification and properties

The music industry has been categorised in many ways. Horkheimer & Adorno, in their most important work “*Dialectic of Enlightenment*” of 1947, address the “*culture industry*” and point out the process triggered by the industrial production of reducing culture to a mere “commodity”. Instead of promising freedom from society-dictated uses, therefore having a genuine use value that people can enjoy:

“Everything has value only in so far as it can be exchanged, not in so far as it is something in itself. For consumers, the use value of art, its essence, is a fetish, and the fetish – the social valuation which they mistake for the merit of works of art – becomes its only use value, the only quality they enjoy.”¹³

¹³ Horkheimer, M. & Adorno, T. W., (1947). *Dialettica dell'illuminismo*. Einaudi, ed. 2010, p.171

It is only in the post-Beatles era that the identification of a number of related industries begins to emerge from academic studies (Williamson & Cloonan, 2007). Indeed, the term has been revised and changed in “*cultural industries*” to stress the existence of different cultural industries and criticise for the pessimistic position on the commodification of culture (Miège 1979; Girard 1981). Looking at Hesmondhalgh’s list, the “core cultural industries” are broadcasting, film industries, music industries, print and electronic publishing, advertising and marketing, video and computer games (Hesmondhalgh, 2013).

Several other alternative terms have been suggested to define the same industries, such as “*creative industries*” (Caves 2000; Hartley 2007) and “*experience industries*” (Pine and Gilmore 1998), but these definitions are far too inclusive and comprise also other industries such as advertising, architecture, design, fashion, performing arts, crafts, software and videogames, tourism, airlines, sports and restaurants. The Creative Industries were defined by the UK Government’s Department for Culture, Media and Sport (DCMS)¹⁴ as “those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property”. Differently, the term “experience industry” emphasises how an activity is designed and executed to deliver a memorable customer experience.

Finally, the World Intellectual Property Organization (WIPO)¹⁵ defines the music industry as one of the “core copyright industries”, highlighting the nature of the products that are created, manufactured, produced, broadcasted, distributed and traded within the industry. Included in this group of industries are press & literature, music, motion picture & video industries and software & databases industries. Four main properties characterise the products traded in copyright industries (Wikström, 2020). First, they are classified as *information goods*, i.e. goods that provide value to consumers as a result of the information they contain (Vafopoulos, 2012), defined by Shapiro and Varian (1998) as anything that can be digitised (such as books, databases, magazines, movies, music, web pages, etc.). Specific terms and conditions of use govern how the consumer is allowed to use an information good. A sound recording, for instance, has what is often referred to as “option value” (Shapiro and Varian, 1998). A song heard on the radio¹⁶ has a lower option value than a song distributed via a streaming platform, that is, the latter (with a subscription plan) has slight restrictions on the consumers’ ability to

¹⁴ <https://www.gov.uk/government/publications/creative-industries-economic-estimates-january-2015/creative-industries-economic-estimates-january-2015-key-findings>

¹⁵ World Intellectual Property Organization (2005). Copyright-based Industries: Assessing their weight. *WIPO Magazine*, issue 3/2005. https://www.wipo.int/wipo_magazine/en/2005/03/article_0012.html

¹⁶ The music selected via radio stations is not selected by the listener, but a Disc Jockey (DJ).

use the product, allowing them to exercise the option to play a song where, when and how many times they want.

Secondly, copyrighted products are *experience goods*, as they are closely linked to time and consumers have to experience them to evaluate and identify which products are worth their attention (Shapiro and Varian, 1998). As stated by Hirsch (1969), pre-selection systems are often introduced in these industries to filter the available products:

“In all such industries, the number of already available goods (or candidates) far exceeds the number that can be successfully marketed. More goods are produced and available than actually reach the consumer. Subsequent to their production, these are processed by a selection system which filters the available products, ensuring that only a sample of the available ‘universe’ is ever brought to the attention of the general public.” (Hirsch 1969, p.5)

Thirdly, a common feature of copyrighted industries is the unpredictability of success (Picard 2011; Hesmondhalgh 2013), that is, the difficulty in forecasting whether a new product will be successful or not, resulting from changes in the taste and habits of the audience. As Hesmondhalgh observed: “fashionable performers or styles, even if heavily marketed, can suddenly come to be perceived as outmoded and, equally, other texts can become unexpectedly successful” (Hesmondhalgh 2013, p.27). This risk is reduced through a diversification strategy, with investments in several diverse markets and products, attempting to create a broad catalogue.

Finally, copyright industries are characterised by high fixed costs of production but low reproduction costs, which means that once the first copy is made, the costs of reproducing additional copies are negligible (Shapiro and Varian 1998, p. 21). This cost structure “leads to substantial *economies of scale*: the more you produce, the lower your average cost of production” (Shapiro and Varian 1998, p. 21).

1.2 Defining the music industries

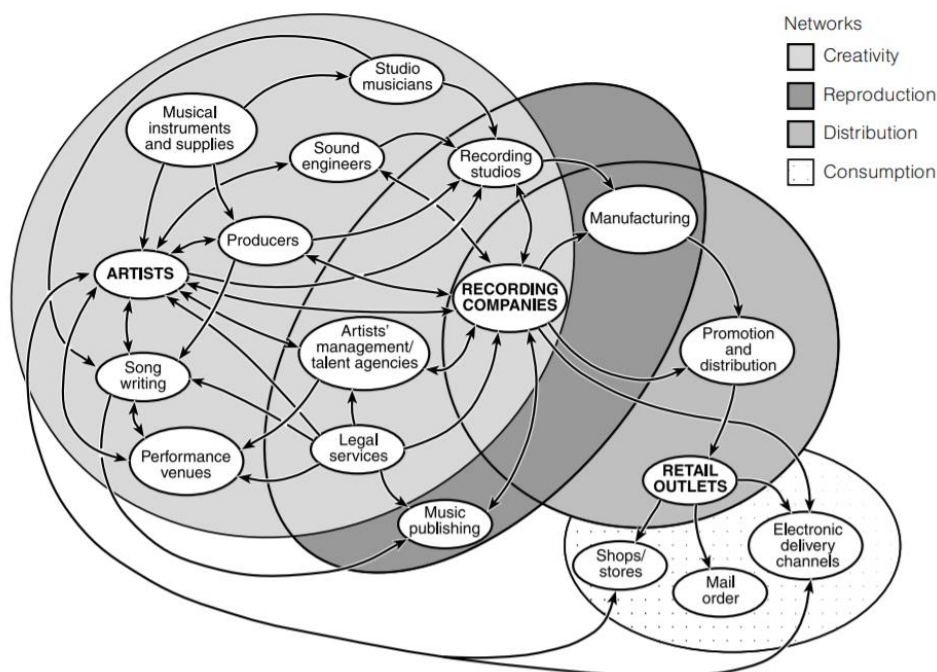
Williamson & Cloonan (2007) argue that the term “music industry” is often used in ways which imply that the industry is “a homogeneous unit with shared objectives and interests”. However, the reality is that this image is now obsolete and inaccurate, as it does not convey the complexity of the organisational structure of the global music economy.

A large number of reports examine the music industry providing interesting insights into the complexity of this industry and several attempts have been made to define and structure its different parts. The report by British Invisibles (1995) on the *Overseas Earnings of The Music Industry* identified five areas of earnings: recording industry; music publishing; performing; musical instruments; musical theatre and miscellaneous. *Counting the notes*, the 2002 National Music Council (NMC) report, reflects the steps by which value is created within the UK's music sectors and describe the music industry through seven sectors: composition of musical works and music publishing; musical instruments; promotion; live music performance; recording industry; music retailing and distribution; education and training. However, the most shared subdivision seems to be that of Hesmondhalgh, who considers the music industry to be composed of three parts: *recording, publishing and live performance* (Hesmondhalgh 2013, p.17).

Several scholars have tried to explain the dynamics between the different parts of the music industry and its actors, often presenting some kinds of conceptual industry models.

The model suggested by Leyshon (Figure 1.1), illustrates that the music industry consists of four overlapping and interconnecting networks, through which music “flows and undergoes a process of commodification”. These networks are as follows: network of *creativity*, network of *reproduction*, network of *distribution* and network of *consumption*.

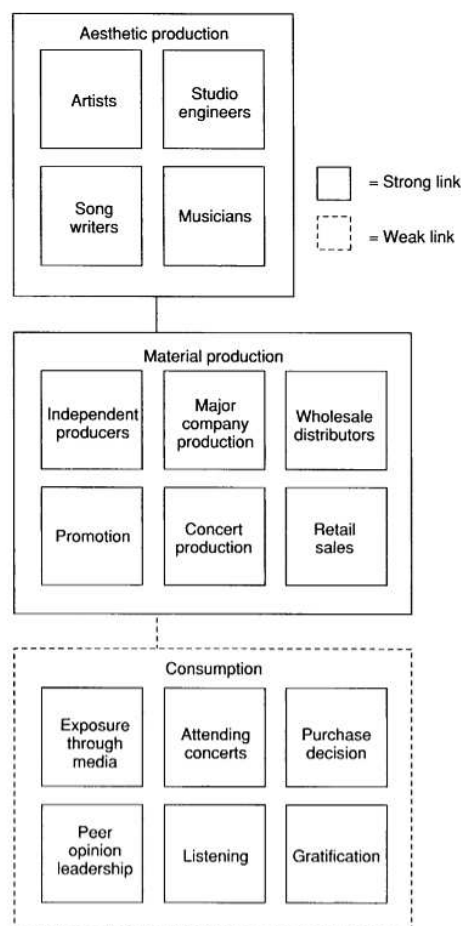
Figure 1.1. Musical networks (Leyshon, 2001).



Music is created, performed and recorded within the network of creativity through dense interactions between a relatively large number of actors with different skills and competencies, then it is packaged in in the network of reproduction (traditionally in physical formats, but today also in digital format). The finished product then enters the distribution network, moving towards retail outlets, and is promoted through several media channels to reach the audience. This model gravitates around the contract between the artist and the record company and the latter plays a central role as it coordinates all the different activities and controls the reproduction and distribution processes.

Burnett suggested a model that illustrates two “loosely coupled systems” (Figure 1.2) to analyse the dynamics of the music industries, where “loosely coupled” refers to systems in which “interactions within subsystems are substantially stronger than interactions between subsystems” (Burnett 1996, p.69).

Figure 1.2. Production and consumption systems of popular music (Burnett, 1996).



This model consists of more or less the same components as Leyshon’s model and identifies the *production system* (aesthetic and material) and the *consumption system*. The links and

connections *within* the production system (both aesthetic and material) are stronger than the relationships *between* production and consumption, i.e. producers and consumers. However, it should be remembered that nowadays advertising strategies, such as "targeting" and "retargeting" of banner ads, are more invasive and at the same time stronger and more bi-directional. According to Burnett, the consumption system is also made up of a series of weak links, but perhaps we should update this point considering that today music consumers interact more and more via social media and music platforms.

The following paragraphs will look in more detail at the three components of the music industry: recording, publishing and live performance.

1.2.1 Recording industry

One of the most influential models of the recording industry, developed by Peitz & Waelbroeck (2005), identifies three main players (artists, record companies and retailers) and recognises the central role of record companies, which act as intermediaries between music producers and consumers.

Another model was developed by Hirsch in 1969 (Figure 1.3) with the aim of explaining how music becomes popular. In 1950, the advent of television radically transformed radio programming. "Top 40", the new radio format in the US, played the forty most popular songs¹⁷ during a certain week according to the most reputable music industry trade papers. Hirsch describes a dependent relationship between record labels producing music aimed for the "Top 40" and commercial radio stations.

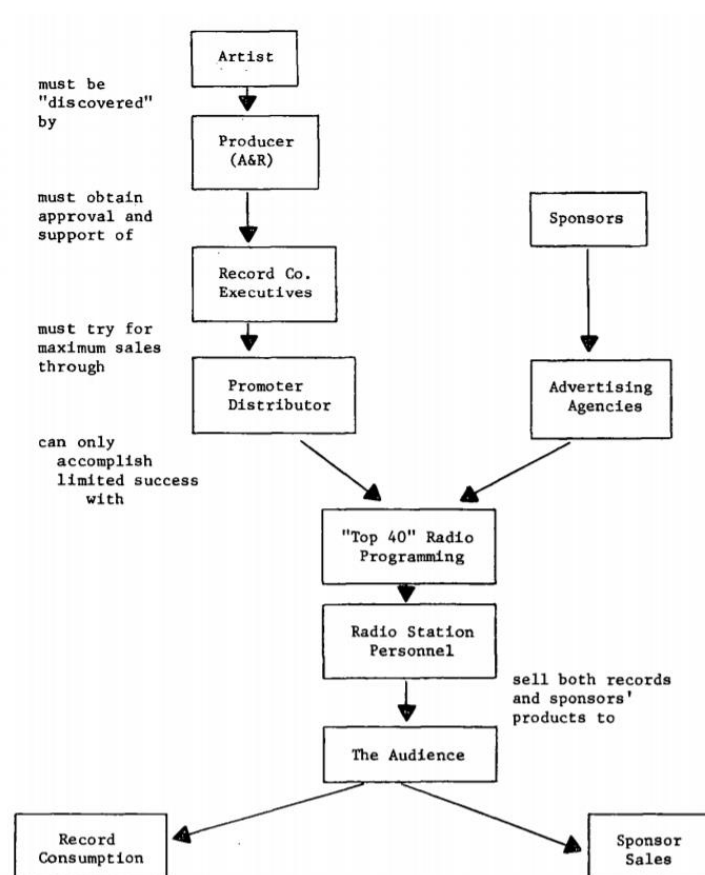
"The record and radio industries have grown up together and live in a symbiotic relationship. Each plays an important role in the dissemination and popularisation of culture; both have affected its form and its direction. Though mutually dependent organizations, their goals vary, and oftentimes conflict" (Hirsch 1969, p.10).

The model explains how songs and artists are filtered at each stage of the preselection system. Hirsch identifies four sub-systems that the artists have to pass through to reach the final sub-system (the audience):

¹⁷ That is, the songs that had sold the most during the previous week.

- The combined efforts of artists, producers and Artists & Repertoire (A&R) agents constitute the first sub-system: the *creative* sector. “The success of every performing artist is closely tied to the number of his records that come to the attention of and are purchased by the public. Records are the means by which an artist gains or enlarges his popular following.” (Hirsch 1969, p.25). The A&R division of a record label represents the first strategic step in the pre-selection process and is responsible for talent scouting, i.e. finding new promising artists. Because the life of a “hit” record is extremely short, its work becomes essential to fuel the “replacement” process: “replacements are needed for those items currently on the charts. [...] The styles in vogue change rapidly and unpredictably” (Hirsch 1969, p.25).
- Record company “policymakers” constitute the second sub-system. They have the task of selecting the record to be released from the output of the creative sub-system. However, this choice is mainly based on economic factors, as record companies have little control over the media and, therefore, little power to ensure the exposure of a particular release.

Figure 1.3. The organisation of the recording industry (Hirsch, 1969).



- The third sub-system consists of promoters and distributors, who filter the output of record companies by selecting the songs that (hopefully) have the best chance of commercial success.
- The fourth sub-system is referred to as the “gatekeepers”, by which Hirsch primarily refers to radio stations that broadcast songs, but the principle can be extended to other media and sales channels, including digital stores, modern day music platforms and their playlists.

1.2.2 Music publishing

While the recording industry is a business-to-consumer industry, music publishing is a business-to-business industry, not in direct contact with the audience. Its primary responsibility is to collect the license fees (which must be paid when a song record/composition is used in whatever context) and distribute them equally among composers and lyricists. The latter engage a publisher to license their works for different purposes, such as traditional recordings, sheet music, live performances or background music in video productions.

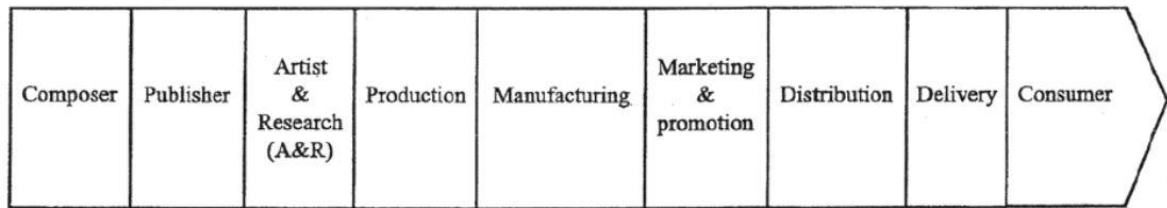
Generally, three categories of royalties are distinguished:

1. *Mechanical royalties*, which are the combination of reproduction and distribution rights and derive from sales of sheet music or recorded music.
2. *Performance royalties*, which are paid when a song is performed live by an orchestra or a singer, broadcasted by a radiostation, used by online services, played in bar and restaurants, etc.
3. *Synchronisation royalties*, which are required when a song/composition is incorporated in audiovisual works, for example, when it is used in movies, television programs, videogames, etc.

However, this classification is not the only one and there is no universal approved classification.

Figure 1.4 shows a music industry value chain. Music content must be produced, manufactured, reproduced and distributed in order to reach consumers. This model shows how a composer creates a musical work and signs an agreement with a publisher. Nevertheless, it has some limitations, in fact, there are also other opportunities and revenue sources available to the composer who does not want to get involved with a record company and aims to distribute a recording to the audience.

Figure 1.4. A music publishing industry value chain (Wallis, 2005).



If once a contract with a record company was essential to “live with music” and there was only one distribution model, according to Byrne (2014), we can now identify a spectrum of six distribution models with different levels of control by the artist: from the one in which the artist puts himself completely in the hands of the record label, to the one in which the artist does almost everything on his own.

1. *The “360 deal”*. The artist can obtain a wide distribution and significant sales because there is a powerful machine that supports him, takes care of every aspect and strives to make a profit from whatever it does (Section 1.3.2.2). In many cases, this means that “the machine” keeps a substantial percentage of every sale for itself. The artist becomes a brand, owned and managed by the company.
2. *Standard royalty agreement*. In this model, the record company finances the recording and manage the press, distribution, relations with journalists and promotion, with the artist receiving a percentage on album’s sale. The label does not participate in the profits of concerts and merchandising. The record label owns the copyright of the recording.
3. *License agreement*. This type of contract is very similar to the standard one, but in this case the artist retains the copyright and ownership of the master and licenses the label (usually for a period of seven years) the right to exploit the recording. In this period, the revenues from the granting of this master to television shows, advertising campaigns, etc., are divided between the artist and the record company, after which the rights (and revenues) of use return to the artist. In this case, the artist is expected to pay the master/album registration fees and deliver a more or less finished product, thus gaining artistic freedom, however, the price to pay is that the label may be less incentivized to invest to turn the record into a success.
4. *Profit sharing agreement*. The artists and the record company each own 50% of the master, that is, everything is divided, even album’s production expenses (unlike the license agreement).
5. *Production and distribution agreement*. The artist takes care of almost everything (registration of the master, marketing and promotion) except the production and

distribution of the record, which are tasks assigned to record labels. The artist acquires, on the one hand, absolute creative control, on the other hand, a greater risk, bearing most of the expenses.

6. *Self-distribution*. Everything remains under the control of the artist. Generally, it means that the album is printed in limited quantities and then sold at concerts or via a web page. Often, this approach is integrated with other types of agreements, for example, a production and distribution agreement for the physical album and a self-management for the download.

1.2.3 Live performance

Due to the variety of live performances, the live music industry is a miscellaneous and complex system (Byrne, 2014; Wikström, 2020), where most of the attention is captured by superstar events. Indeed, live music is a top-heavy industry (Wikström, 2020) wherein a small number of big projects, i.e. the largest and most spectacular global tours, and a relatively small number of people, i.e. “superstars” (Rosen, 1981), represent a large percentage of the total industry.

The live music sector has historically been secondary to the recorded music sector in terms of revenues, but when the latter dropped due to unauthorised file-sharing at the beginning of the twenty-first century, live music became the largest music industry sector. The balance between live music and recorded music has shifted and revenues from live music have soared, at least until the Covid-19 global pandemic (see Section 3.1 for a detailed overview of the current music industry). One possible reason is that live music is perceived as a special kind of experience particularly intense, spontaneous and surprising, which stands out of our everyday listening (Kjus & Danielsen, 2014).

1.3 A brief historical overview

1.3.1 Pre-Internet era: nineteenth and twentieth centuries

Music constantly changes. Through the ages, the balance between the three core music industries - *recording*, *publishing* and *live performance* - has fluctuated. Before the twentieth century, the music industry consisted of only one of the three segments (the live performance) and listening to music was a temporal, fleeting experience that typically took place in churches,

monasteries and royal courts. With the evolution of printed technology, sheet music made its way and became a second musical product.

The new sound recording technologies (such as the phonograph) developed during the later years of the nineteenth century, primarily by Thomas Edison¹⁸ and Emile Berliner¹⁹, brought music home and changed the core product of the music industry. Initially, pioneering gramophone companies considered musical content as a mere means for promoting the sales of their machine, but during the first years of the twentieth century the focus gradually shifted from hardware to musical content. These companies set up departments dedicated to the research and development of new musical personalities. The core capabilities that today define a record company have their roots in these decades.

Since the roaring twenties, the music industry has been characterised by tough competition and several entries, mergers and exits. Radio broadcasting had been introduced in the 1920s and by the end of the thirties had spread widely in the industrialised parts of Europe and America, revolutionising popular music and allowing consumers to hear music that they did not own.

In the period 1950s-1960s, the growth of television medium forced radio stations to revise their programming to face the competition from the new medium: radio turned to music and became the music firms' most important promotional tool. According to Hirsch's preselection model (Figure 1.3), record companies "pushed" their music to radio stations in order to encourage the audience to purchase their music at the record stores. In the early 1950s, the major record companies were set up as a hierarchical organisational structure, thus crucial decisions regarding artists and products were made by the "top" of the organisations, who were more interested in promoting their own established talents rather than to look for new artists and new sounds, such as rock 'n' roll and rhythm 'n' blues.

To deal with changes in the audience's preferences, collaborations between majors and indies for the development of new sounds and talents emerged in this era²⁰ and evolved during the 1970s. The majors realised that indies were more efficient at finding new artists and genres and with "upstream" deals the majors had the option of acquiring contracts with promising talents, or of entering into partial ownership with the label, or sometimes even acquiring the label altogether (Wikström, 2020). Later, the major music companies learned that it was better to give a significant level of freedom to the acquired smaller label rather than dissolving the

¹⁸ Thomas Edison invented the phonograph in 1877. This pioneering sound-reproduction machine did not spin a turntable (there was no disc) but a can-sized object called a cylinder. It was primarily meant to make and play recordings, thus an office dictation machine and not a music player.

¹⁹ Emil Berliner invented the disc phonograph, later called the gramophone, in 1887.

²⁰ Such as RCA's acquisition of the Elvis Presley contract from Sun Records in 1953 for \$35,000.

entity. A great example is Warner Communications and the formation of Warner Records through acquisitions and alliances with almost thirty record labels, which allowed the major to decentralise the creative decision-making and quickly adapt to changes in the audience's preference, leading to the discovery of new music genres such as disco, metal, grunge, rap, hip-hop, etc.

The advent of the CD in 1982, which was the dominating music distribution format for nearly twenty-six years, generated unprecedented growth in worldwide sales of recorded music and the replacement of the old vinyl record. We can say that with the Compact Disk there was a first transition to digital, although a physical format still remained.

In the 1990s, several recording and physical distribution technologies²¹ tried to replicate the success of the CD format but without particular success. At the beginning of the twenty-first century, the strategic scouting activities carried out by the majors were gradually reduced to be performed almost exclusively by smaller record companies.

As we have seen, by the mid-twentieth century the recorded music industry was the biggest of the three and the one that generated the most revenues. Most aspiring artists and bands struggled to sign a contract with a record label and enter their international distribution system. Music licensing was much smaller and guaranteed the collection of licensing fees when a song was used in whatever context and the fairly distribution of these fees among composers and lyricists. Live music generated its revenues from sales of concerts tickets; although its longer history, it was undoubtedly subordinate to record sales and concerts tours were considered by record labels as means to promote the music industry's most important product, i.e. the recording.

However, a new "format" marked the beginning of the end of the traditional music economy and the decline of the available physical formats.

1.3.2 The Internet era

The power of technological innovation has always shaped music, on the one hand, creating new challenges and opportunities, on the other hand, bringing some new threats.

The 2000s saw how the Internet has completely transformed the way music is distributed and experienced. One of the most pivotal technologies is the MP3, a key enabler in the rise of

²¹ For example, Sony's MiniDisc (MD) launched in 1992.

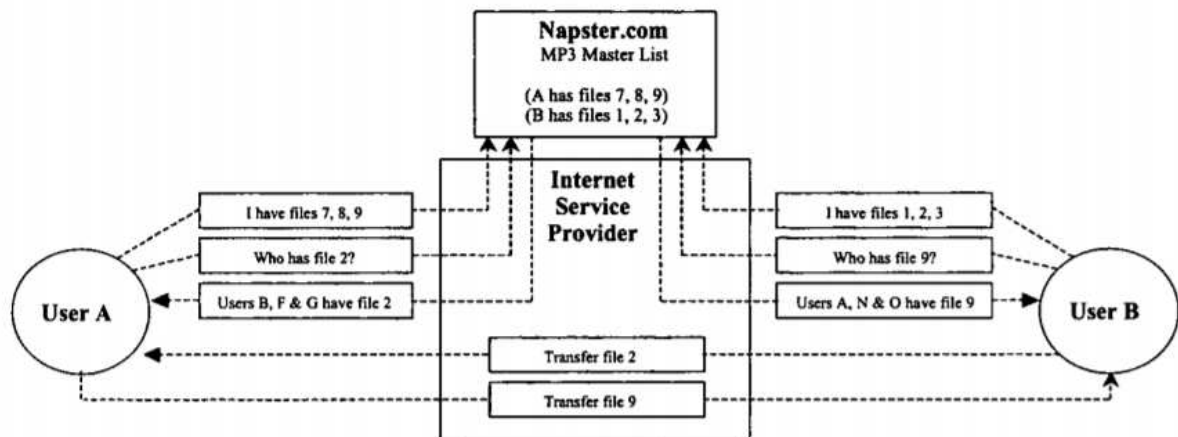
Napster, piracy and illegal digital distribution, which significantly reduced global music revenues, from \$23.8 billion in 1999 to \$14.3 billion in 2014²².

1.3.2.1 The advent of piracy

In 1999, Shawn Fanning developed an unsanctioned file-sharing service called Napster that allowed users to download and share MP3 music files for free (Figure 1.5). This competing superior “format” outplayed all other physical formats available at the time and contributed to the decline in global physical sales of recorded music.

The recording industry was severely affected by the Internet’s impact on intellectual property rights and the consequent loss of control over music distribution. The Recording Industry Association of America (RIAA) has expended substantial energy to fight the rampant online piracy and on December 6, 1999, filed a lawsuit to block Napster from allowing the illegal copying and distribution of copyrighted songs. On April 13, 2000, the heavy metal band Metallica filed a lawsuit against the popular service, blaming Napster for “contributory and vicarious copyright infringement” and racketeering²³. These lawsuits were followed by similar suits from other artists, such as Dr. Dre, leading to forced Napster shutdown in 2001.

Figure 1.5. Napster operating model (Berschadsky, 1999).

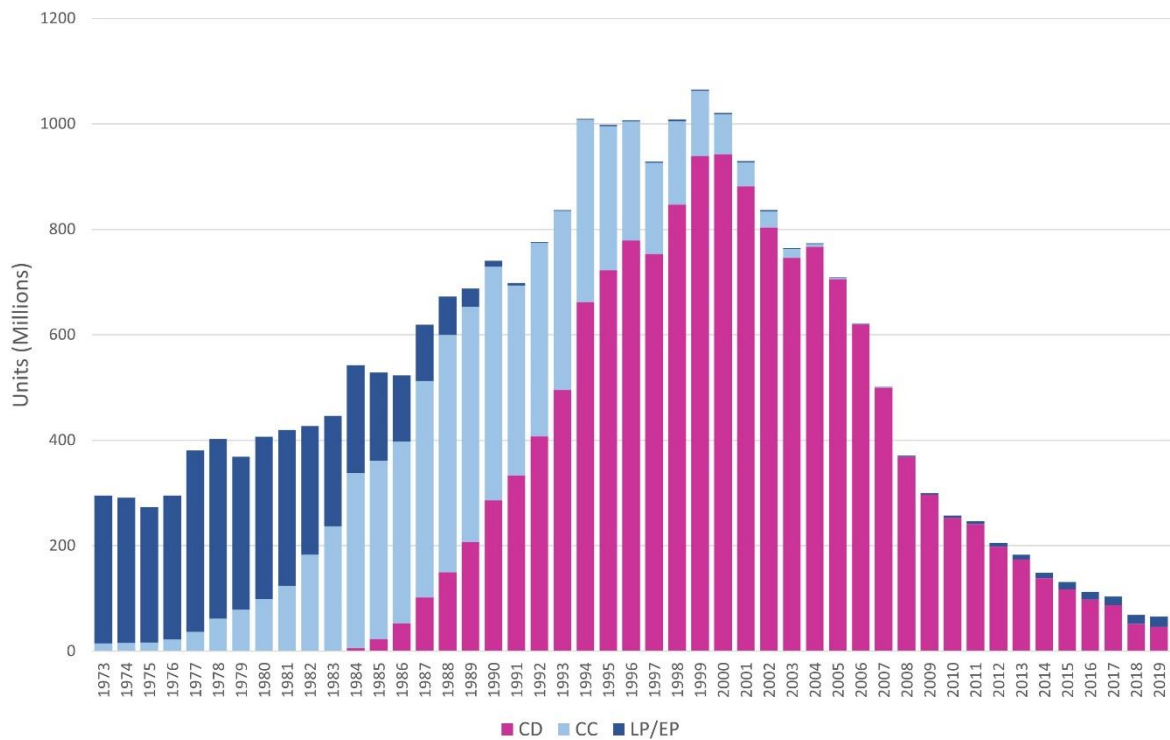


Despite Napster shutdown, the music industry failed to stop the explosion of online-piracy services that will continue to spread through new and more sophisticated P2P software, like eMule and BitTorrent.

²² <https://www.goodwatercap.com/thesis/understanding-spotify>

²³ Metallica discovered that a demo of their song “I Disappear”, set to be realised with the “Mission Impossible II” soundtrack, has been circulating across the network before its release.

Figure 1.6. U.S. physical music unit sales by format, 1973-2019 (RIAA).



In less than a decade, the MP3 established the decline of the physical format (Figure 1.6). As a result of the declining levels of record sales during the 2000s, rather than having a large number of nearly independent labels within the organisation competing against each other, the majors restructured their organisations into larger groups of well-coordinated labels to increase internal efficiency and share corporate resources and processes (Wikström, 2020).

1.3.2.2 The “360 deal”

The first two decades of the twenty-first century were challenging for the recorded music industry and only three of the five major record labels (EMI, BMG, Sony, Warner, Universal) that entered the new millennium were able to survive the hardships (Universal, Warner and Sony). In response to piracy and dropping in CD sales, the balance slowly shifted to the other two sectors - music publishing and live music – and traditional record labels were pushed to reinvent themselves and the ways they negotiated contracts with their artists to compensate the lost revenues from recorded music.

They turned into “360-degree music companies”, placing equal emphasis on all three music industry segments and receiving income from a range of musical activities beyond the sales of recordings, such as live performances and merchandising. With the “360 deal”, music companies serve as general business partner to artists and composers, managing their complete

portfolio, from recordings to live performances, merchandising, rights from online services and radio plays, synchronisation, etc., showing that the boundaries between the three industries are no longer clear but blurred.

The most publicised 360 deals have been concluded not by labels but by Live Nation Entertainment (LNE), the world's largest music company since the Internet transformation of the music industry. LNE was formed in January 2010 through the merger between the ticket sales company Ticketmaster Entertainment and the concert producer Live Nation, which was previously spun off from Clear Channel Communications. It is a vertically integrated company which operates in the following main industries within the live entertainment business: live music events, music venue operations, provision of management and other services to artists, sponsorship and advertising sales, and ticketing services. Live Nation Entertainment is the world's leading promoter and during 2019 was involved in more than 40,000 events for over 5,000 artists - including Metallica, Ariana Grande, Bon Jovi, P!nk and Backstreet Boys - and sold over 485 million tickets to various live music events. In 2019 the company generated \$11.5 billion in revenues from its main business areas.

1.3.2.3 iTunes and the single-song download model

The spread of MP3 and the increasingly widespread Internet network led to the development of new business opportunities and distribution channels. One of the key milestones of the musical revolution was Apple iTunes, the first successful online service for legal sales and distribution of music, which transferred the ownership model from the physical to the virtual context.

The iPod music player and the music service iTunes were a radical change for the music industry in many ways. As Steve Jobs said, “with iPod, Apple has invented a whole new category of digital music player that lets you put your entire music collection in your pocket and listen wherever you go”²⁴. On the other hand, iTunes introduced one of the most successful music online retailing models, the “single-song download”, and offered music catalogues from all the major music companies, presenting itself as a complete platform with a huge database constantly updated. A new distribution model was born which identified iTunes as the main intermediary between consumers and record labels. Furthermore, for the first time, consumers were given the choice “to unbundle” the album, which had been the fundamental unit of measure for the music industry since the introduction of the LP format in 1984. The future of the album is still debated but, in most cases an album is still an irreplaceable piece of an artist's

²⁴ <https://www.apple.com/newsroom/2001/10/23Apple-Presents-iPod/>

repertoire and it is the product around which concerts, tours, sponsorships and merchandising are often built (Olivier 2018).

However, the launch of iTunes brought other long-term consequences beyond the single-song download model. All songs on iTunes were sold for a variable price (between €0.69 and €1.29) and aggregate revenues from sales were split 30/70 among Apple and rights holders, which has since become the revenue sharing template for most online music retailers. Further, iTunes was intrinsically connected to Apple's business and used a proprietary protection technology, called Fairplay DRM (digital rights management), which restricted consumers from playing purchased files on any portable device other than Apple iPod. Therefore, in order to switch to a non-Apple music player, consumers were forced to re-purchase their songs and build their music libraries all over again. This business strategy known as "lock -in" aims at making difficult and expensive for customers to switch to other competing technologies once they have chosen one.

1.3.2.4 The dematerialisation of music

The French economist, scholar and government advisor Jacques Attali in his work "*Noise: the political economy of music*" clearly forecast the unique and constantly evolving relationship between music and technology, a relationship described by Robert Friedel as "a pattern of constant change" (Friedel, 2007).

Internet, digital recording and new storage technologies have freed music from physical constraints. Music has been liberated "from the last link to Edison's era: the dependence on physical, recorded media that has long confined it" (Mock, 2004). In the age of digital distribution, MP3 files are assimilated to "*songs*" and technological devices evaluated on the number of songs they can contain, becoming "*container technologies*" (Sterne 2006, p. 827).

The dematerialisation of music has changed its consumption and removed the use of touch in choosing with care which record to buy and the pleasure of curating our music collection as identity marker. The album was considered a relatively expensive item and physical music collections, such as vinyl or CDs, were "sweaty" and created with effort. Creating your own music collection took time and money. Buying an album meant going to the store, carefully evaluating a wide range of products available and, possibly, talking to the sales assistant.

For these reasons, music albums held a central place in our heart, as a mirror of our soul, and in our home, placing them in wooden cabinets or shelves to be admired. Furthermore, the purchased albums were "studied" and played so many times that one ended up learning them

by heart. Buying an album, especially those produced by independent labels, gave the perception of supporting the artist or band with our choices and savings, developing a sense of strong loyalty to the artist.

As Philip Sherburne notes, our music collections have gradually shifted:

“the ongoing dematerialization of music (or perhaps a better term would be ‘micro materialisation’ since even mp3s live in silicon, invisible as they may seem). More and more, our collections exist not on our record shelves, but in our iPods and hard drives.”²⁵

While digital download services, such as Apple iTunes, introduce a gradual change to the traditional music distribution logic, other legal music services will be far more radical and ground-breaking.

Despite being an integral part of the Internet-era, streaming and access-based services will be addressed in the next chapter, thus seeking to give greater emphasis to the revolution created by this technological innovation.

²⁵ Sterne, J. (2006). The mp3 as cultural artifact. *New media & society*, 8(5): p. 831, quoting Sherburne, P. (2003). Digital DJing app that pulls you in. *Grooves*, 10 (1): p. 46.

Chapter 2

The Streaming era

This chapter concludes the historical overview begun in the first chapter, focusing exclusively on music streaming. After describing the shift to streaming, the market will be analysed considering the main streaming services and business models (subscription based, ad-supported and *freemium*), trying to illustrate some theoretical models that have contributed to the related literature. Moreover, some success factors of these services were defined: price, quality, size and variety of the music library, discovery and personalised experience, accessibility and ease of use, trends and time, cross-border portability.

2.1 The shift to streaming and access-based music platforms

2.1.1 How to compete with free?

Despite the iTunes success, total revenue from recorded music models continued to decline as the single-song-download model was not able to outplay the free file-sharing platforms, relatively easy to find with just a few clicks.

The concepts “*pain of paying*” (Zellermayer, 1996) and “*mental transaction costs*” (Szabo 1999) can be introduced to explain why single-song-download models struggle to compete with free. In our daily lives we are constantly faced with the decision of whether or not to buy different goods and services. As research from behavioural economics suggests, when making a transaction, consumers usually experience an immediate “pain” associated with the act of paying, raising fundamental barriers to the consumer’s price acceptance. Even though the prices

charged by iTunes may seem to be an insignificant amount, the free availability makes an average price of 99 cents unacceptable.

One way to approach this challenge is based on the concept of “*ex post facto crowdfunding*” which is similar to a “digital tip-jar” (Kappel 2009, p. 377), where money is raised for a product that would often be available for free anyway. This method of capital formation has been increasingly used in the music industry, recognising that listeners value songs or performances differently and asking them to choose between gratuity or donation.

One of the first tip jar model experiments was launched by one of the world’s most successful rock bands, Radiohead, which in 2007 allowed consumers to determine the price they were willing to pay for the download of the newly released album “In Rainbows” (including a free option). According to the study conducted by the Internet market research company comScore, approximately 38% of global downloaders of the album paid on average \$6 per download, with the remaining 62% chose to pay nothing. The experiment lasted two months and with the album released via traditional channels, it experienced a huge success climbing the international charts.

The access-based music business model has further transformed the music economy.

2.1.2 From ownership to access

In the pre-internet and internet-era music has been considered a product: it may be an album or a single track, a physical or digital format, but it remains something that music listeners can purchase with care, own, collect and consider personal.

The digitalisation of music has led to a loss in the perceived sense of ownership and “intimacy” we have with music. It has removed the use of touch in choosing with care which record to buy and the pleasure of curating our music collection as identity marker.

In the age of digital distribution, where music consumers are able to download hundreds of tracks without paying and keep thousands of songs on their laptops, institutions such as ownership and collection become increasingly irrelevant.

These changes have been amplified further by streaming platforms which adopt business models that propose music as a service rather than a product. Music streamed through these services is not durable: the music experience is temporary and does not convey ownership, as songs played on streaming platforms disappear once the subscription has expired.

The new *access-based* business model was launched for the first time in 2001 by Rhapsody (renamed as Napster in 2016), an online music subscription service that allowed its subscribers

unlimited on-demand access to a large library of digital music for a flat monthly pay. A number of start-ups have followed Rhapsody's lead, – such as Deezer, Groove Music, Rdio, Simfy, Spotify, WiMP (renamed as Tidal in 2015) – some of them have successfully survived and, among them, Spotify has become one of the most promising companies, able to lead the segment.

Spotify was founded in Stockholm, Sweden, in 2006 by Daniel Ek and Martin Lorentzon, with the ambition to launch a free, purely advertising-supported music service, to reduce the use of illegal file-sharing services and generating at the same time licensing revenues to copyright holders. Despite the initial scepticism – mostly related to revenue generation - from rights holders and after difficult negotiations with major and independent labels, in late 2008 the service was launched in several European markets and entered the US market in July 2011. Spotify has been forced to accept the rights holders' terms, offering them shares in the company, and embrace a needful change in the business model. In 2008, it was launched as a “freemium” model (Section 2.2.2), offering its users an advertising-funded “free” plan with limited functionalities and a “premium” subscription-based plan with additional features and without ads.

2.2 The market for music streaming platforms

The market for music streaming services is fiercely competitive, with a wide variety of online music providers experimenting different business models. Revenues from music streaming services continue to offset declines in physical sales with double-digit growth rates in recent years. Accounting for almost 2/3rd of total U.S. music industry revenues in 2017²⁶, streaming music revenues grew by 30% in 2018²⁷ and 19.9% in 2019 to \$8.8 billion, representing approximately 80% of all recorded music revenues²⁸ (Figure 2.1).

This broad category includes free advertisement-based models (i.e. YouTube, Vevo, ad-supported Spotify), premium paid subscription services (e.g. Apple Music) and streaming radio

²⁶ Friedlander, J. P. (2018). News and Notes on 2017 RIAA Revenue Statistics. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2018/03/RIAA-Year-End-2017-News-and-Notes.pdf>

²⁷ Friedlander, J.P., and Bass, M., (2019). RIAA 2018 Year-End Music Industry Revenue Report. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2019/02/RIAA-2018-Year-End-Music-Industry-Revenue-Report.pdf>

²⁸ Friedlander, J.P., and Bass, M. (2020). Year-End 2019 RIAA Music Revenues Report. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2020/02/RIAA-2019-Year-End-Music-Industry-Revenue-Report.pdf>

services (like Pandora, Last.fm and other internet radio services) (Figure 2.2). Other platforms, like Spotify, offer users a choice between two models: users can listen for free to a limited amount of music, interrupted by commercials, or listen to an unlimited catalogue, without any sort of limitation, for a monthly subscription fee. Figure 2.3 illustrates the rise in music streaming revenues worldwide over the last fifteen years.

Figure 2.1. U.S. Music industry revenues 2019 (RIAA).

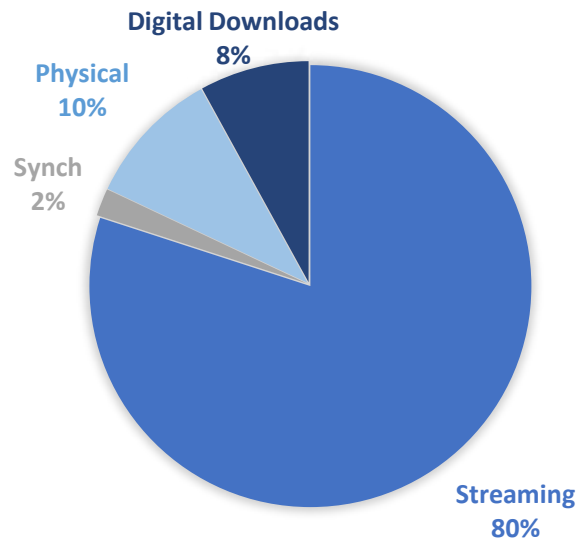
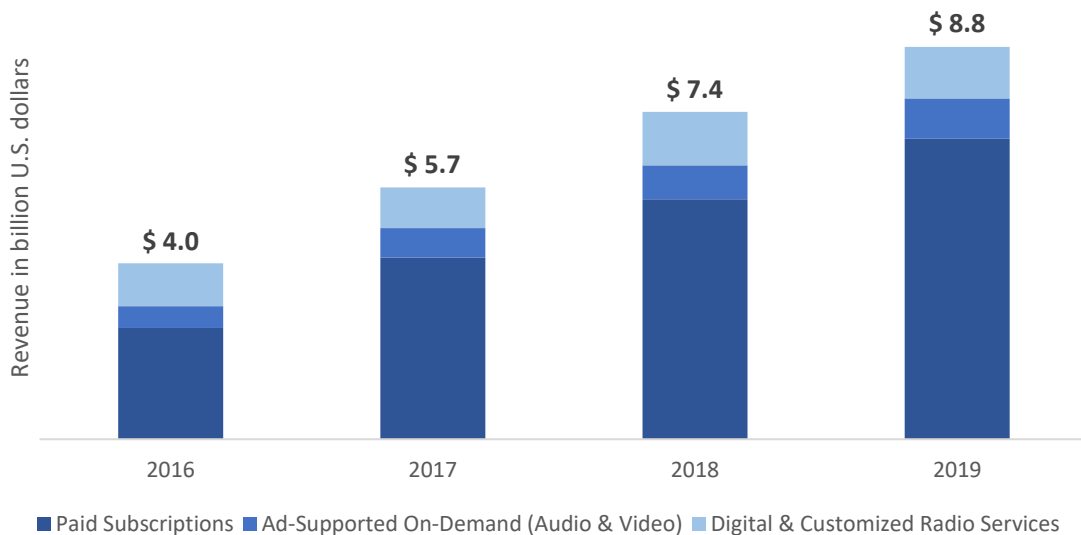


Figure 2.2. U.S. Music industry streaming revenues 2016-2019 (RIAA).



Another expanding business model consists in building strategic partnerships with telecommunications companies to bundle access to music services with subscriptions to mobile internet service providers and/or mobile devices (e.g. TIDAL and Vodafone).

Figure 2.3. Music streaming revenues worldwide from 2005 to 2019 (IFPI).

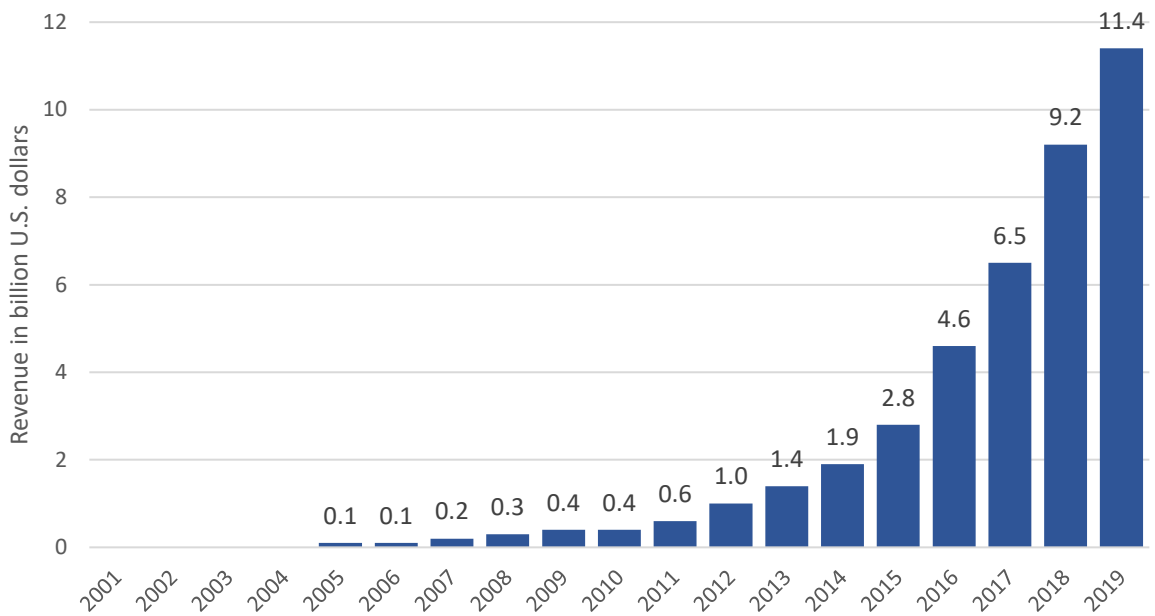
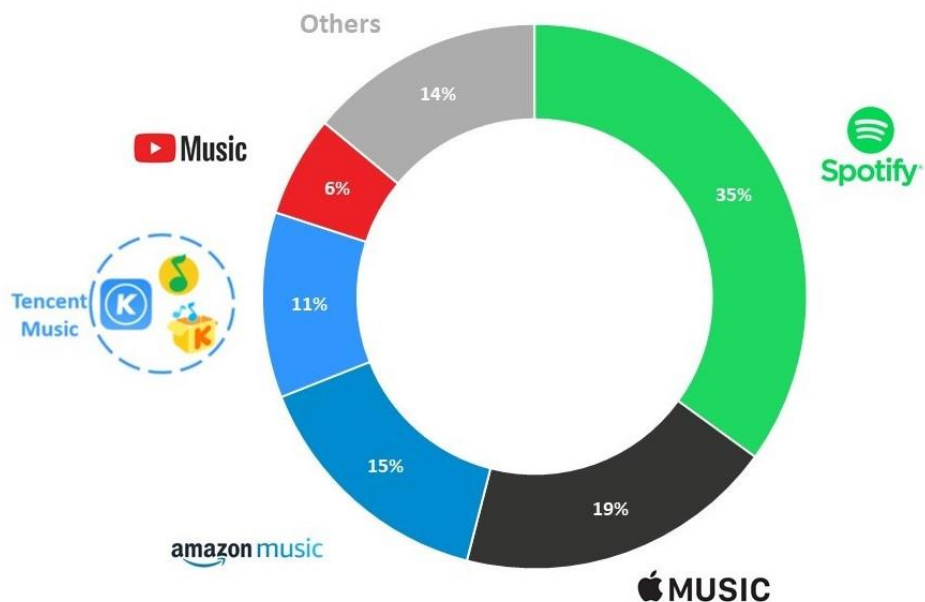


Figure 2.4. The world ‘s most popular music streaming services in 2019 (Counterpoint Research 2020).



When estimating the size and structure of this heterogeneous market, the total number of monthly active users can be misleading. Considering YouTube for example, with over 2 billion logged-in users visiting the platform each month, is probably the online service with the highest number of monthly active music listeners in the world, although it is difficult to determine how many of these are actually listening to or watching music videos and those who are watching

other video categories. Further, it is necessary to note that some of the most popular platforms are available only in specific regions, such as Tencent Music Entertainment platforms (e.g. QQ Music, WeSing, KuGou) in China or Pandora and SiriusXM in the U.S.

The most relevant approach for estimating the size of the market for access-based music services is focusing on the number of premium subscribers. Figure 2.4 illustrates the music streaming services with the highest share of premium subscribers at the end of 2019²⁹. As we can see, Spotify had the 35 percent of music streaming subscribers worldwide, almost double the share of subscribers to Apple Music.

2.2.1 Main music streaming services

This section focuses on the main access-based music services, considering those that are available in Italy. As we will see, the tough competition has led the major music streaming platforms to essentially choose between two business models (*Freemium* and *Premium*) and offer their subscriptions at almost the same price, with the same discounts (e.g. family and student discounts) and offers to attract new users (e.g. free trial).

- **Spotify**

Spotify is the world's most popular audio streaming subscription service with a community of 138 million Premium Subscribers, available in 92 markets, with more than 60 million tracks including 1.5 million podcast titles³⁰. It has transformed the way people access and enjoy music and podcasts, constantly improving its features (Figure 2.5).

Spotify was founded in Stockholm, Sweden, in 2006 by Daniel Ek and Martin Lorentzon, with the ambition to launch a free, purely advertising-supported music service, to respond to growing challenge of online music piracy in the early 2000s.

It works as a freemium model, making money from subscriptions and advertisements, and offers two types of services: Spotify Free and Spotify Premium. The first is available to everyone who wants to register and gives unlimited ad-supported streaming with some restrictions compared to the Premium version, such as shuffle-only playback of songs on mobile

²⁹ As of November 2019.

³⁰ Spotify (2020). Spotify Technology S.A. to Announce Financial Results for Third Quarter 2020. *Spotify Investors*, 1 October. <https://investors.spotify.com/financials/press-release-details/2020/Spotify-Technology-S.A.-to-Announce-Financial-Results-for-Third-Quarter-2020/default.aspx>

devices, ad-interrupted playback, limited skips (6 skips per hour) and basic audio quality (160 kbps³¹). Spotify Premium offers ad-free music listening, play offline, on-demand playback with unlimited skips and high audio quality (320 kbps).

Figure 2.5. Spotify growth timeline (Goodwater Capital).

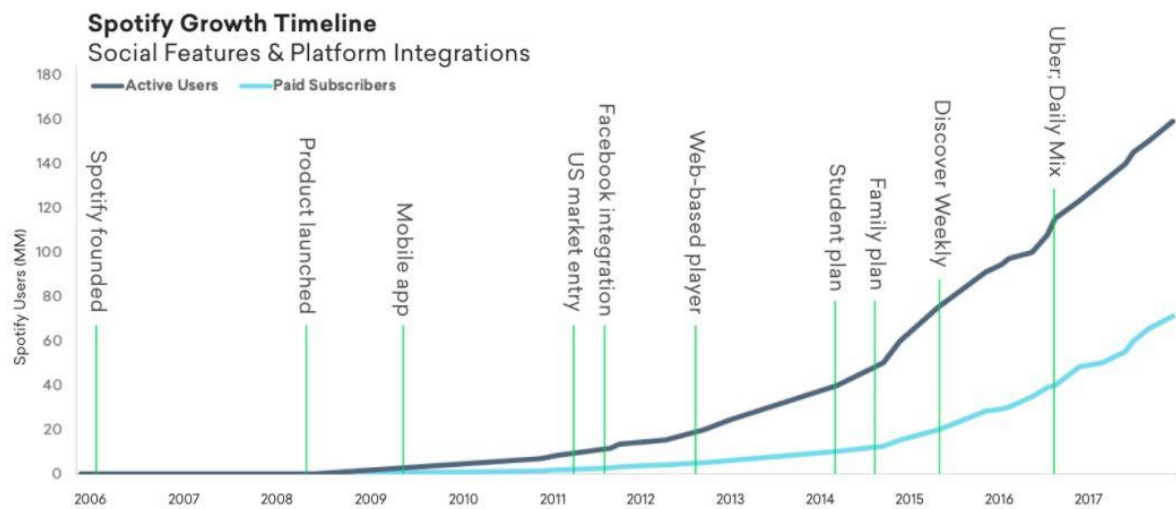


Figure 2.6. Spotify Free and Spotify Premium, Italian market (Spotify).

Scegli il tuo Premium

Ascolta senza limiti tramite telefono, altoparlante e altri dispositivi.

Spotify Premium Individual	Spotify Premium Duo	Spotify Premium Family	Spotify Premium Student
<p>Prova gratuita di 1 mese</p> <p>Piani prepagati disponibili</p> <p>€ 9,99 al mese al termine dell'offerta</p> <p>1 account</p> <ul style="list-style-type: none"> ✓ Ascolta la musica senza pubblicità ✓ Ascolta la musica quando e dove vuoi, anche offline ✓ Riproduzione on-demand ✓ Paga in anticipo o abbonati <p>INIZIA</p>	<p>1 mese gratis</p> <p>€ 12,99 al mese al termine dell'offerta</p> <p>2 account</p> <ul style="list-style-type: none"> ✓ 2 account Premium per una coppia che vive insieme ✓ Duo Mix: una playlist per due, regolarmente aggiornata con la musica che entrambi amate ✓ Musica senza pubblicità, riproduzione offline e on demand <p>INIZIA</p>	<p>1 mese gratis</p> <p>€ 14,99 al mese al termine dell'offerta</p> <p>Fino a 6 account</p> <ul style="list-style-type: none"> ✓ 6 account Premium per i membri della famiglia che vivono insieme ✓ Family Mix: una playlist per la tua famiglia, regolarmente aggiornata con la musica che piace a tutti ✓ Blocca i brani espliciti ✓ Musica senza pubblicità, riproduzione offline e on demand <p>INIZIA</p>	<p>Prova gratuita di 3 mesi</p> <p>€ 4,99 al mese al termine dell'offerta</p> <p>1 account</p> <ul style="list-style-type: none"> ✓ Sconto speciale per studenti idonei iscritti all'università ✓ Ascolta la musica senza pubblicità ✓ Ascolta la musica quando e dove vuoi, anche offline ✓ Riproduzione on-demand <p>INIZIA</p>

³¹ Kilobits per second.

There are four Spotify Premium plans (Figure 2.6):

1. *Individual*: €9.99/month and one Premium account.
2. *Duo*: €12.99/month and two Premium accounts for a couple residing at the same address.
3. *Family*: €14.99/month and up to six Premium accounts for family members living under one roof.
4. *Student*: €4.99/month and one Premium account for students at accredited higher education institutions.

- **Apple Music**

The streaming platform launched by Apple in June 2015 can be considered as Spotify's main competitor (Figure 2.4). Apple Music boasts access to a total of 70 million songs (plus your own personal iTunes library) and offers a curated listening experience with on-demand radio stations, available in more than 160 countries.

Unlike Spotify, Apple Music does not offer a free plan but allows a free 3-month trial, at the end of which consumers can choose whether to subscribe or not. Therefore, there are no advertisements or restrictions of any kind, music can be downloaded or streamed.

Figure 2.7. Apple music subscription plans, Italian market (Apple Music).

	Studenti ² € 4,99 al mese	Individuale € 9,99 al mese	Famiglia € 14,99 al mese
	Prova gratis	Prova gratis	Prova gratis
70 milioni di brani, più tutta la tua libreria iTunes	✓	✓	✓
Ascolti online e offline	✓	✓	✓
Prova gratuita e senza impegno*	✓	✓	✓
Brani e video musicali senza pubblicità	✓	✓	✓
100.000 brani da scaricare nella tua libreria	✓	✓	✓
Accedi da tutti i tuoi dispositivi	✓	✓	✓
Scopri cosa ascoltano i tuoi amici	✓	✓	✓
Show originali, concerti ed esclusive	✓	✓	✓
Radio live e programmi on demand, condotti da musicisti	✓	✓	✓
Fino a sei persone con un solo abbonamento			✓
Un account personale per ciascun membro della famiglia			✓
Condividi come vuoi la libreria musicale che hai già ³			✓

Three subscription plans are offered (Figure 2.7):

1. *Individual*: €9.99/month, only one account.
2. *Family*: €14.99/month, up to six people can share all the functions and the entire Apple Music catalogue.
3. *Student*: €4.99/month, same features and all the benefits of an individual Apple Music subscription.

In addition, a new subscription plan was launched last fall: Apple One, which bundles together up to six Apple services (Apple Music, Apple TV+, Apple Arcade, iCloud, Apple News+, Apple Fitness+).

- **Amazon Music**

Amazon Prime Music is the streaming service provided by Amazon and launched in 2014. It is included with a Prime³² membership at no additional cost, with a curated music catalogue of 2 million songs, thousand playlists and radio stations. Prime Music is available on any mobile device, allows offline listening, always ad-free.

Amazon Music Unlimited is a premium music subscription service with all of the features and functionality of Prime Music and a very rich catalogue of over 60 million songs, and thousands of expert-programmed playlists and stations, including new releases.

There are three Amazon Music Unlimited plans:

1. *Individual*: prime members can join Amazon Music Unlimited for only €9.99/month for a monthly subscription or €99/year for an annual subscription. Non-Prime customers have access to the monthly offer of €9.99.
2. *Family*: up to six individual Amazon Music Unlimited accounts with personalised suggestions, for €14.99/month or €149/year (only Prime members).
3. *HD*: Amazon Music Unlimited HD offers premium quality music content with over 60 million songs in high definition (HD) and Ultra HD³³, for €14.99/month (Individual plan) or €19.99 (Family plan).

Amazon Music Free is the free ad-supported version, with some restrictions, available for all customers who do not have an Amazon Prime or Amazon Unlimited subscription.

³² Amazon Prime offers various services such as: unlimited fast deliveries; no shipping costs; access to movies, tv-shows, e-books and music.

³³ HD: up to 850 kbps; Ultra HD: up to 3730 kbps.

- **YouTube Music**

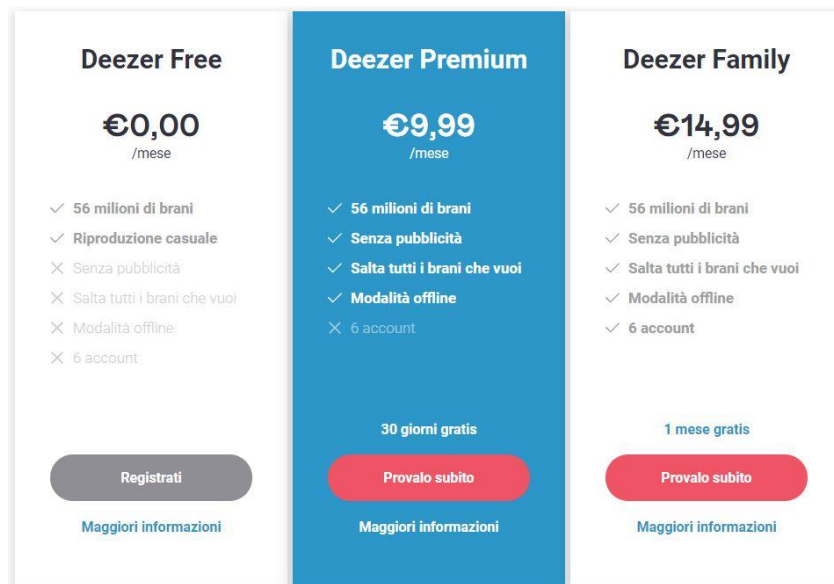
YouTube Music, the relatively new music streaming service by Google launched in 2018, only focuses on everything related to music across the video streaming platform. It is a free-to-use ad-supported service, with an extensive catalogue not only of official songs, but also remixes, live performances, covers and music videos. Google has announced that YouTube Music will replace Google Play Music by the end of 2020³⁴.

YouTube Premium is the paid tier that offers YouTube and YouTube Music without advertisements, allow background listening (so you can exit the app and continue listening) and download songs for offline playback. Like the previous streaming platforms, YouTube Premium has three plans: individual (€11.99/month), family (€17.99/month) and student (€6.99).

- **Deezer**

Deezer is another interesting platform with 56 million tracks. Like the other platforms it offers a free option and a paid premium option (Figure 2.8).

Figure 2.8. Deezer free and premium plans, Italian market (Deezer).



³⁴ Perez, S. (2020). YouTube Music adds a transfer option ahead of Google Play Music's shutdown this year. *TechCrunch*, May 12. <https://techcrunch.com/2020/05/12/youtube-music-adds-a-transfer-option-ahead-of-google-play-musics-shutdown-this-year/>

Deezer Premium has four premium offers:

1. *Annual plan*: a year of Deezer Premium for €99.90.
2. *Deezer Family*: €14.99, up to six accounts.
3. *Deezer Student*: Deezer Premium for €4.99/month.
4. *Deezer HiFi*: with High Fidelity sound without compression (FLAC³⁵ tracks) for €14.99.

- **TIDAL**

TIDAL is a global music and entertainment platform launched in 2014 by the Norwegian company Aspiro, later acquired by the American rapper and entrepreneur Jay-Z, involving in the project (with shares of the company), some big names of the international music scene³⁶. The platform connects artists and fans through unique music and digital content experiences, currently available in 55 countries with over 50 million lossless quality songs and 200,000 high-quality videos.

TIDAL's extensive catalogue contains exclusive content, including exclusive videos and songs featuring the world's best musicians, athletes and performing artists, as well as emerging independent artists. It also offers the opportunity to "live" unique experiences, such as concerts with established or emerging artists and other touchpoints between fans and their favourite artists. It offers two subscription plans: TIDAL Premium with standard sound quality for €9.99/month (Family plan³⁷ €14.99, Student plan €4.99) and TIDAL HiFi (FLAC audio format) for €19.99/month (Family HiFi €29.99, Student HiFi €4.99), with lossless High Fidelity sound quality, high-definition music videos and expertly curated editorial.

It is presented as a revolutionary platform founded to create a sustainable music industry model that values music and artists, with a better distribution of revenues among artists.

The next section will focus on the so-called *freemium* business model, presenting both some studies that examine the strategic decisions of a monopolistic streaming operator and other studies that extend the analysis to the duopoly competition case.

³⁵ Free Lossless Audio Codec.

³⁶ Including Madonna, Beyoncé, Rihanna, Alicia Keys, Chris Martin, Kanye West, Daft Punk, etc.

³⁷ Up to five accounts.

2.2.2 Freemium model

One strategy of start-ups in the access-based music market is simply to offer a basic core ad-supported version of the service for free and a premium subscription version with additional benefits. The logic behind this seemingly generous offer is that by using a free ad-supported version of the service during an extended period of time, users learn about and get addicted to the service to such an extent that they decide to “convert” to the premium version, to get rid of the tedious and “pounding” advertisements.

When designing such a so-called *freemium model*, term coined as a combination of the words free and premium, the features must be well balanced: they have to be good enough to minimise user attrition and at the same time there have to be some constraints in order to induce the conversion to the premium version. The additional benefits of the premium version can be ad-free listening, unrestricted access to the catalogue, offline listening, access to the service from all devices, exclusive contents, etc.

Table 2.1. Business models of the major music streaming services (Personal elaboration).

Service	Business model
Spotify	Freemium
Apple Music	Subscription
Amazon Music	Freemium
YouTube Music	Freemium
Deezer	Freemium
Tidal	Subscription
Pandora	Freemium
Rhapsody ³⁸	Subscription

Note: Subscription business model offers paid services to consumers. Freemium business model offers two versions of the same service: a core one for free and a richer one for a fee.

There are many instances of freemium in digital economy. As in Table 2.1, more than half of the major music streaming services adopt freemium business models. Spotify, the world’s largest music streaming service, has by far been the most successful start-up in implementing such a model, attracting a large initial audience and expanding the market by offering a solution that merged customers from legal options, such as iTunes, with those of illegal file-sharing software into a streaming music experience.

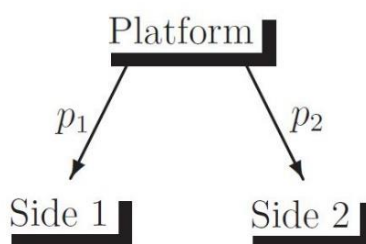
³⁸ Rhapsody is a subscription music streaming service launched in 2001 renamed as Napster in 2016.

During the last years, following the Information & Communication Technologies (ICT) revolution, an increasing number of companies, the so-called *digital intermediaries*, have emerged with products and services that tie together distinct groups of users in a network. Many Consumer Technology Companies such as Netflix, Amazon, YouTube, eBay, PayPal, Airbnb, Uber, etc. can be thought of as *two-sided markets/networks*, which are characterised by two main features (Comino & Manenti 2014):

1. The existence of two separate groups of agents (the two sides of the market) which interact with one another through a platform or intermediary.
2. Decisions taken by the agents belonging to one side of the market affect the benefits enjoyed by the agents on the other side.

That is, the two groups of agents benefit from network externalities, where one group's benefit from joining a platform depends on the size of the other group that joins the platform (*cross-side network effects*)³⁹.

Figure 2.9. Representation of a two-sided platform (Comino & Manenti 2014).



While in the traditional value chain, a framework which provides a systematic method for disaggregating a company or industry into its major activities to understand sources of competitive advantage, value moves from left to right, in two-sided markets costs and revenues come from both sides. Figure 2.9 represents a two-sided platform where p_1 and p_2 denote the prices set for the two sides of the market. The platform incurs costs in serving both groups and can collect money from each, although one side is often subsidised. In other words, the platform balances the prices of the two sides of the market, offering the service for free to one side of the market, thus subsidising consumption by setting a price below production costs, while charging a high price to the other side, so that the latter represents the only source of revenues for the platform (Table 2.2).

³⁹ Armstrong, M. (2006). Competition in two-sided markets. *The RAND Journal of Economics*, 37(3), 668-691.

Table 2.2. Examples of two-sided markets (Comino & Manenti 2014).

Industry	Two-sided platform	Side 1	Side 2	Subsidised side	Source of revenue
Real estate	Real estate agency	Buyer	Seller	none	Sales, commissions
Software	Operating system	User	Developer	Side 2	Licensing, e.g. Microsoft earns nearly 70% of revenues from licensing to end-users
Video Game	Console	Player	Game developer	none	Games sales to players and licensing to developers generate substantial revenues
Payment card system	Credit card	Card holder	Merchant	Side 1	Commissions, e.g. in 2001 American Express earned 82% of its revenues from merchants
Media	Network	Viewer	Advertiser	Side 1	Most of its revenues of commercial TV networks come from advertisers

Streaming operators can be seen as digital platforms, that is, as intermediaries that facilitate and manage the interaction on the Internet between different groups of agents. Streaming platforms connect up to three categories of users: content producers (artists, record companies, etc.), consumers and (sometimes) advertisers.

Cross-group externalities exist across these three groups: on the one hand, more music and artists on the platform create value for consumers with a larger library, while more users on the platform increase the potential royalties for artists; on the other hand, companies that place advertisements on the platform benefit from an increasing number of users, while subscribers suffer from an increase in commercials, representing a nuisance.

In terms of pricing strategies, one of the main decisions facing streaming platforms is the choice of the business model: subscription, ad-supported or a hybrid of these two (i.e. freemium).

Thomes (2011) presents a theoretical model which investigates strategic decisions of a monopolistic streaming service that offers two differently funded business models to its potential subscribers:

1. *Free-of-charge service*. A free service, which is financed by advertising and of low quality.
2. *Flat-rate service*. A paid service of higher quality, without advertising, which charges users a monthly fee.

Subscribers strategically decide according to a given level of commercials and a given flat price whether to subscribe to one of these services or to refrain from consuming streaming music.

His findings shows that the optimal business model for the monopolist streaming service, thus whether the monopolist vertically segments the market or exclusively launches either the free-of-charge or the flat-rate service, depends on the nuisance cost parameter, which is a measure of the disutility that users receive from the amount of commercials of the free service and is assumed to be identical for all users. In particular his analysis reveals that:

- The monopolistic platform will optimally only launch the free-of-charge service as long as consumers are highly tolerant of advertising, thus when nuisance caused by commercials is weak.
- The platform is more likely to launch both services when the nuisance cost parameter is at an intermediate level. In this case, a monopolistic streaming platform sets both its highest equilibrium flat-rate price for the paid service and its highest equilibrium advertising charge that advertisers must pay to place their commercials. The monopolistic streaming provider will be incentivised to increase the price for its flat-rate subscribers in order to stimulate the free-of-charge demand and to capture higher revenues from advertisers, but at the expense of users.
- If the nuisance created by commercials is very high, that is, potential users are disturbed from advertising, it is profitable for the monopolistic platform to abandon ad-funded service and launch only the flat-rate service.

Carroni & Paolini (2017) analysed the optimal decision of a monopolistic streaming platform, outlining the main drivers in the choice between the *Freemium* and *Premium* (or subscription) models. To assess this research question, they provide a model in which a monopolistic platform pays per-user royalties to copyright owners (artists) for their artistic creation to be streamed by the platform and, if choosing the freemium model, charges

advertisers with a per-user fee. Their findings highlight that the optimal business-model choice of the platform depends on two elements:

1. the maximal advertisement nuisance
2. the potential market size of the platform.

In particular they show that:

- When advertising nuisance is high, a platform opts for a subscription-based model. In this case the *Premium* model is always the platform's best solution as an increase in advertisement nuisance implies a stronger negative externality.
- Conversely, when advertisement nuisance is low, i.e. commercials are perceived as not too disturbing, the mixed model becomes more profitable. In this case, a platform prefers the *Freemium* model, offering the choice between free contents and paid access.
- When the advertising nuisance is intermediate, market size becomes more salient.
 - A big platform will always prefer the *Premium* model free-of-advertisements. A wider potential subscription-demand makes the platform more attractive to copyright owners and improves its negotiation power. Indeed, since content owners benefit from an increase in the number of users (due to the fact that their songs potentially reach a wider audience), content attraction by the platform becomes cheaper, i.e. for a given royalty more contents are attracted, which increases users' willingness to pay because they value variety.
 - A small platform (with a narrower audience) will instead prefer to follow the *Freemium* model and offer a menu of subscriptions, with ad-intolerant users subscribing to the premium service and moderately averse users opting for the basic service supported by advertising.

Another important finding is the existence of situations in which the optimal choice of the platform is to follow the *Freemium* business model, whereas copyright owners would prefer a subscription-based system, leading to a misalignment of incentives between the platform and the copyright owners (Carroni & Paolini 2017). This happens when advertising creates a moderate nuisance and the market is large enough, thus when the streaming platform makes money from advertisements and subscriptions and exploits size effect by reducing royalties to copyright owners. Clearly, artists would prefer the Premium model in which both the royalty and the subscription price would have been higher, explaining the reluctance of many artists to participate in the "Spotify model".

Similarly, Carroni & Paolini (2020) provide a model to give a picture of the change in the optimal strategy of a monopolistic streaming platform as its potential market increases, i.e. the share of people the platform is able to reach (the audience). Their analysis, in line with the results of Carroni & Paolini (2017), shows that a wider audience incentivises the platform to increase both the quality upgrade of the Premium service (so to increase subscription price) and advertising intensity (so to increase unitary profits from advertising), making the paid service more attractive to subscribers and leading some people to move to the Premium subscription. Once a sufficient share of users can be reached by the platform, it becomes optimal for the platform to opt for a purely subscription-based model, eliminating advertising and the free-of-charge solution. Furthermore, their model predicts, confirming the findings of Carroni & Paolini (2017), that a platform with a narrower share of users will offer a menu of subscriptions, while a platform with a wide audience will only offer a Premium subscription.

Sato (2019) investigated on the optimality of freemium business models, showing that, even though a monopolistic platform can choose any menu of price-advertising pairs, the optimal monopoly menu pricing to collect revenues from both consumers and advertisers is binary, that is, it involves only two services: a basic service supported by advertising and a paid ad-free service. Furthermore, he shows that the property that platforms offer only two services is valid also under duopoly platform competition, however without examining asymmetric market structures, in which only one platform introduces the premium service.

Zennyo (2019), further developing Sato's analysis, studies the strategic decision of advertising-sponsored platforms on whether to adopt the freemium model or not by constructing a model of duopoly competition between two ad-sponsored platforms. According to Zennyo, the extent of initial investment costs⁴⁰ for introducing an ad-free paid service, in addition to the ad-sponsored one, is a possible factor determining the business model, influencing the decision on whether to introduce ad-free premium services. He shows that three kinds of market structures can arise depending on the extent of the fixed cost:

- If the fixed cost of introducing a premium service is small enough, then adopting the *freemium model* is the dominant strategy for the platforms, enabling them to manipulate more strategic variables, like the prices for the basic and premium services, the number of advertisements and the quality difference between the two services.
- When fixed cost is at an intermediate level, *asymmetric equilibria*, in which only one platform introduces the premium service, may arise. Different business model choices

⁴⁰ These additional fixed costs can have different interpretations: for example, when introducing an ad-free premium service, a computer system must be designed to prevent any advertisement from being displayed to premium users, or, if the basic service is provided for free, a payment system for paid users must be consolidated.

may ease the intense competition by inducing the competing platforms to target different user segments: on the one hand, the freemium platform targets the users with extreme preferences for advertisements who are either tolerant or allergic to advertisements, on the other hand, the ad-sponsored platform effectively deals with the remaining users with midrange preferences.

- When the fixed cost is too high compared to the expected profits, both platforms do not adopt the freemium model and opt for the *ad-sponsored business model*, relying on revenues from in-app advertisements.

Comparing these three market structures, Zennyo shows that platform surplus is largest in the asymmetric market structure, incentivising platforms to coordinate their choices and select different business models from each other with a monetary transfer that satisfies the incentive compatibility constraints for them. However, these asymmetric structures can be harmful to both consumers and advertisers since both surpluses are lower under the asymmetric market structure than under the freemium market structure. Finally, he compares social welfare among the three market structures, illustrating that it will be largest under the ad-sponsored market structure, irrespective of the magnitude of fixed cost. However, if platforms decide to coordinate their business choices toward asymmetric market structure, then social welfare (although not the best one) can be improved, but at the expenses of end consumers and advertisers, as this comes from the steep increase in platforms' joint profits.

2.3 Behind streaming success

The production, distribution and consumption processes of the media industry have changed significantly through the rapid development of digital technology (Im & Jung, 2016), which has made most processes much faster and easier and has also produced new business models such as paid online downloading and streaming.

Many of the same technologies that drive the digital economy are also disrupting key industries and upsetting major incumbents. Interestingly, even the past disrupters may experience the same fate. Digital platforms have become the largest retailers in the media industry, due to the purchase convenience and wide-ranged choices (Im & Jung, 2016). Apple's iTunes, which once successfully disrupted the brick-and-mortar music retailers with its online music retailing, has been disrupted by Spotify and its music-streaming business model.

“The recording industry is a mixed-format business, offering music fans a diverse range of formats, including hundreds of streaming services, and everything from downloads to CDs and vinyl.” (IFPI 2016, p.13)

Music streaming platforms such as Spotify, Apple Music and Deezer have introduced subscription-based business models into a marketplace traditionally organised around the buying and selling of physical and digital goods (e.g. CDs, vinyl, digital downloads) from bricks-and-mortar and online retailers (e.g. record shops and Apple’s iTunes music store), bringing to a new level the customers’ needs and wants⁴¹. Indeed, these music-streaming services were brought to the mainstream market by youth, the Now Generation customers who demand instant everything (Kotler et al., 2016). Furthermore, as customers become increasingly mobile and connected, time becomes the scarcest resource in their lives, and they expect companies to deliver instant solutions to their needs without the hassles. Nowadays, customers claim to listen to music quickly and easily and to be able to freely consume music whenever and wherever they want. Streaming allows all this and here derives its success and rapid development.

According to the IFPI annual Global Music Report 2019, streaming revenue grew by 22.9% to US\$11.4 billion and for the first time accounted for more than half (56.1%) of global recorded music revenue. Growth in streaming more than offset a -5.3% decline in physical revenue, a slower rate than 2018.

The following paragraphs will look at some success factors of music streaming services.

2.3.1 Price

Price consciousness has an influence in the choice of music consumption mode. “Consumers who place a high priority on prices are sensitive to small price difference” (Im & Jung, 2016) and their decision style pays more attention to value for money (Sproles & Kendall, 1986).

Music streaming services are generally provided at much lower prices than physical formats (i.e. audio CD or vinyl) and digital download services (which provide a pay-per-song option), as they require lower costs of production and distribution.

⁴¹ Hracs, B. J., & Webster, J. (2020). From selling songs to engineering experiences: exploring the competitive strategies of music streaming platforms. *Journal of Cultural Economy*, 1-18.

Before iTunes was replaced by four specific apps (Apple Music, Apple Tv, Apple Books and Apple Podcasts), it allowed users to purchase songs at a variable price (between €0.69 and €1.29) and albums at €9.99.

As we saw in Section 2.1.3, the acute competition in the marketplace for music streaming has led major music streaming platforms not only to essentially choose between the freemium business model and the subscription business model (Table 2.1), but also to offer their monthly subscription plans at a similar price (around €9.99), the same discounts (e.g. family and student discounts), the same offers to attract new users (e.g. free trial for the first three months) and bundling solutions with other services (e.g. discounted subscriptions in partnership with telecommunications companies).

Regarding physical formats, there is a clear distinction between the selling price of a CD (i.e. compact disk) and that of vinyl: popular CDs are sold on average for €20, while popular vinyl albums usually range from €20 to €40. Clearly, if consumers have long-term subscription contracts with online music service providers, the price becomes much lower.

2.3.2 Quality

Quality-sensitive consumers are not individuals who “forgo high-quality products for the sake of low prices”, but rather who make special effort to choose the best quality products (Im & Jung, 2016).

Competition in the music streaming market has led major streaming platforms to offer access to similar catalogues of music and similar functionalities (such as the ability to browse, search and create playlists), trying to differentiate their services by leveraging sound quality.

Sound quality varies not only between the services offered by different streaming platforms, but also between different subscription plans offered by the same streaming platform. For example, Spotify offers a free subscription plan with limited audio quality to a maximum of 160 kbps⁴² and a premium subscription plan with audio quality up to 320 kbps (lossy compression music streams). Some music streaming services, such as Tidal and Deezer, offer a cheaper premium subscription with streams music at 320 kbps and a “HiFi subscription plan” which provides access to high-resolution audio tracks and high-fidelity FLAC⁴³ tracks at 1411

⁴² Audio bitrate refers to the audio quality of a file and it is measured in Kilobitspersec (kbps).

⁴³ FLAC (Free Lossless Audio Codec) is a musical file format that offers bit-perfect copies of CDs but at half the size. Source: <https://www.cnet.com/news/what-is-flac-the-high-def-mp3-explained/>

kbps (streams in CD quality). However, this high-fidelity sound is supported only on specific compatible devices.

Over time, major music streaming platforms have significantly improved sound quality.

2.3.3 Library size, variety and music collection

Nowadays, streaming services offer music lovers instant and limitless access to music from all over the world and across history. The breadth and variety of the music library is certainly one of the most valued and relevant features of streaming services.

Music streaming platforms offer consumers unlimited access to a huge library of content with a fixed monthly payment, which allows consumers to choose any song whenever and wherever they want. Additionally, “streaming increases total consumption, leads to more variety and facilitates discovery of more highly valued music” (Datta et al., 2018).

The storage limitation on mobile devices, such as smartphones and tablets, can be one explanation for why users prefer access-based services rather than carrying their own digital music collection on their devices. Although people still develop physical or digital music collections, most of them certainly do so less frequently and for everyday music listening or specific known-item searches they appear to rely on streaming services. This may be related to difficult or not immediate access, limited variety, or inability to discover new artists in personal music collections. Furthermore, managing digital music collections can be challenging as people switch to new computers, phones and other devices frequently, sometimes without fully copying all the content from old to new devices. Streaming, on the other hand, solves all these difficulties.

2.3.4 Discovery and personalised experience

Beyond getting consumers access to a potential infinite music catalogue, a major value-creating function of a streaming platform is helping consumers to discover the music they like in the overwhelming variety of music offered and stay up to date on latest music trends, thus lowering the search cost for new music.

This is made through the creation of *playlists*, the lingua franca of streaming, i.e. “collections of songs by one or more artists that are tied together by some concept, which could be the mood

they create or some common thread between the artists of the songs or even just a specific lyrical theme”⁴⁴.

Starting as a tool for radio DJs to organise and schedule their content, playlists are now located at the heart of the financial growth of the music streaming industry. Playlists were originally introduced to streaming platforms to assist people in the personal organisation of musical archives, however, with time, playlists have grown to become a fundamental part of the way music is discovered, consumed and marketed, as well as one of the most important pillars of any successful music distribution strategy.

Among the several music streaming services, the one that currently seems the most relevant to artists and music labels is Spotify:

"Spotify playlists, charts and plays, have become the number one tool that labels, artists and managers are using in order to break artists and measure success" says industry analyst Mark Mulligan⁴⁵.

Consequently, every artist wants a spot on the “high-traffic playlists”, that is, the most followed and influential ones, such as Today’s Top Hits (with more than 27 million subscribers), Global Top 50 (15.8 million subscribers), RapCaviar (13.5 million), Viva Latino (10.7 million), Baila Reggaeton (10.2 million), etc.

Combining a sleek and seamless user interface with artificial intelligence and machine learning capabilities, Spotify creates a sophisticated yet user-friendly platform with a personalised homepage with content that reflects an understanding of users’ musical tastes, past listening habits, musical moods and daily activities, providing users with a wide range of ways to search, brows and discover music and other content (Spotify 2018), including:

- *Personalised Playlists*, generated by algorithms and different for each listener, regularly updated collecting information from users’ listening behaviour throughout the day, creating a personalised experience that reflects users’ real-time moods and activities. Examples include Discover Weekly, Daily Mix, Release Radar, Your Summer Rewind, etc.
- *Curated Playlists*, created by Spotify’s editorial team, allowing users to listen to music in specific genres or to match their moods, to which the most followed and influential playlists belong. Examples include Today’s Top Hits, RapCaviar, Peaceful Piano, Viva

⁴⁴ <https://artists.spotify.com/blog/glossary-of-music-terms-streaming>

⁴⁵ Pierce, D. (2017). The secret hit-making power of the Spotify playlist. *Wired*, March 5. <https://www.wired.com/2017/05/secret-hit-making-power-spotify-playlist/>

Latino, Acoustic Covers, etc. Around a third of Spotify listening time is spent on Spotify-generated playlists (algorithmic playlists and curated playlists)⁴⁶.

- *User Generated Playlists*, allowing users to quickly create, curate and save their playlists to share with other users. Alongside user-generated playlists, are those created by record labels: every major record company (Sony, Warner, Universal) has their own playlist brands to promote their productions (Filtr, Topsyfy and Digster respectively).

However, this classification has recently undergone some changes, with some editorial playlists currently being personalised for each listener based on their particular taste, meaning that all music has a better chance of getting into the ears of the right listeners⁴⁷.

Big Data has a great impact on the music industry and has become a necessary tool to provide a more customised experience to users. By gathering information about users' habits and preferences, many online music streaming services provide customers with music recommendations using big data analytics, however, raising the issue of online privacy, security and trust. Indeed, Spotify uses not only data collected from habits and actions of users on the platform, but also data collected from the users' phones such as location, photos, records, etc., as long as the customer allows it, to provide their users a personalised experience and to give all music a better chance of getting in front of the right listeners. The streaming service declare that, after discovering a song through a *personalised editorial playlist*, the number of listeners who then seek out the track on their own for repeat listens is up by 80%, and the average number of times a listener saves a track is up 66%⁴⁸.

The use of Big Data analysis has changed the traditional way of deciding what the customers might like to listen (an activity based mostly on assumptions that was up to record labels) into more specific and numerical reports and analysis driven by customer behaviour, giving very important insights about the music industry and helping artists to detect what their fans are interested in and what they like about their music.

Additionally, music streaming services, just like most social networks, generally provide a "follow" button that allows users to subscribe to their favourite artists and receive notifications when new tracks, albums and news are added to the artist's profile. They give also updates on live performances and links to purchase merchandise on the artist's official website, potentially increasing the demand of these complementary businesses (live performance and merchandise). These possibilities make music streaming services totally innovative and more social than

⁴⁶ Iqbal, M. (2020). Spotify Usage and Revenue Statistics. *Business of Apps*, October 30. <https://www.businessofapps.com/data/spotify-statistics/>

⁴⁷ <https://artists.spotify.com/blog/our-playlist-ecosystem-is-evolving>

⁴⁸ <https://artists.spotify.com/blog/our-playlist-ecosystem-is-evolving>

physical formats and download. What is sure is that the younger generations are increasingly influenced by the behaviour of others, not only their close social groups, but on large scale through social networks; therefore, the rapid growth of streaming and the consequent adoption could be interpreted as a social factor which amplifies the spread of streaming at the expense of other distribution channels.

2.3.5 Accessibility, ease of use and user interface

Nowadays, people rely heavily on smartphones to perform several activities and these devices have probably become the best channels for engaging customers, especially through smartphones apps (Kotler et al., 2016).

Music streaming services have increasingly become an intrinsic part of everyday life. These services are meant to be used on mobile, desktop or tablet to allow users to easily access the large music catalogue wherever and whenever they want, thus enhancing the digital music experience and providing people with the ability to listen to more music, more often. The intuitive user interface makes these music services useable even by people who are not accustomed to digital. Simplicity is the key. Generally, the search bar allows users to enter a keyword, the name of an artist, the title of an album or a song. In addition, music streaming apps are equipped with buttons that enable to browse podcasts, new releases, concerts (location-based and virtual events due to the Covid-19 pandemic), personalised music suggestions, contextualised playlists (based on users' mood) and music genres, facilitating research and discovery.

2.3.6 Trends and time

“Fashion is a way of behaving that is temporarily adopted by a discernible proportion of members of a social group because that chosen behaviour is perceived to be socially appropriate for the time and situation.” (Sproles in Chen et al. 2008)

Novelty and fashion-conscious consumers like new and innovative products, drawing enthusiasm from the active search for new things and trends (Im & Jung, 2016).

Music streaming is an effective way to meet fashion needs because music catalogues, playlists and charts are constantly updated, allowing users to follow trends immediately with just a few clicks. Since music streaming services provide access to the most popular and trending songs, as well as the newest, they might be the best choice for those who are fashion conscious (Im & Jung, 2016).

Moreover, with the introduction of new technologies, digitalisation and the advent of the Internet, consumers have become not only increasingly mobile and connected, but also increasingly demanding so that time seems to have become the scarcest resource in their lives: everything should be instant and time-efficient (Kotler et al., 2016).

This trend also applies to listening to music. With the spread of digitised content, it is no longer necessary to go to the record store to listen to music, but consumers can easily purchase or download a song or album with just a few clicks. On streaming services, this process is even faster: consumers can play the music even before the entire file has been transmitted⁴⁹. Thus, “time-sensitive consumers are expected to be more likely to use music content online, especially via streaming services” (Im & Jung, 2016).

2.3.7 Cross-border portability

The Regulation (EU) 2017/1128 of the European Parliament and of the Council of 14 June 2017 on cross-border portability of online content services in the internal market, also known as the portability regulation, enables consumers to access their portable online content services when they travel in the EU in the same way they access them at home.

The new rules aimed to improve the way Europeans access and use their online subscriptions to content (films, sports events, eBooks, video games and music services) when travelling or staying temporarily in another European country. Portability, together with mobile roaming and the removal of unjustified geo-blocking, is a cornerstone of the European Commission’s Digital Single Market policy.

⁴⁹ Download is required for offline listening only.

Chapter 3

The impact of online streaming

The second chapter has focused on music streaming, exploring the development of the so-called access-based music business models, the current dominating model for the distribution of recorded music, and has introduced the fundamental features behind streaming success.

This chapter will look more deeply into the transformation of the music industry. Starting with a general overview of the current industry, the chapter deals specifically with the impacts of streaming on sales, piracy and live music. The second section explores the changing relationship between music, listeners and social media.

3.1 General overview of the current music industry

The rise of the numerous music streaming platforms is creating a real evolution of the record industry, making streaming the single largest revenue source in the global music industry. In 2019, the global recorded music market grew by 8.2% to US\$ 20.2 billion, representing the fifth consecutive year of growth (Figure 3.1).

The growth was predominantly driven by fans' increasing engagement with music on paid streaming services, with the number of paid streaming subscribers rising to 341 million at the end of 2019 and an increase in associated revenue by 24.1%. Streaming represents the main driver for economic recovery in recent years, accounting, for the first time, for more than half (56.1%) of global recorded music revenue (Figure 3.2).

Figure 3.1. Global recorded music industry revenues 2001-2019 (IFPI, 2020).

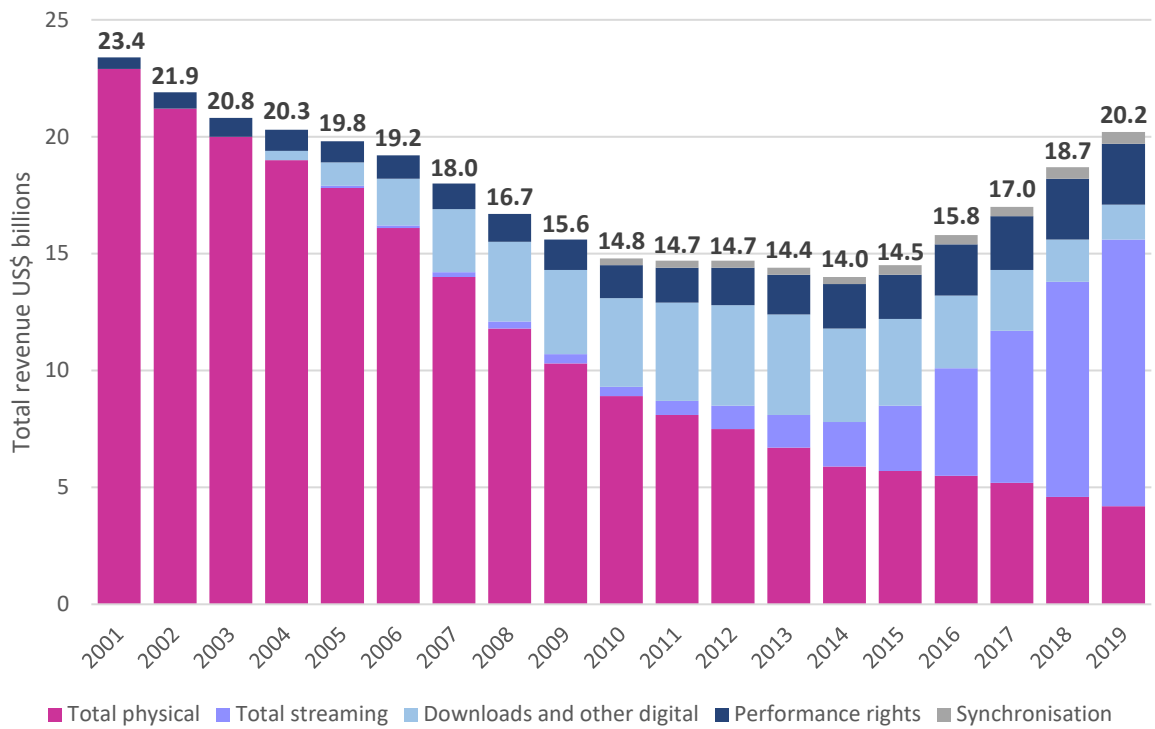
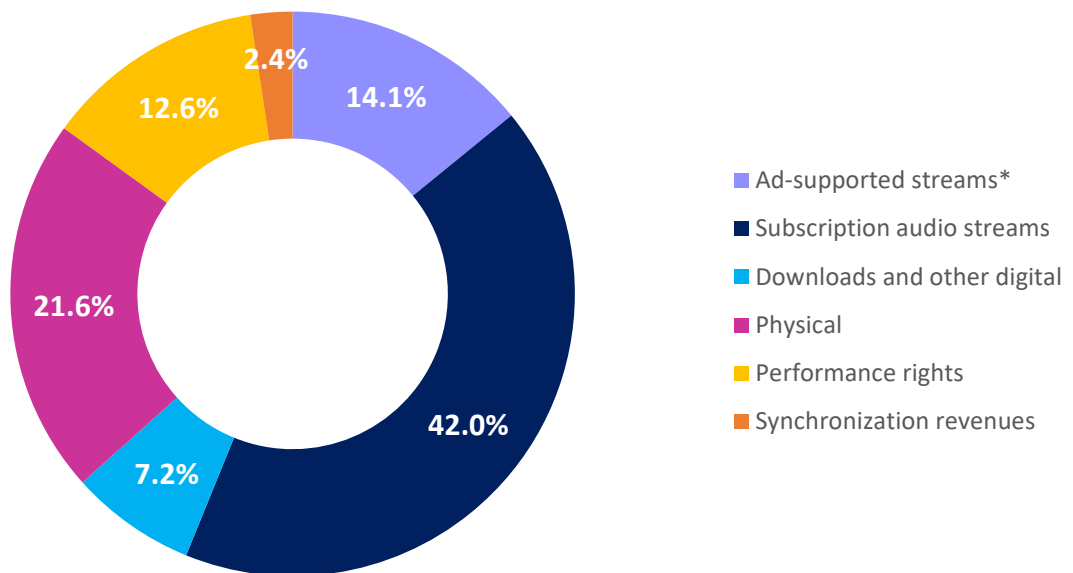
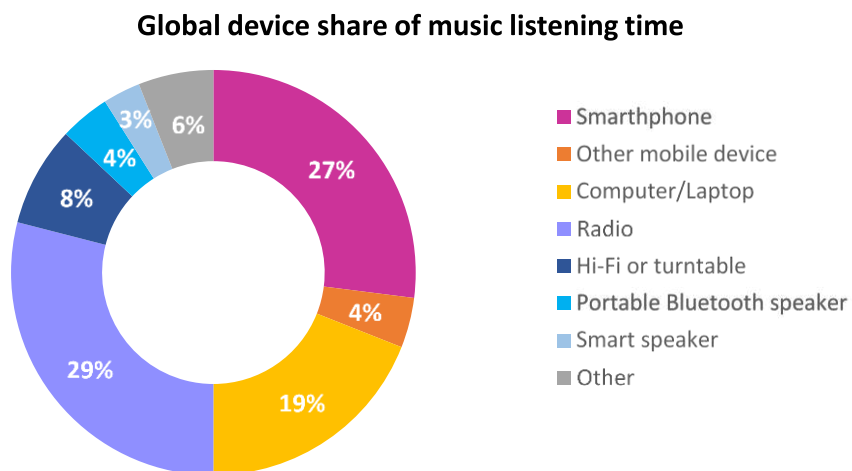
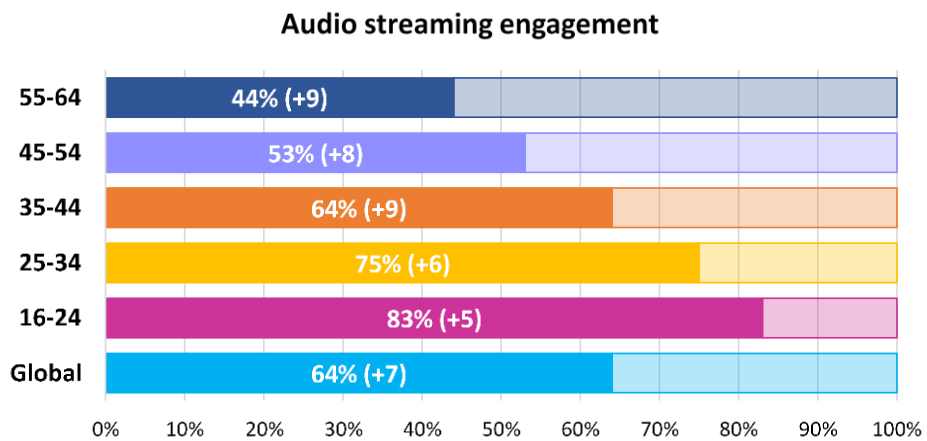
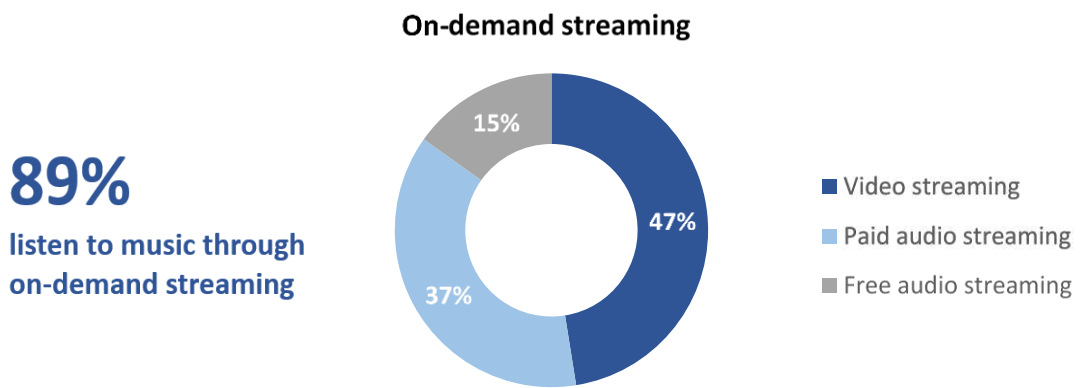


Figure 3.2. Global recorded music revenues by segment 2019 (IFPI, 2020).



* Includes ad-supported & video stream revenues.

Figure 3.3. Global music listening overview (IFPI 2019).



Based on IFPI *Music listening 2019*, report that provides a snapshot of how consumers aged 16-64 engage with recorded music across 21 countries⁵⁰, 89% of consumers listened to music through on-demand streaming⁵¹, spending an average of 18 hours per week listening to music, about 2.6 hours daily, which is equivalent to listening to 52 three-minute tracks a day⁵² (Figure 3.3). Video streaming accounts for 47% of on-demand streaming consumption globally, compared to 37% for paid audio streaming and 15% for free audio streaming.

Among the main reasons for paid audio streaming: “instant access to millions of songs” (62%) and the “ability to select their favourite music” (61%). Most people (54%) identify as “loving” or being “fanatical” about music and, among those aged between 16 and 24 years old, this percentage rises to 63%.

The highest growth in audio streaming adoption comes from the 35-64 age group, with 64% of 35-44-year-olds, 53% of 45-54-year-olds and 44% of 55-64-year-olds using an audio-streaming service. Radio remains an important part of people’s listening experience, accounting 29% of the time respondents spend listening to music, however, there is a rapid adoption of smartphones, with a 27% share of listening time, especially by younger users with 44% of the total music listening time of 16-24-year-olds on a smartphone. Pop is the world’s favourite music genre (also in Italy, accounting for 63%), followed by rock, oldies, hip-hop/rap, dance/electronic, indie/alternative, K-pop, metal, R&B and classical (Figure 3.4). The local repertoire still continues to dominate the Italian market, with Italian pop placing in the second place (61%) and “cantautorato” (or song writing) in fourth place (49%), behind rock (54%).

Back to global recorded music revenues by segment (Figure 3.2), digital revenues saw a drop of 15.3% in 2019, largely driven by a steep decline in download revenues, a format which account for just 5.9% of the total market, highlighting the shift of digital revenues towards streaming formats.

Physical revenues declined globally by 5.3%, representing approximately one fifth of the overall market (21.6%), but at a slower pace than the previous year (-10.3% in 2018). However, a small number of countries, including the United States (the world’s biggest music market),

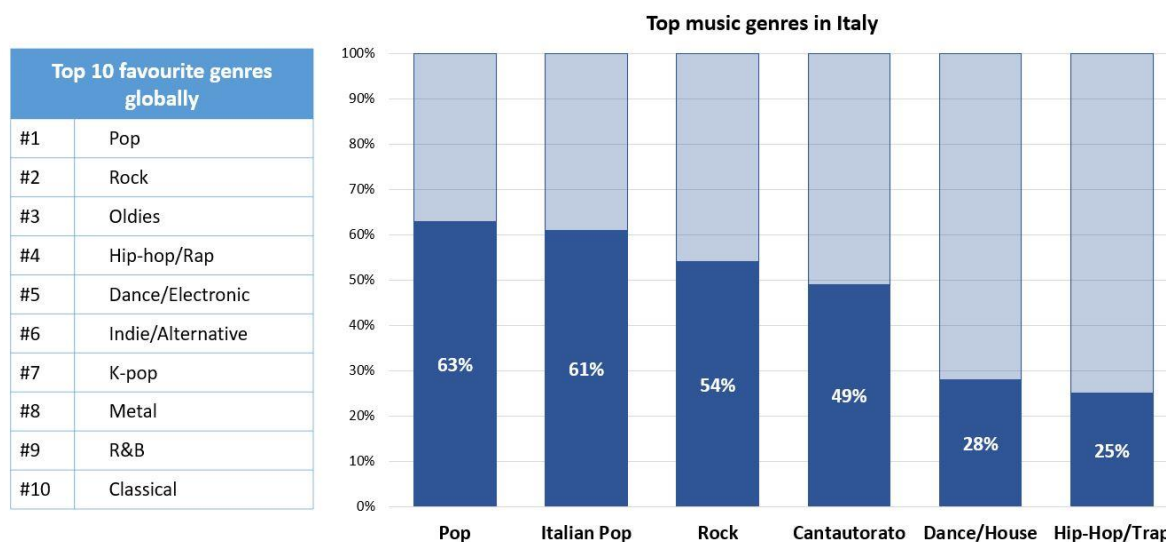
⁵⁰ For this report, 34,000 internet users (from Argentina, Australia, Brazil, Canada, France, Germany, Italy, Japan, Mexico, Netherlands, New Zealand, Poland, Russia, South Africa, South Korea, Spain, Sweden, United Kingdom and United States) were surveyed. According to IFPI’s Global Music Report 2019, these twenty-one territories accounted for 92.6% of global recorded music market revenues in 2018. The study was also conducted in China and India, but results are not included in “global” figures.

⁵¹ On-demand streaming includes video streaming, paid audio streaming and free audio streaming. Video streaming is defined by IFPI as video streams monetised by advertising or subscription models, such as YouTube official videos or VEVO.

⁵² In Italy, the time spent each week listening to music drops to 16.3, more than 2.3 hours daily, which is equivalent to 46 three-minute tracks a day.

experienced a growth in physical revenues, boosted by the renaissance in vinyl format sales, whose revenues now make up 16.4% of overall physical revenues.

Figure 3.4. Global and Italy Top music genres (IFPI 2019).



Revenues from performance rights, which include all forms of playing a song in a public venue or on radio, fell by 3.6% in 2019 but “this is largely attributable to one-off settlements in 2018, which inflated the prior year’s revenues in this area”⁵³. This accounts for 12.6% of total industry revenue overall, but “the industry believes this still does not represent fair value for rights holders”⁵⁴, as there are too many examples of music being played for an audience without the correct people receiving proper payment for such uses.

Synchronisation – the revenue from the use of music in advertising, film, games and TV – saw growth of 5.8%, maintaining a similar share of overall revenues to the previous year (2.4%). One way to explain this growth could be a change in music firms’ business strategies. Since the licensing of a song to an advertising campaign or to a film soundtrack may achieve considerable media presence instantly, the use of licensing as a means to increase record sales turns out to be an interesting choice. The days of traditional jingles are long gone, and music has become an essential ingredient for a successful commercial, capable of increasing attention, stimulating positive moods and influencing purchase intent and likelihood. Film and TV shows are often able to turn any soundtrack into commercial success, regardless of whether the song is old or new, such as “A star is born”, “La La Land”, “Guardians of the Galaxy”, “Stranger Things”, and “La Casa de Papel”. A precursor of synchronisation may be considered the “*Musicarello*”, a term that combines the words “music” and “carosello” to indicate a film

⁵³ International Federation of the Phonographic Industry (2019). *Global music report 2019*, p.15.

⁵⁴ International Federation of the Phonographic Industry (2018). *Global music report 2018*.

subgenre⁵⁵ emerged in Italy during the 1950s and 1960s, born from agreements between record and film companies. Music is also an integral component in video game production to enhance the gaming experience and create greater involvement. Fifa soundtracks, for example, are seen today as one of the most important annual showcases for international artists:

“...video games could become what MTV and commercial radio had once been in the 80s and 90s. Any given song in Fifa 19 – whether it is a new track by an established act or the debut of an unknown artist – will be heard around the world nearly one billion times. Clearly, no medium in the history of recorded music can deliver such massive and instantaneous global exposure.” (Ombler 2018)

Advertising campaigns, film, TV series and video games are also a great opportunity for musicians, producers and composers other than performers. The growing sync-licensing market is leading to the development of alternative platforms to streaming services, that offer subscription plans for unlimited access to royalty-free music or single-track licensing, designed to connect professionals from the music production sector on the one hand, and those from the film/video production sector (B2B⁵⁶) on the other hand (e.g. Artlist, Audiio, Music Vine, Musicbed).

The role of merchandising, the basic tool of the artist's cult created as a promotional tool, today has evolved into a real brand closely connected to the world of fashion (especially for pop stars), becoming one of the main sources of income for artists as well as a fundamental choice to compensate for the losses generated by the crisis in the physical market and the temporary postponement of live concerts due to the Covid-19 global pandemic⁵⁷.

The use of unlicensed sources to listen to or download music remains a global threat to the music ecosystem. According to IFPI *Music listening 2019*, 27% of all the respondents used unlicensed methods to listen to or obtain music, while 23% used illegal stream ripping services, the leading form of music piracy, described as obtaining of a permanent copy of content that is streamed online, to have music to listen to offline and avoid paying for a premium music subscription.

⁵⁵ The “Musicarello” was characterized by the presence of young Italian singers (such as Gianni Morandi, Mina, Adriano Celentano, Rita Pavone and Al Bano) already famous among their peers, who perform interpreting their most successful songs.

⁵⁶ More precisely, these platforms power the best brands, filmmakers, agencies and creators.

⁵⁷ Nowadays, more and more artists produce clothing (or “capsule collections”), cosmetics, gadgets, wine, beer, whisky or other spirits, and much more. For instance, Miley Cyrus designed a capsule collection for Converse, Lady Gaga and Rihanna launched their cosmetics brands, Bruno Mars has recently become a co-owner of the rum brand SelvaRey, Metallica in collaboration with Stone Brewing launched their “Enter Night Pilsner” beer.

The balance between the live music and the recorded music has shifted and revenues from live music have increased. According to Pollstar⁵⁸, the growth of the live business between 2015 and 2019 was considerable by every available metric (Table 3.1): the Top 100 Worldwide tours grosses jumped a massive 41% from \$3.93 billion to \$5.55 billion; the average gross per show rose an even higher 49% from \$861,887 to \$1.29 million; the average attendance per show grew 22% from 11,007 tickets per show to 13,397 while ticket sales only increased 14.9% from 50.2 million tickets in 2015 to 57.7 million tickets five years later. The average ticket price increased nearly 23% from \$78.30 to \$96.17, hitting \$288.07 for Lady Gaga’s ticket. Pink ranks first in the 2019 Top 100 Worldwide Tours, with \$215.2 million gross, an all-time record set by Ed Sheeran and his “Divide Tour” in 2018, with a massive \$432.4 million gross.

Table 3.1. Total Top-100 Worldwide Tours in numbers (Pollstar 2019).

Year	Gross	Average gross per show	Tickets sold	Average tickets sold per show	Average ticket price
2015	\$ 3.931.928.425	\$ 861.887	50.214.333	11.007	\$ 78,30
2019	\$ 5.549.081.431	\$ 1.288.387	57.702.066	13.397	\$ 96,17

However, the live music industry is really suffering through 2020, due to the global Covid-19 pandemic and the resulting restrictions. According to the new PwC *Global Entertainment & Media Outlook*, the money generated from live music ticket sales and sponsorships has fallen 64% in 2020, resulting in a loss of nearly US\$18 billion in the international concert industry⁵⁹.

In a world where information is abundant and attention is scarce, the music firm’s marketing costs to get that attention has increased. Today, record labels’ artist rosters have shrunk considerably, giving priority to artists with a broad audience appeal over artists with niche appeal, since the former ones are more likely to recoup the firm’s production and marketing investments. Furthermore, it seems that the major labels are no longer interested in developing new talent or musical genres, an activity that seems to belong almost exclusively to the smaller independent record labels (Wikström 2020).

The following sections will take a look at the literature to examine the impact of streaming on sales, piracy and live music.

⁵⁸ Pollstar (2019). *2019 Pollstar Business Analysis: The State of the Concert Business*. https://www.pollstar.com/Chart/2019/12/BusinessAnalysis_792.pdf

⁵⁹ IQ Live Music Intelligence (2020). *Live music down 64% this year but will rebound in 2021*. September 10. <https://www.iq-mag.net/2020/09/live-music-down-64-this-year-but-rebound-2021-pwc/#.X7vTkWhKhPY>

3.1.1 Streaming and sales

Since the rise of digital channels for music distribution, access-based streaming services, that rely on subscription fees or advertising as a revenue source, are the most controversial and intensively debated topic in the music industry due to the risk of cannibalisation of other distribution channels (e.g. purchases of CDs or downloads).

The rise of streaming has triggered a discussion among researchers about its impact on aggregate demand and industry revenues. The literature on the relationship between streaming and sales highlights two possible effects:

- *Replacement effect.* Consumers may consider music consumed as streams a perfect substitute for licensed purchases. In this case, music streaming services displace digital and physical music sales.
- *Stimulus effect.* Online music streaming could stimulate recorded music consumption, as it can be used as a sampling device to inform consumers about which products to purchase (Belleflamme 2016, Belleflamme and Peitz, 2010; Shapiro and Varian, 1999). In this case, music streaming services represent a music discovery tool, stimulating digital and physical music sales.

Some recent empirical articles show that streaming negatively affects purchasing. Hiller (2016), exploiting the removal of Warner Music content from YouTube during a contract dispute between January and October 2009, examine whether users who can no longer view content free would be inclined to purchase either digital or physical albums. The estimate of the coefficient associated to the dummy variable *Warner effect*, which indicates whether the album of a given artist was released during the Warner blackout period or not, show that Warner albums have sold on average more copies (around 6591 per week) than albums from other labels (Table 3.2). The other columns are obtained by replicating the same model for smaller samples, dropping the top 10, top 25 and top 50 albums, respectively. Results show a substantial sales displacement effect on top selling albums (generally those albums with considerable promotional support from record labels) and a rapid decrease of this effect with the album's ranking with no evidence of sales displacement for albums below the top 50. Thus, the streaming available at YouTube cannibalises sales of best-selling albums, while those albums that are not expected to be extremely successful benefit more from the promotion generating from having the material available for free on YouTube.

Table 3.2. Estimates of Warner_effect (Hiller 2016).

	(1)	(2)	(3)	(4)
	Full sample	Drop top 10	Drop top 25	Drop top 50
Warner effect	6591.39**	2551.82**	1717.82**	397.94
	(3135.94)	(1132.24)	(705.80)	(455.84)

It should be stressed that the promotional and displacement effect of non-interactive services⁶⁰ (such as Pandora) may well be different from that of interactive services where listeners have control over the content.

Aguiar and Waldfogel (2018a), conducted two types of analysis to determine the impact of the streaming growth on sales of recorded music. The first regression analysis, using week song-level data on track sales and Spotify's top 50 streams in different countries, show a positive relationship between streams and sales. The positive and statistically significant coefficient on streams, regardless the included set of fixed effects, in the neighbourhood of 64, means that an additional 1000 streams is associated with 64 additional track sales (Table 3.3). One possible interpretation for these results is that streams stimulate sales; alternatively, another possibility is that the relationship is contaminated by unobserved heterogeneity, in particular, songs that are popular in a given country in a given week are both streamed and sold at elevated rates.

Table 3.3. Artist level sales regression (Aguiar and Waldfogel, 2018a).

	Dependent variable: sales				
	(1)	(2)	(3)	(4)	(5)
	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.
Streams (thousands)	66.1267***	63.6605***	64.2270***	62.2120***	64.3192***
	(0.4836)	(0.6708)	(0.6699)	(0.7299)	(0.8654)
Country fixed effect	X	✓	✓	✓	✓
Week fixed effect	X	X	✓	✓	-
Artist fixed effect	X	X	X	✓	-
Artist-Week fixed effect	X	X	X	X	✓

*** Significant at the 1% level.

⁶⁰ Non-interactive streaming services are generally defined as those in which the user experience mimics a radio broadcast. The specific selection of songs and ordering are chosen by an algorithm and remain unknown to the listener. That is, users are unable to select a specific track or artist they want to hear.

Very different results are obtained aggregating the data to the country and week level, presenting negative and statistically significant coefficients, suggesting sales displacement by streaming services like Spotify (Table 3.4).

Table 3.4. Aggregated displacement estimates on sales (Aguiar and Waldfogel, 2018a).

	Dependent variable: sales				
	All (1) Coef./s.e.	All (2) Coef./s.e.	All (3) Coef./s.e.	US only (4) Coef./s.e.	US only (5) Coef./s.e.
Streams (thousands)	66.0252*** (2.1511)	-36.5918*** (5.4447)	-35.2462*** (5.7858)	-61.8072*** (29.6397)	-78.5501* (35.6612)
Country fixed effect	X	✓	✓	-	-
Week fixed effect	X	X	✓	-	Time trend

Note: Columns 4 and 5 include only US data. *** Significant at the 1% level.

Wlömert and Papies (2016), after observing a survey panel of 2,500 music consumers repeatedly over more than one year, show that the adoption of a free or paid streaming service cannibalises consumers' music expenditures on other channels. While they find a larger displacement effect for the adoption of a paid streaming service (24% decrease) compared to free streaming adoption (11% percent decrease), suggesting that consumers rely less on streaming services as a tool for sampling or discovering music that they may purchase later, their results also show a positive net effect of paid streaming services on revenue. That is, the positive effect of paid streaming outweighs the potentially negative effect of free streaming. They conclude that the overall effect of streaming services on music industry revenue is positive.

Differently, other studies give evidence of complementarity between streaming and purchasing. Nguyen et al. (2014), based on a survey data on 2,000 French consumers, show that the consumption of music through streaming services has no significant effect on physical music sales (such as CDs), suggesting that streaming is an online medium that promotes music (like TV or radio broadcasting). According to their results, the frequency with which the respondents watch musical TV programs, listen to music on the radio, or follow advice from friends, has a positive impact on buying recorded music. As expected, music taste, a variable reflecting consumers' attachment to music, is positive and significant, and age is a strong determinant of music consumption, with older individuals buying more CDs.

Kretschmer and Peukert (2014) take advantage of a royalty dispute between the YouTube video platform and the German collecting society and performance rights organization GEMA

which has led to the blocking of all videos containing music in Germany. Comparing sales in German to those in nine other countries where music videos are not restricted, they find that giving consumers access to free online music videos of an artist have no effect on the sales performance of individual songs but can actually trigger sales of the artist's album.

Aguiar and Martens (2016) use clickstream data on a panel of more than 16,500 European Internet users to analyse the relationship between different online music consumption channels, revisiting the question of sales displacement in the digital era and analysing how licensed online music streaming affects digital music purchasing behaviour. Their results show a positive relationship between the use of licensed streaming websites and licensed websites selling digital music, with some heterogeneity in the effects according to some individuals' profiles: consumers with higher interest in music view licensed streaming as a complement to licensed digital purchases to a larger extent.

Aguiar (2017) uses clickstream data on 5,000 French Internet users, which allow to precisely follow the online behaviour, and exploits the introduction of a listening cap on free streaming by Deezer, the French leading streaming platform. The findings present a positive effect of free music streaming on visits to both licensed and unlicensed music downloading websites. In particular the results show that following the imposition of the streaming cap, Deezer users visited digital music purchasing and piracy websites around 2% less than they would have had the restriction not been included. Furthermore, the results indicate heterogeneous effects of the restriction, with heavier users decreasing their visits to downloading websites to a larger extent.

Finally, Datta et al. (2018), relying on a panel dataset of music consumers to study the effects of Spotify adoption on individual music consumption and discovery, find that iTunes consumption drops by 28% about six months after Spotify adoption, which in turn increase overall music consumption, both quantity and variety, and facilitates discovery.

Music streaming platforms are perceived with suspicion by artists, who may look at the streaming market as a threat to the sale of their artistic production through alternative channels, especially when the content offering includes a free-of-charge service. The literature on the relationship between streaming and sales highlights two different effects: *replacement effect* and *stimulus effect*. While some recent studies such as Hiller (2016), Aguiar and Waldfogel (2018a) and Wlömert and Papies (2016) show that streaming and purchasing tend to be substitutes, other empirical articles such as Nguyen et al. (2014), Kretschmer and Peukert (2014), Aguiar and Martens (2016), Aguiar (2017) and Datta et al. (2018) provide evidence of some sort of complementarity due to the *discovery effect* described by Belleflamme (2016). As

some studies point out (such as Wlömert and Papies 2016), noteworthy is the fact that, even though streaming cannibalises other channels, the net effect on industry revenues may still be positive.

3.1.2 Streaming and piracy

In 2019, global streaming revenue grew by 22.9% to \$11.4 billion (Figure 2.3) and for the first time accounted for more than half (56.1%) of global recorded music revenue, with 341 million paid streaming subscribers at the end of 2019 compared to just 8 million in 2010 (Figure 3.5). This fast growth has raised many questions about the relationship between music streaming and music piracy.

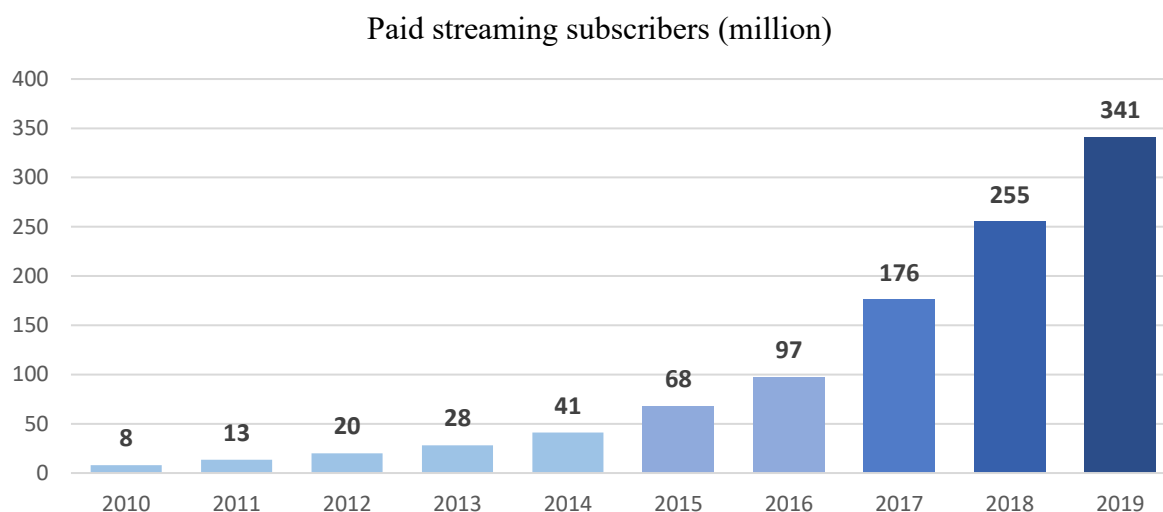


Figure 3.5. Global paid streaming subscribers 2010-2019 (Personal elaboration, source: IFPI)

Specifically, streaming and piracy could be perceived by consumers as substitute products with similar features, such as free of charge and rapid access to an extensive dataset of songs, or as complements, using streaming services as means for discovering new songs and then acquire them illegally. Understanding consumer behaviour and perceptions is required to define whether streaming displaces or contributes to illegal downloading of music. It should be emphasised that those who use streaming services “rent” songs, while the pirate illegally owns them, which differentiate the two products in the customer’s mind.

In addition, considering that the adoption of smartphones for music listening is growing rapidly especially among the younger generation (IFPI 2019), streaming requires extensive data usage for mobile users, which may be expensive, leading them to continue with piracy practices. However, unlike streaming, piracy carries a high risk of computer infections and legal penalties,

which nevertheless seem not to “hold back” young users, perhaps because they are unaware or careless of the consequences.

What is sure is that the younger generations are increasingly influenced by the behaviour of others, not only their close social groups, but on large scale through social networks; therefore, the rapid growth of streaming and the consequent adoption could be interpreted as a social factor which amplifies the spread of streaming at the expense of piracy.

The research on music piracy has focused on the one hand on the impact of piracy at the industry level, considering consumers' perceptions of comparable products and the resulting displacement effect, on the other hand on its impact on music creators (artists).

Waldfogel (2010) emphasises that the appearance of file-sharing and downloading technology might have different effects on sales, depending on whether the licensed option is a 12-song CD or *à la carte* songs. An individual interested in a few songs from a given artist may not consider buying the artist's entire album (which also contains unknown songs) but may still be willing to pay for the individual songs, instead of downloading them freely (but illegally). The effect of unlicensed downloading on individual songs and albums may therefore be different, assuming that file-sharing has a greater negative effect on album sales than on song sales.

Alternatively, since music is an experience good, unlicensed music consumption could also stimulate licensed music consumption, allowing consumers to sample specific songs or albums which can inform them on what to buy. However, as some studies show, the results are not that promising. Andersen and Frenz (2010), analysing the effects of peer-to-peer file-sharing on music sales, state that the positive sampling effect and the negative substitution effect cancel one another out, i.e. neither one of them is significantly larger than the other.

Likewise, the results of Aguiar and Martens (2016) find no evidence of digital music sales displacement by unlicensed downloading, thus suggesting a rather small complementarity between these two channels.

Following the second stream of literature on music piracy, Duchêne and Waelbroeck (2006), for example, show that increasing legal protection benefits well-known artists who use information-push technologies (i.e., marketing and promotion) but can hurt small-audience artists who benefit most from information-pull technologies (e.g., peer-to-peer networks), since digital copies allow consumers to discover their music. Similarly, Bhattacharjee et al. (2006) show that file-sharing technologies harm music superstars.

There is fewer research available dealing with the relationship between streaming and piracy. Sinclair and Green (2016), following 35 in-depth qualitative interviews, provide strong evidence that music streaming services and the establishment of legal music consumption alternatives are a more efficient way to tackle the problem of piracy than legal threats and strategies of guilt and fear appeals.

Borja et al. (2015), using a representative sample of 197 surveyed college students⁶¹ and their consumption behaviour, examined the determinants of digital music piracy by developing a set of hypotheses supported by prominent theories in the field. One of the questions they tried to answer is whether music streaming affects the likelihood of getting involved in music piracy (hypothesis 5, H5), finding a positive correlation between frequent use of streaming services and illegal downloading. Since the dependent variable is a dichotomous (i.e. binary) index that takes the value of one if the respondent illegally downloaded music and zero otherwise, a logit model is used to identify the factors that increase the likelihood of illegally downloading music. The *logistic regression model* (or *logit model*) is an appropriate regression analysis to model the probability of a dummy dependent variable, i.e. that takes only two values (0 and 1). The logistic regression model solves the problem generated by the use of the linear probability model. By definition, the probability of an event has to be between zero and one. While the *linear probability model* does not guarantee that the predicted probabilities will be in the correct range, the logistic regression model solves this problem by transforming the probability to remove the range restrictions. This happens in two stages:

1. By moving from the probability to the *odds*, calculated as a ratio of the probability of the event divided by the probability of not the event.

$$odds_i = \frac{\pi_i}{1 - \pi_i}$$

2. By taking the logarithms, computing the logit or log-odds, which has the effect of removing the range restriction.

Table 3.5. The probability of illegal downloading of music (Borja et al. 2015).

	Logit	Marginal effect (MgE)
H5-Music Streaming	0.98** (0.472)	23.5%

Notes. The dependent variable takes value one if the respondent illegally downloaded music and zero otherwise.

* Statistical significance at 1%. ** Statistical significance at 5%.

⁶¹ The sample has a fair mix of 99 males and 98 females, and is aged between 18 and 52 years old, with an average of 23 years of age.

Table 3.5, where the *marginal effect* is a measure of the effect that a change in a particular explanatory variable has on the predicted probability *ceteris paribus*, shows that music streaming increases the probability of engaging in music piracy by 23.5%.

Further research by Borja and Dieringer (2016) support the above study by conducting a survey on 1052 undergraduate students from two universities in South Florida. Using a logit model, they found that streaming complements piracy, providing evidence that these two modes of music consumption will coexist in the market. Table 3.6 outlines that streamers are more likely to pirate music by 11.4%, corroborating that pirates use streaming services to discover new artists' work and hits (sampling); beliefs of low or no risks associated with piracy increase the likelihood of illegal downloading of music by 33%, while the belief that piracy does not harm artists by 44.8%; other important factors describing attitudes toward piracy is social-peer behaviour and price-sensitivity, proving that streaming services are not perceived as a low-cost substitute to piracy.

Table 3.6. The probability of illegal downloading of music (Borja and Dieringer 2016).

	Logit	Prob.
Streaming	0.76* (0.25)	11.4%
Risk	4.79* (1.01)	33.0%
Artist concerns	3.98* (0.59)	44.8%
Peer pressure		
1. "my friends and I do it all the time"	4.45* (1.01)	38.3%
2. "we do not believe it is wrong to do it"	3.59* (0.59)	34.3%
Price		
1. "I do it because it is too expensive otherwise"	2.30* (0.24)	26.8%
2. "I do it because I couldn't afford all the music I want to download."	3.85* (0.51)	30.1%

Notes. The dependent variable takes value one if the respondent illegally downloaded music and zero otherwise.

* Statistical significance at the 1% level.

They also complete other models by including the streaming parameter in each of the regressions with the aim of demonstrating that streaming does not safeguard the music industry against the influence of social groups, perceptions about risk associated to piracy, industry and artist concerns and prices of substitute products (Table 3.7). For instance, adding streaming and peer pressure to the logit model, peer pressure increases the probability of music piracy by 37.9%, compared to 38.3% without the streaming parameter. As streaming continues to be positive and statistically significant, those who use streaming services and are influenced by their peers are more likely to engage in music piracy.

Table 3.7. The probability of illegal downloading of music (Borja and Dieringer 2016).

	Logit	Prob.	Logit	Prob.	Logit	Prob.	Logit	Prob.
Streaming	0.62** (0.26)	5.3%	0.49** (0.26)	3.4%	0.74* (0.25)	10.7%	0.59** (0.27)	6.8%
Peer pressure-1	4.42* (1.01)	37.9%						
Risk			4.77* (1.01)	32.7%				
Industry concerns					2.50* (1.02)	36.2%		
Price-1							2.28* (0.24)	26.5%

Notes. The dependent variable takes value one if the respondent illegally downloaded music and zero otherwise.

* Statistical significance at the 1% level.

** Statistical significance at the 5% level.

Aguiar and Waldfogel (2018a) show that “artists that are streaming more on Spotify in a given week tend also to be pirated more in the same week, after accounting for the various fixed effects”. Table 3.8 reports artist-level piracy regressions, highlighting a positive relationship between streaming and piracy.

Table 3.8. Artist level piracy regression (Aguiar and Waldfogel, 2018a).

	Dependent variable: piracy				
	(1)	(2)	(3)	(4)	(5)
	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.
Streams (thousands)	24.7935*** (0.3690)	24.8912*** (0.3662)	21.0029*** (0.4349)	21.5989*** (0.4173)	21.2895*** (0.4269)
Country fixed effect	X	X	✓	✓	✓
Week fixed effect	X	✓	✓	✓	–
Artist fixed effect	X	X	X	✓	–
Artist-Week fixed effect	X	X	X	X	✓

*** Significant at the 1% level.

Table 3.9. Aggregated displacement estimates on piracy (Aguiar and Waldfogel, 2018a).

	Dependent variable: piracy				
	All	All	All	US only	US only
	(1)	(2)	(3)	(4)	(5)
	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.	Coef./s.e.
Streams (thousands)	31.7058*** (1.4037)	-79.0524*** (6.9082)	-76.0528*** (6.8979)	-123.7270*** (32.7618)	-64.2560* (33.1009)
Country fixed effect	X	✓	✓	–	–
Week fixed effect	X	X	✓	–	Time trend

Notes. Columns 4 and 5 include only US data. *** Significant at the 1% level.

Very different results are obtained aggregating the data to the country and week level, where the growth in streaming leads to a reduction in piracy (Table 3.9). Therefore, the level of aggregation matters to identify displacement. However, their analysis includes only one type of service and does not distinguish between free and premium streaming, making it difficult to draw conclusions about the overall effect of streaming on recorded industry revenues.

While some studies analysed the impact of file-sharing and unlicensed downloading on music sales (such as Waldfogel 2010, Andersen and Frenz 2010, Aguiar and Martens 2016) or on music creators (such as Duchêne and Waelbroeck 2006 and Bhattacharjee et al. 2006), there is limited empirical evidence on the relationship between streaming and piracy. On the one hand, Borja et al. (2015) and Borja and Dieringer (2016) suggest that music streaming acts more as a complement than as a substitute of digital piracy, on the other hand, Aguiar and Waldfogel (2018a) conclude that music streaming leads to a reduction in piracy.

3.1.3 Streaming and live music

In an era where recorded music is ubiquitous, available anywhere at any time, it seems that the interest in live music has increased in parallel with the growing popularity of streaming services (Naveed et al. 2017). One reason may be that live music is perceived as a special kind of experience particularly intense, spontaneous and surprising, which stands out of our everyday listening (Kjus and Danielsen 2014).

The economic viability of live music has increased as recorded music revenue declines. As early as 2007, Frith noted that live music in the UK was one of the most buoyant sectors of the music economy (Frith 2007), and live performances indeed continued to grow (Pollstar), at least until the Covid-19 pandemic. In the wake of this development, there has been a steady increase in the number and magnitude of live music events (mostly festivals⁶²).

There is a growing scholarly interest in live music performances. A stream of literature deals with the impact of music piracy on ancillary markets, especially the live music market.

Gayer and Shy (2006), Curien and Moreau (2009) and Dewenter et al. (2012) show theoretically⁶³ that if live performances are enhanced by the “popularity” of the artists generated

⁶² Festivals can expand the crowd size at a lower cost than single-standing concerts through economies of scale, covering a great variety of artists with the same staging, ticketing and marketing costs (Frith 2007: 4).

⁶³ These papers provide no empirical evidence of their findings.

from the volume of distributed recordings (legal and illegal copies combined) due to the existence of a positive externality from the recorded music market to the live music market, file-sharing, although it may harm record sales, should improve the live music market by increasing artists' audiences.

Mortimer et al. (2012) empirically show that while file-sharing reduces album sales, it simultaneously increases demand for live performances, at least for lesser-known artists perhaps because file-sharing boosts awareness of such artists (for "stars" the impact is negligible), supporting the hypothesis that there is a complementary relationship between live and digitally distributed recorded music.

Krueger (2005) goes the same way, arguing that concert ticket prices have soared because artists have seen a sharp decline in record sales, as predicted by David Bowie who in 2002 advised performers:

"You'd better be prepared for doing a lot of touring because that's really the only unique situation that's going to be left." (Pareles 2002)

Based on a survey of artists, Bacache et al. (2015) show that those artists under contract with a record label who perform frequently on stage are more tolerant toward piracy, while artists who self-released their albums are less tolerant toward piracy (like record labels) probably because they have an investment to recoup. Hence, if the positive impact of piracy on the live market is high enough, artists can benefit from a limited amount of piracy.

Conversely, very few papers address the link between streaming and live music. Nguyen et al. (2014), based on a survey of 2,000 French consumers, study the effect of music consumption through streaming services on live music. They distinguish three categories of concerts, representing three different preferences for music:

1. *Classical music concerts*, which have a very socially oriented consumption and require some knowledge of the language of classical music to enjoy its refinement. The past few decades have shown a continued decline in concert hall attendance, accompanied by a loss of interest from young audiences and a shift towards older cohorts (Arenella and Segre 2019).
2. *Concerts by international or national stars*, which need less musical knowledge and are significantly subject to mass media promotion.

3. *Local concerts*, assuming that are related to less popular artists or bands, regardless the type of music, who are mainly promoted by word-of-mouth and local networks (e.g. local newspapers) and have a spatially limited audience.

The results in Table 3.10 show that streaming has a positive effect on the demand for concerts tickets by national and international stars but has no effect on concerts of classical music or by local artists, perhaps due to the low visibility of classical music and local artists on the streaming platforms, since for niche content or unknown artists, attracting the users' attention is still difficult on platforms which offers millions of videos and songs. This result recalls the findings of Mortimer et al. (2012), which show that file-sharing has a positive impact on concerts by unknown artists but not on more famous ones. This striking difference can be explained considering that record companies have a greater influence on the choice of featured artists on streaming services, while file-sharing platforms is consumer-oriented.

Looking at the other variables, we can see that, not surprisingly, age is a strong determinant of attendance of classical concerts and shows positive and significant coefficients for streaming practice⁶⁴, while the taste for music has positive and statistically significant coefficients for all types of concerts. It should be stressed that the taste for music and recommendations of friends exhibit both direct and indirect effects on concert attendance: on the one hand, they could have a direct effect on the attendance of concerts, on the other hand, they could influence music choices on streaming services and indirectly affect concert participation.

Table 3.10. The effect of streaming on international, classical and local concerts (Nguyen et al. 2014).

	STREAMING	INTER	CLASSICAL	LOCAL
STREAMING		0.566** (0.214)	0.0883 (0.200)	0.664 (0.346)
AGE24	1.525** (0.139)	-0.0606 (0.133)	-0.543** (0.122)	-0.204 (0.193)
AGE39	0.767** (0.104)	0.0728 (0.0969)	-0.492** (0.0882)	-0.108 (0.135)
AGE59	0.376** (0.0980)	0.0313 (0.0800)	-0.241** (0.0722)	0.0504 (0.106)
MUSIC_TASTE1	0.557** (0.105)	0.266** (0.0902)	0.452** (0.0817)	0.753** (0.122)
RECOM_FRIENDS	0.335** (0.0680)	0.150* (0.0591)	0.0732 (0.0535)	0.420** (0.0796)

⁶⁴ In line with the IFPI report *Music listening 2019* (Section 3.1) according to which the growth in the adoption of streaming involves all age groups.

Notes. The independent variables are dummy (or binary) variables that take value 1 if a given condition is satisfied, 0 otherwise. MUSIC_TASTE1 indicates a strong attachment to music (i.e. a great music lover). The authors check a long series of other independent variables, concerning the way music is usually promoted (radio, tv, recommendations of friends, etc.), consumers' attachment to music (music taste), socio-economic and socio-demographic characteristics, intensity of Internet use, etc.

Maasø (2018) explores how a large music festival in Norway impacts streaming patterns, showing a positive effect for several weeks surrounding the event period⁶⁵. Danielsen and Kjus (2019), building on Maasø's work (2018), analyse the data for three festival artist segments (headliners⁶⁶, medium international artists and local artists), finding that only for *local* artists there is a significant increase from pre- to post-event streaming (at least for a huge local festival).

The advancement of digital innovation such as artificial intelligence, machine learning, fintech, virtual reality and big data are leading the live music industry to transform into a *live-concert-streaming music industry* (Naveed et al. 2017). This represents a valuable opportunity in the scenario generated by the Covid-19 pandemic. Indeed, on the one hand, artists are increasingly relying on income from streaming platforms, on the other hand, they are looking for new ways to monetise music consumption, for example by "setting up" virtual concert-events on interactive live video streaming platforms⁶⁷ or within video games (as in the case of Travis Scott's recent performance in Fortnite⁶⁸).

Table 3.11 highlights the specific features of "live-concert-streaming music industry" (LCSMI), resulting from the co-evolution between streaming and live music industries:

- Livestreams and virtual concerts are provided as an alternative to in-person concerts.
- Live streaming concerts and new technologies, such as virtual reality, allow artists to engage viewers from remote locations and offer many opportunities to create an interactive and immersive virtual concert experience, encouraging fans to co-create value.
- Fans who are unable to physically attend live concerts can participate virtually.

⁶⁵ The data shows a 40 percent increase compared to control weeks, that is, before external media attention started turning to the festival, and before festival-related playlists began to be promoted actively within the service.

⁶⁶ The biggest and most popular artists of a music festival.

⁶⁷ For instance, Billie Eilish's "*Where do we go?*" livestream concert, aired live from Los Angeles on October 24, 2020, has been described as "virtual, multi-dimensional, interactive and immersive". Using state-of-the-art XR technology, multiple cameras, angles and 3D environments ticket holders were able to step into the world of the star.

⁶⁸ Shanley, P. (2020). Travis Scott's "Fortnite" in-game concert draws more than 12M concurrent viewers. *Billboard*, 27 April. <https://www.billboard.com/articles/columns/hip-hop/9366303/travis-scott-fortnite-in-game-concert-draws-12-million-viewers>

Table 3.11. Live-concert-streaming music industry, shareholders' role (Naveed et al. 2017).

	Company	Employee (Artist)	User (Consumer)	Government
Live concert	Concert promoter: the individuals or companies responsible for organizing a live concert tour or special event performance (e.g. Live Nation and Ticketmaster).	Tour artist: the tour promoter signs an employment or live performance contract with particular artists to perform in live concerts.	Fans/attendee: the individual who attend the live concert or performance.	Event promotion, licensing, noise restrictions, security requirements.
Physical	Record label: it coordinates the production, manufacturing, distribution, marketing, promotion and enforcement of copyrights for sound recordings and music videos.	Recording artist: a singer, musician who records music, or who fills in missing musical parts on a song. A pop star or a rapper who has a contract with a record label is an example of a recording artist.	Physical music consumer: buy physical music goods (LPs, cassettes, CDs, etc.) for ownership rather than for resale or use in the production and manufacturing.	Fighting piracy and copyright infringements.
Digital	Digital music provider: the companies who provide digital music downloading and streaming services such as iTunes, Amazon, Spotify, YouTube, Deezer, etc.	Artist: it includes recording and independent artists, whose music is available for downloading and streaming through digital music provider companies or directly	Digital music consumer: who download digital music or listen through online streaming services.	Lobbying to change laws against illegal file sharing (P2P), downloading and free usage.
Live concert streaming	Live streaming concert provider: the services that offer the live streaming of the concerts as an alternative to be physically present in the concerts.	Artist: by live concert streaming services the artists' live concerts can engage viewers from remote locations. The technologies such as virtual reality provide a lot of opportunities.	Virtual participant: the consumers who are unable to attend live concerts physically and they choose to participate virtually through live concert streaming services.	Encourage fans enhancing and co-creating value.

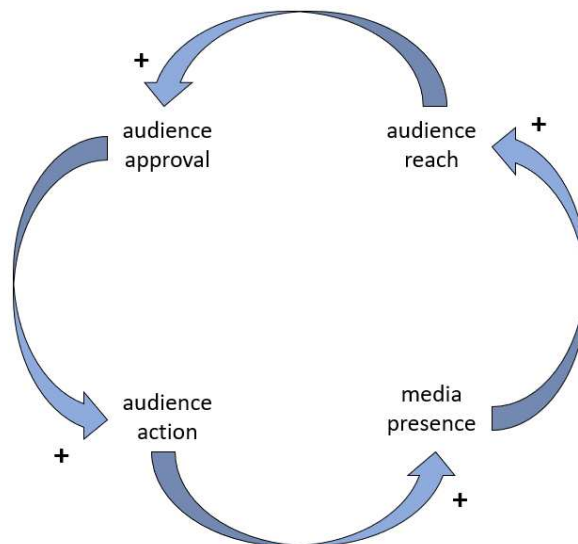
There is a growing scholarly interest in live music performances. A stream of literature deals with the impact of music piracy on the live music market, suggesting a complementary relationship (such as Gayer and Shy 2006, Curien and Moreau 2009 and Dewenter et al. 2012 and Krueger 2005), at least for lesser-known artist (Mortimer et al. 2012).

Very few empirical papers address the link between streaming and live music. On the one hand, Nguyen et al. (2014), recalling the findings of Mortimer et al. (2012), illustrate that streaming has a positive effect on the demand for concert tickets by national and international stars, but no effect on classical or local concerts; on the other hand, Maasø (2018) and Danielsen and Kjús (2019) underline the positive influence of a large music festival on streaming patterns. The development of new technologies is leading the live music industry to transform into a *live-concert-streaming music industry* (Naveed et al. 2017).

3.2 The interconnection between music, listeners and social media

As we saw in the previous section of this chapter, music is an integral part of most media: on the one hand all media (whether we are talking about film, radio, video games and television) depend on music to enhance their products, on the other hand, music completely depends on the media for the promotion, use and distribution of its products. The dynamics between the audience, the music and the media can be illustrated by the “audience-media engine” model described by Wikström. The model (Figure 3.6) is constituted by four variables: media presence, audience reach, audience approval and audience action.

Figure 3.6. Audience-media engine model (Wikström 2020)



In order for the audience to discover music and artists, the content has to appear in the media. *Media presence* represents the major media (television shows and radio shows, social media, video games, etc.) where the artist appears during a specific period of time, which can be improved through marketing and licensing activities. *Audience reach* is the percentage of total audience that the artist is able to reach through his/her media presence. *Audience approval* is defined as the share of all the audience members who respond positively when they come into contact with the work of a musical artist. *Audience action*, in its various forms, is what is expected to generate the firm’s revenues. These actions, for instance, might generate direct income (such as listening to a song via a streaming service, purchase music merchandise, records, or concert tickets), or actions that do not necessarily generate an immediate significant revenue for the music firm and are likely to result from a deep engagement with the artist

(activities on social media). Regardless of the action-type, audience action generates a delayed feedback effect on media presence that, together with the other three model variables, creates a reinforcing feedback loop on an artist's popularity and career.

3.2.1 The artist-brand

As we have seen the reinforcing feedback loop created by the links that connect media presence, audience reach, audience approval and audience action, serves as the engine which gives rise to (or ends) fads, brands, artists or genres. If the audience-media engine works against an artist or a music firm, it will be difficult or almost impossible to reach any kind of success, while, if the artist manages to get this loop to work in his/her favour, "it's all clear sailing" (i.e. things can only get better). Thus, this loop can be seen as the driving force behind any song, artist or band.

In a world where capturing and keeping the attention of the audience is increasingly difficult, the artist-brand concept is gaining ground as a platform for building loyal and profitable relationships between fans and artists. An artist has to imprint its uniqueness and defined identity in the mind of the audience, has to be recognised not only for his/her musical productions but also for his/her image and personality. The identity of the artist and his properties, not only from a musical point of view but also from a behavioural and cultural point of view, are enclosed within an image that totally coincides with the artist's being.

The increase in the number of artists on the music scene and the standardisation of the music content (especially in the world of pop music) has made the artist positioning process and personal branding necessary tools to stand out from other artists by creating a long-lasting relationship of trust with the audience.

The role of merchandising, the basic tool of the artist's cult, fits into this context. Created as a promotional tool, today merchandising has evolved into a real brand closely connected to the world of fashion (especially for pop stars), becoming one of the main sources of income for artists as well as a fundamental choice to compensate for the losses generated by the crisis in the physical market and the temporary postponement of live concerts due to the Covid-19 global pandemic. Nowadays, more and more artists produce clothing (or "capsule collections"), cosmetics, gadgets, wine, beer, whisky or other spirits and much more.

Today, with close reference to clothing, the boundaries between merchandising and the world of fashion are becoming increasingly blurred: the "tour merch" is no longer an obsession for memorabilia but (especially for the younger generations) it is a desire to own or wear

something authentic to show off, on the one hand as a distinctive sign of their own identity, on the other as a fashion item in line with trends.

3.2.2 The influence of social media

Social media have a huge impact on music by surging the level of interaction between musicians and their fans, on the one hand, allowing artists to reach out directly their fans, which helps to create a closer community with them, on the other hand, giving fans all over the world the possibility to connect with their favourite artists and share their version of a song or other musical content online. Indeed, in the new music industry, improved connectivity and more widely accessible upload capability have broken down the barriers, enabling every amateur musician to create, remix and publish music online (phenomenon referred to as participatory culture⁶⁹). Billie Eilish's "Bad Guy", which has surpassed one billion views on YouTube and has been performed by tens of thousands of people, has become "the world's first infinite music video", collecting thousands of covers⁷⁰ and blending them together to create an almost seamless experience⁷¹.

The ability to share songs, albums and playlists on social media platforms has not only given people new ways to show their followers what they are listening to, but also amplifies the discovery of new artists, potentially increasing their popularity. According to a study conducted by MusicWatch the 90% of social media users do a music-related activity on social media platforms, two out of three (63%) users agree that they are discovering new artists on social media, and almost 60 % of social media users are visiting streaming services to listen to music after they see an update, tweet or post, highlighting the mutual positive relationship between music and social media.

Today, *TikTok*⁷² is certainly one of the social networks that can determine the success of a song, becoming a real force in the music industry and 2020's most important social media-music platform: for an artist, the song that becomes the basis of a viral dance on the famous platform could mean tens of millions of streams and contracts with the most important record labels. The hip-hop-country crossover "*Old Town Road*" is perhaps the best-known case, rapidly evolved from viral content on social networks to a record-breaking song by number of

⁶⁹ Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. New York University Press.

⁷⁰ A song cover is a version of a piece of music by someone other than the original artist or composer of the song.

⁷¹ Campana, A. (2020). Bad Guy diventa il primo video musicale infinito della storia. *La scimmia pensa*, November 25. <https://www.lascimmiapensa.com/2020/11/25/billie-eilish-bad-guy-infinito/>

⁷² TikTok is a short-form video sharing social networking service that allows users to create and share 15-seconds videos, mostly lip-sync or dancing videos accompanied by a song, which is usually reinterpreted thousands and thousands of times.

consecutive weeks at the top of the Billboard Hot 100. The huge success and popularity achieved with viral memes on TikTok is tempting not only for newcomers or early career artists but also for established ones or megastars, influencing both the record industry's promotional strategies and music itself.

The following section will try to shed some light on the changing power of streaming platforms, due to the dynamics with different groups of agents, also through the lens of playlists.

3.3 The power of music streaming platforms

As streaming becomes a major mode of content consumption, as well as a major source of revenues for content producers, the operators of streaming services secure an increasing market power in digital goods industries (Belleflamme 2016).

As we have seen in Section 2.3, beyond getting consumers access to a potential infinite music catalogue, a major value-creating function of a streaming platform is helping consumers to discover the music they like in the overwhelming variety of music offered and stay up to date on latest music trends.

Unlike some video streaming platforms such as Netflix or Disney+, music streaming platforms do not produce or own the content, but play a role in curating, organising and programming the content they circulate, creating in turn relations of dependency with content producers.

As indicated in chapter 2, streaming operators can be seen as digital platforms, that is, as *intermediaries* that facilitate and manage the interaction on the Internet between different groups of agents, connecting up to three categories of users: content producers (artists, record companies, etc.), consumers and (sometimes) advertisers. To succeed, platforms must address the *chicken-and-egg problem*, making sure to get all sides on board (Rochet & Tirole 2003) and trying to balance potential conflicting interests. Cross-group externalities exist across these three groups. On the one hand, a positive externality across content producers and consumers, since more music and artists on the platform create value for consumers with a larger library, while more users on the platform increase the potential royalties for artists; on the other hand, a negative externality across advertisers and consumers, since companies that place advertisements on the platform benefit from an increasing number of users, while subscribers suffer from an increase in commercials, representing a nuisance. Therefore, the power of

streaming platforms is an unstable and ever-changing outcome of the ongoing attempt to coordinate between these different group of agents (Prey 2020).

Playlists, the lingua franca of streaming, are the main tools through which music is organised and presented in music streaming platforms, which consist of a collection of songs by one or more artists linked by a common genre, theme, mood or activity.

Among the several music streaming services, the one that currently seems the most relevant to artists and music labels is Spotify, which is often described as the “new radio” for its ability to influence breaking new songs and artists (Shah 2018).

Thousands of playlists are available to users on Spotify (Section 2.3.4). However, not all playlists are equally influential:

“Spotify’s curated lists have over three quarters of the followers of the top 1,000 playlists; Spotify’s algorithmic lists have another 9.3 percent. The lists operated by the major record labels, Filtr, Digster, and Topsify, have 3.1, 2.7, and 0.9 percent of the top 1000’s cumulative followers. The remaining list owners have negligible shares.” (Aguiar and Waldfogel 2018b, p.8)

While Spotify claims that the growing centrality of its own playlists is a natural outgrowth of its data-driven listener-centred model, critics, on the other hand, have interpreted it as a “grab for power and control in music” (Pelly, 2017).

Research seems to confirm and demonstrate the pivotal role of *Spotify-generated playlists*⁷³ on artists’ careers. According to Aguilar and Waldfogel (2018b), getting on Today’s Top Hits boosts streams by almost 19.4 million and revenue per song up to nearly \$163,000, while other Spotify-curated playlists generate an even higher payout (Table 3.12).

Playlists represent a tool that allows, on the one hand, to gradually reduce platforms reliance on record labels by slowly increasing the share (at least in curated playlists) of independent artists who avoid label distribution and directly license music to the service (Section 1.2.2), on the other hand, to exploit curatorial power to obtain the support of the major labels. Therefore, a relationship of mutual dependence is established between streaming platforms and content producers. Indeed, while record labels are increasingly dependent on streaming platforms for the key role playlists play in stimulating music consumption and demand, on the other hand

⁷³ Spotify-generated playlists are available to all users on the service, which means that the more the songs that make up these playlists are streamed, the more visible they become.

streaming platforms are heavily dependent on record labels for their need for music content and to facilitate global expansion.

Table 3.12. Additional revenue per song generated by some Spotify-generated playlists (Aguiar and Waldfogel 2018b).

Playlist	Revenues	
Today's Top Hits	116,397	162,956
RapCaviar	60,256	84,372
Viva Latino	303,047	424,265
Baila Reggaeton	164,305	230,027

As indicated above, some music streaming platforms not only interact with users and content producers, but also with advertisers. As a result, “music is marketed to listeners who are, in turn, marketed to advertisers” (Prey 2020). As Spotify explained:

“We believe we understand people through music, their mood, mindset, activities, and tastes, and we can serve them relevant advertising catered specifically to them.” (United States Securities and Exchange Commission 2018, p.116)

Consequently, playlists also become an efficient tool for streaming services with a *freemium* business model to segment consumers for advertisers, while trying to mediate with major labels that require higher restrictions for the free tier of the service.

Conclusions

This work stems from the attempt to find an area of investigation in which to apply two different interpretations that come from my personal training: economics and music.

These pages were created with the intent of analysing the current state of the music industry by focusing the investigation mainly on the changes produced by music streaming platforms.

The first chapter presented an overview of the music industry, outlining its various definitions and its main segments, thus arriving at the most shared subdivision (*recording*, *publishing* and *live music*), then trying to illustrate the dynamics between these three areas through some conceptual models that mainly represent the music industry of the 20th century. A brief historical overview was then introduced, retracing the changes that have taken place since the 19th century which led, first, to the dematerialisation of music with the advent of piracy and secondly to the unbundling of music content with iTunes.

The second chapter concluded this historical overview, focusing exclusively on music streaming. Streaming operators can be seen as digital platforms, i.e. as intermediaries that facilitate and manage the interaction on the Internet between different “sides”, connecting up to three groups of agents: content producers (artists, record companies, etc.), consumers and (sometimes) advertisers.

After describing the shift to streaming, the market was analysed by considering the main streaming services and business models (subscription based, ad-supported and *freemium*⁷⁴), giving particular emphasis to the latter, trying to illustrate some theoretical models that have contributed to the related literature. Some studies examined the strategic decisions of a

⁷⁴ A “hybrid model” that includes a basic ad-supported version of the service for free and a premium subscription version with additional benefits.

monopolistic streaming operator, while others extended the analysis to the duopoly competition case. These papers outlined that the optimal-business-model choice depends on the advertising nuisance of the free-ad-supported service, the size of the potential market of the music streaming platform or the extent of initial investment costs for the introduction of a further version of the service. Moreover, some success factors of these services were defined: price, quality, size and variety of the music library, discovery and personalised experience, accessibility and ease of use, trends and time, cross-border portability.

Finally, the third chapter, starting with a general overview of the current state of the music industry per revenue segment, as well as with a snapshot of listeners' music consumption, tried to shed some light on the impact of streaming on sales, piracy and live performances, through a survey of the related literature.

Music streaming platforms are perceived with suspicion by artists, who may look at the streaming market as a threat to the sale of their artistic production through alternative channels, especially when the content offering includes a free-of-charge service. The literature on the relationship between streaming and sales highlights two different effects:

- *Replacement effect*, i.e. streaming and purchasing tend to be substitutes;
- *Stimulus effect*, i.e. there is some sort of complementarity due to an effect described by Belleflamme (2016) as *discovery*.

However, as some studies pointed out, noteworthy is the fact that, while streaming may cannibalise other channels, the net effect on industry revenues may still be positive.

The same goes for the limited empirical evidence on the relationship between streaming and piracy. The literature suggests, on the one hand, that music streaming acts more as a complement than as a substitute of digital piracy, on the other hand, that music streaming leads to a reduction in piracy (replacement effect).

Very few empirical papers address the link between streaming and live music, suggesting a positive effect of streaming on the demand for concert tickets, at least for national and international stars. Differently, other studies underline the positive influence of large music festivals on streaming patterns. The development of new technologies is leading the live music industry to transform into a *live-concert-streaming music industry* (Naveed et al. 2017), a transformation that is undergoing further acceleration due to the Covid-19 global pandemic.

To conclude, the chapter examined the changing power of streaming platforms, due to the dynamics with different groups of agents, also through the lens of playlists. A relationship of mutual dependence is established between streaming platforms and content producers. Indeed,

while record labels are increasingly dependent on streaming platforms for the key role playlists play in stimulating music consumption and demand, on the other hand, streaming platforms are heavily dependent on record labels for the need for music content and to facilitate their global expansion. Additionally, playlists become an efficient tool for streaming platforms to segment consumers for advertisers, while trying to mediate with major labels that require higher restrictions for the free tier of the service.

BIBLIOGRAPHY

Adorno, T. W. (1938). Il carattere di feticcio della musica e la regressione nell'ascolto. *Theodor Adorno et al., La Scuola di Francoforte. La storia e i testi*. Einaudi Editore, ed. 2005.

Adorno, T. W. (1941). *Sulla popular music*. Armando Editore, ed. 2008.

Aguiar, L. (2017). Let the music play? Free streaming and its effects on digital music consumption. *Information Economics and Policy*, 41, 1-14.

Aguiar, L., & Martens, B. (2016). Digital music consumption on the internet: evidence from clickstream data. *Information Economics and Policy*, 34, 27-43.

Aguiar, L., & Waldfogel, J. (2018a). As streaming reaches flood stage, does it stimulate or depress music sales? *International Journal of Industrial Organization*, 57, 278-307.

Aguiar, L., & Waldfogel, J. (2018b). *Platforms, promotion, and product discovery: Evidence from Spotify playlists* (No. w24713). National Bureau of Economic Research.

Aitamurto, T. (2015). The role of crowdfunding as a business model in journalism: A five-layered model of value creation. *Crowdfunding the future*, 189-205.

Andersen, B., & Frenz, M. (2010). Don't blame the P2P file-sharers: the impact of free music downloads on the purchase of music CDs in Canada. *Journal of Evolutionary Economics*, 20(5), 715-740.

Aniftos, R. (2020). How to watch Billie Eilish's 'Where do we go?' livestream concert. *Billboard*, 24 October. <https://www.billboard.com/articles/columns/pop/9472363/billie-eilish-where-do-we-go-livestream-how-to-watch>

Apple (2019). *Apple Annual Report 2019, SEC Filing Form 10-K*. [https://s2.q4cdn.com/470004039/files/doc_financials/2019/ar/_10-K-2019-\(As-Filed\).pdf](https://s2.q4cdn.com/470004039/files/doc_financials/2019/ar/_10-K-2019-(As-Filed).pdf)

Arenella, O. & Segre, G. (2019). Il pubblico della musica classica: innovare l'offerta per ampliare il consumo dei giovani. *Quaderni IRCrES*, 4(2), 3-18.

Armstrong, M. (2006). Competition in two-sided markets. *The RAND Journal of Economics*, 37(3), 668-691.

- Attali, J. (1985). *Noise: The political economy of music*. English translation by Brian Massumi. Minneapolis: University of Minnesota Press.
- Bacache-Beauvallet, M., Bourreau, M., & Moreau, F. (2015). Piracy and creation: The case of the music industry. *European Journal of Law and Economics*, 39(2), 245-262.
- Belleflamme, P. (2016). The economics of digital goods: A progress report. *Review of Economic Research on Copyright Issues*, 13(2), 1-24.
- Belleflamme, P., Peitz, M. (2010). *Digital piracy: Theory*. CESifo Working Paper, No. 3222, Center for Economic Studies and ifo Institute (CESifo), Munich.
- Berschadsky, A. (1999). RIAA v. NAPSTER: A Window onto the Future of Copyright Law in the Internet Age. *J. Marshall J. Computer & Info. l.*, 18, 755.
- Bhattacharjee, S., Gopal, R. D., Lertwachara, K., & Marsden, J. R. (2006). Impact of legal threats on online music sharing activity: An analysis of music industry legal actions. *The Journal of Law and Economics*, 49(1), 91-114.
- Blake, E. (2020). Just how big was “Old Town Road” in 2019? *Rolling Stone*, January 10.
- Bonini, T., & Gandini, A. (2019). “First week is editorial, second week is algorithmic”: Platform gatekeepers and the platformization of music curation. *Social Media+ Society*, 5(4), 2056305119880006.
- Borella, A. (2015). Quel motivetto nella testa? Ecco perché ci perseguita. *La Repubblica*, November 1.
https://www.repubblica.it/scienze/2015/11/01/news/motivetto_musica_bachi_delle_orecchie_earworms_screen_saver_mente-126073603
- Borja, K., Dieringer, S., & Daw, J. (2015). The effect of music streaming services on music piracy among college students. *Computers in Human Behavior*, 45, 69-76.
- Borja, K., & Dieringer, S. (2016). Streaming or stealing? The complementary features between music streaming and music piracy. *Journal of Retailing and Consumer Services*, 32, 86-95.
- British Invisibles (1995). *Overseas Earnings of the Music Industry*. London, British Invisibles. Available at: <https://livemusicexchange.org/resources/the-overseas-earnings-of-the-music-industry/>

- Brown, S. C., & Krause, A. E. (2020). Freedom of choice: Examining music listening as a function of favourite music format. *Psychomusicology: Music, Mind, and Brain*.
- Burnett, R. (1996). *The global jukebox: The international music industry*. Psychology Press.
- Byrne, D. (2014). *Come funziona la musica*. Bompiani, 2 edizione.
- Campana, A. (2020). Bad Guy diventa il primo video musicale infinito della storia. *La scimmia pensa*, November 25. <https://www.lascimmiapensa.com/2020/11/25/billie-eilish-bad-guy-infinito/>
- Carroll, M. W. (2002). Disruptive Technology and Common Law Lawmaking: A Brief Analysis of A&M Records, Inc. v. Napster, Inc. *Villanova Sports & Entertainment Law Journal*, 9(1), 5-34.
- Carroni, E., & Paolini, D. (2017). Content acquisition by streaming platforms: Premium vs freemium. *CORE Discussion Papers No, 7*.
- Carroni, E., & Paolini, D. (2020). Business models for streaming platforms: content acquisition, advertising and users. *Information Economics and Policy*, vol. 52.
- Caves, R. E. (2000). *Creative industries: Contracts between art and commerce* (No. 20). Harvard University Press.
- Chen, Y.-C., Shang, R.-A., & Lin, A.-K. (2008). The intention to download music files in a P2P environment: Consumption value, fashion, and ethical decision perspectives. *Electronic Commerce Research and Applications*, 7(4), 411–422.
- Coleman, M. (2009). *Playback: from the victrola to MP3, 100 years of music, machines, and money*. Da Capo Press.
- Comino, S., & Manenti, F. M. (2014). *Industrial Organisation of High-technology Markets: The Internet and Information Technologies*. Edward Elgar Publishing.
- Crane, M. (2017). Has music streaming killed the instrumental intro? *Ohio State University*. <https://news.osu.edu/has-music-streaming-killed-the-instrumental-intro/>
- Crain, W., Tollison, R., (2002). Consumer choice and the popular music industry: A test of the superstar theory. *Empirica* 29:1–9.

- Curien, N., & Moreau, F. (2009). The music industry in the digital era: Toward new contracts. *Journal of Media Economics*, 22(2), 102-113.
- Dane, C., & Manton, K., (2002). *Counting the Notes*. London, National Music Council.
- Danielsen, A., & Kjus, Y. (2019). The mediated festival: Live music as trigger of streaming and social media engagement. *Convergence*, 25(4), 714-734.
- Datta, H., Knox, G., & Bronnenberg, B. J. (2018). Changing their tune: How consumers' adoption of online streaming affects music consumption and discovery. *Marketing Science*, 37(1), 5-21.
- Dewenter, R., Haucap, J., & Wenzel, T. (2012). On file sharing with indirect network effects between concert ticket sales and music recordings. *Journal of Media Economics*, 25(3), 168-178.
- Duchêne, A., & Waelbroeck, P. (2006). The legal and technological battle in the music industry: Information-push versus information-pull technologies. *International Review of Law and Economics*, 26(4), 565-580.
- Evangelista, B. (2002). Industry starting to endorse Net music/Listen.com to offer songs from all major labels. *SFGate*, July 1. Updated: January 28, 2012.
<https://www.sfgate.com/business/article/Industry-starting-to-endorse-Net-music-2801248.php>
- Fernández-Sotos, A., Fernández-Caballero, A., & Latorre, J. M. (2016). Influence of tempo and rhythmic unit in musical emotion regulation. *Frontiers in computational neuroscience*, 10, 80.
- Friedel, R. (2007). *Culture of improvement: technology and the Western millennium*. MIT Press: Cambridge, MA.
- Friedlander, J. P. (2018). News and Notes on 2017 RIAA Revenue Statistics. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2018/03/RIAA-Year-End-2017-News-and-Notes.pdf>
- Friedlander, J.P., and Bass, M., (2019). RIAA 2018 Year-End Music Industry Revenue Report. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2019/02/RIAA-2018-Year-End-Music-Industry-Revenue-Report.pdf>

- Friedlander, J.P., and Bass, M. (2020). Year-End 2019 RIAA Music Revenues Report. *Recording Industry Association of America (RIAA)*. <https://www.riaa.com/wp-content/uploads/2020/02/RIAA-2019-Year-End-Music-Industry-Revenue-Report.pdf>
- Frith, S. (2007). Live music matters. *Scottish Music Review*, 1(1), 1-17.
- Gayer, A., & Shy, O. (2006). Publishers, artists, and copyright enforcement. *Information Economics and Policy*, 18(4), 374-384.
- Girard, A. (1981). A commentary: Policy and the arts: The forgotten cultural industries. *Journal of Cultural Economics*, 5(1), 61-68.
- Hagen, A. N. (2016). Music streaming the everyday life. In *Networked Music Cultures: Contemporary approaches, emerging issues*, 227-245. Palgrave Macmillan, London.
- Harris, M., et al. (2019). Analyzing the Spotify Top 200 Through a Point Process Lens. *ArXiv*, *abs/1910.01445*.
- Hartley, J. (2007). The evolution of the creative industries – Creative clusters, creative citizens and social network markets. In *Proceedings Creative Industries Conference, Asia-Pacific Weeks*, Berlin.
- Hesmondhalgh, D., (2013). *The Cultural Industries*. London: Sage Publications, 3rd edition.
- Hiller, R.S. (2016). Sales displacement and streaming music: Evidence from YouTube. *Information Economics and Policy*, 34, 16-26.
- Hiller, R. S., & Walter, J. M. (2017). The rise of streaming music and implications for music production. *Review of Network Economics*, 16(4), 351-385.
- Hirsch, P. (1969). *The structure of the popular music industry*. Ann Arbor, MI: Institute for Social Research, University of Michigan.
- Hirsch, P. M. (1972). Processing fads and fashions: An organization-set analysis of cultural industry systems. *American journal of sociology*, 77(4), 639-659.
- Horkheimer, M. & Adorno, T. W., (1947). *Dialettica dell'illuminismo*. Einaudi Editore, ed. 2010.

Howe, N., (2019). How Music Streaming won over Millennials. *Forbes*, January 16. <https://www.forbes.com/sites/neilhowe/2019/01/16/how-music-streaming-won-over-millennials/?sh=7987ff6625c7>

Hracs, B. J., & Webster, J. (2020). From selling songs to engineering experiences: exploring the competitive strategies of music streaming platforms. *Journal of Cultural Economy*, 1-18.

Im, H., & Jung, J. (2016). Impacts of personal characteristics on the choice of music consumption mode: purchasing CD, downloading, streaming, and piracy. *Journal of Media Business Studies*, 13(4), 222-240.

Ingham, T. (2018). Spotify's direct distribution deals: what do artists get paid? *Music Business Worldwide*, September 23. <https://www.musicbusinessworldwide.com/spotify-direct-distribution-deals-what-do-the-artists-get/>

International Federation of the Phonographic Industry (2016). *Global music report: Music consumption exploding worldwide*.

https://www.musikindustrie.de/fileadmin/bvmi/upload/06_Publikationen/GMR/Global-Music-Report-2016.pdf

International Federation of the Phonographic Industry (2019). *Global music report 2019*. <https://www.ifpi.org/resources/>

International Federation of the Phonographic Industry (2019). *Music listening 2019*. <https://www.ifpi.org/resources/>

IQ Live Music Intelligence (2020). *Live music down 64% this year but will rebound in 2021*. September 10. <https://www.iq-mag.net/2020/09/live-music-down-64-this-year-but-rebound-2021-pwc/#.X7vTkWhKhPY>

Iqbal, M. (2020). Spotify Usage and Revenue Statistics. *Business of Apps*, October 30. <https://www.businessofapps.com/data/spotify-statistics/>

Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. New York University Press.

Kappel, T. (2009). *Ex ante crowdfunding and the recording industry: A model for the US*. *Loy. LA Ent. L. Rev.*, 29, 375.

- Kim, M. (2015). The secret math behind feel-good music. *The Washington Post*, October 30. <https://www.washingtonpost.com/news/to-your-health/wp/2015/10/30/the-mathematical-formula-behind-feel-good-songs/>
- Kopf, D. (2019). The economics of streaming is making songs shorter. *Quartz*, January 17.
- Kotler, P., Kartajaya, H., & Setiawan, I. (2016). *Marketing 4.0: Moving from traditional to digital*. John Wiley & Sons.
- Krader, K. (2020). Celebrities are cashing in on Tequila, but Bruno Mars bets on Rum. *Bloomberg*, November 20. <https://www.bloomberg.com/news/articles/2020-11-20/bruno-mars-has-stake-in-selvarey-rum-plans-global-domination>
- Kretschmer, T., & Peukert, C. (2014). Video killed the radio star? Online music videos and digital music sales. *CEP Discussion Papers*, (1265).
- Krueger, A. B. (2005). The economics of real superstars: The market for rock concerts in the material world. *Journal of Labor Economics*, 23(1), 1-30.
- Kjus, Y., & Danielsen, A. (2014). Live islands in the seas of recordings: The music experience of visitors at the Øya Festival. *Popular Music and Society*, 37(5), 660-679.
- Kumar, A. (2020). Global Online Music Streaming Grew 32% YoY to Cross 350 Million Subscriptions in 2019. *Counterpoint Research*, 3 April. <https://www.counterpointresearch.com/global-online-music-streaming-grew-2019/>
- Laing, D. (2012). What's It Worth? Calculating the Economic Value of Live Music. *Live Music Exchange Blog*, 12 June. <http://livemusicexchange.org/blog/whats-it-worth-calculating-the-economic-value-of-live-music-dave-laing/>.
- Lee, J. H., Cho, H., & Kim, Y. S. (2016). Users' music information needs and behaviors: Design implications for music information retrieval systems. *Journal of the association for information science and technology*, 67(6), 1301-1330.
- Leight, E. (2018). Why your favorite artist is releasing more singles than ever. *Rolling Stone*, May 7.
- Leyshon, A. (2001). Time-space (and digital) compression: software formats, musical networks, and the reorganisation of the music industry. *Environment and Planning A*, 33(1), 49-77.

Lingard, W. (2013). *Sounds perfect: the evolution of recording technology and music's social future*. Doctoral dissertation, University of Southampton.

Lipsman, A. (2007). For Radiohead fans, does “Free” + “Download” = “Freeload?”. *comScore*, November 5. <https://www.comscore.com/esl/Insights/Press-Releases/2007/11/Radiohead-Downloads>

Live Nation (2019). *Live Nation Annual Report 2019, SEC Filing Form 10-K*. <https://investors.livenationentertainment.com/sec-filings/annual-reports/content/0001335258-20-000028/0001335258-20-000028.pdf>

Maasø, A. (2018). Music streaming, festivals, and the eventization of music. *Popular Music and Society*, 41(2), 154-175.

Marshall, L. (2002). Metallica and morality: the rhetorical battleground of the Napster wars. *Entertainment Law*, 1(1), 1-19.

Marshall, L. (2013). The 360 deal and the “new” music industry. *European Journal of Cultural Studies*, 16(1), 77-99.

Miège, B., & Garnham, N. (1979). The cultural commodity. *Media, culture & society*, 1(3), 297-311.

Mock, T. (2004). 'Music everywhere: it's all about the algorithm, but which one will win?', *IEEE Spectrum*. <https://spectrum.ieee.org/consumer-electronics/standards/music-everywhere>

Mortimer, J. H., Nosko, C., & Sorensen, A. (2012). Supply responses to digital distribution: Recorded music and live performances. *Information Economics and Policy*, 24(1), 3-14.

Naveed, K., Watanabe, C., & Neittaanmäki, P. (2017). Co-evolution between streaming and live music leads a way to the sustainable growth of music industry—Lessons from the US experiences. *Technology in Society*, 50, 1-19.

Nguyen, G. D., Dejean, S., & Moreau, F. (2014). On the complementarity between online and offline music consumption: the case of free streaming. *Journal of Cultural Economics*, 38(4), 315-330.

Nunes, J. C., Ordanini, A., & Valsesia, F. (2015). The power of repetition: repetitive lyrics in a song increase processing fluency and drive market success. *Journal of Consumer Psychology*, 25(2), 187-199.

- Olivier, B. (2018). What's in store for the album format as streaming keeps breaking all the rules? Experts weight in. *Billboard*, 21 December. <https://www.billboard.com/articles/events/year-in-music-2018/8491284/album-format-changing-streaming-2018>
- Ombler, M. (2018). "Bigger than MTV": how video games are helping the music industry thrive. *The Guardian*, August 22. <https://www.theguardian.com/games/2018/aug/22/video-games-music-industry>
- Pareles, J. (2002). David Bowie, 21st-Century Entrepreneur. *New York Times*, June 9. <https://www.nytimes.com/2002/06/09/arts/david-bowie-21st-century-entrepreneur.html>
- Pearce, S. (2018). Considering the rise of the super short rap song. *Pitchfork*, March 15.
- Peitz, M., & Waelbroeck, P. (2005). An economist's guide to digital music. *CESifo Economic Studies*, 51(2-3), 359-428.
- Picard, R. G. (2011). *The Economics and Financing of Media Companies*. New York: Fordham University Press.
- Pierce, D. (2017). The secret hit-making power of the Spotify playlist. *Wired*, March 5. <https://www.wired.com/2017/05/secret-hit-making-power-spotify-playlist/>
- Pine, B. J., & Gilmore, J. H. (1998). Welcome to the experience economy. *Harvard business review*, 76, 97-105.
- Pollstar (2019). *2019 Pollstar Business Analysis: The State of the Concert Business*. https://www.pollstar.com/Chart/2019/12/BusinessAnalysis_792.pdf
- Prelec, D., & Loewenstein, G. (1998). The red and the black: Mental accounting of savings and debt. *Marketing science*, 17(1), 4-28.
- Prey, R. (2020). Locating power in platformization: Music streaming playlists and curatorial power. *Social Media+ Society*, 6(2), 2056305120933291.
- Rochet, J. C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, 1(4), 990-1029.
- Rodríguez, G. (2007). Lecture notes on generalized linear models. URL: <http://data.princeton.edu/wws509/notes/c4.pdf>.

- Rosen, S. (1981). The Economics of Superstars. *The American Economic Review*, 71(5), 845-858.
- Sato, S. (2019). Freemium as optimal menu pricing. *International Journal of Industrial Organization*, 63, 480-510.
- Savage, M. (2020). Pop music is getting faster (and happier). *BBC News*, July 9. <https://www.bbc.com/news/entertainment-arts-53167325>
- Scherer, D. A. (2016). *Money for Something: Music Licensing in the 21st Century*. Cornell University, ILR School.
- Shah, N. (2018). Spotify uproar points to the power of the playlist. *The Wall Street Journal*, June 6. <https://www.wsj.com/articles/spotify-disputes-point-to-the-power-of-the-playlist-1528307004>
- Shanley, P. (2020). Travis Scott's "Fortnite" in-game concert draws more than 12M concurrent viewers. *Billboard*, 27 April. <https://www.billboard.com/articles/columns/hip-hop/9366303/travis-scott-fortnite-in-game-concert-draws-12-million-viewers>
- Shapiro, C., & Varian, H. R. (1998). *Information rules: a strategic guide to the network economy*. Harvard Business School Press.
- Sinclair, G., & Green, T. (2016). Download or stream? Steal or buy? Developing a typology of today's music consumer. *Journal of Consumer Behaviour*, 15(1), 3-14.
- Sinclair, G., & Tinson, J. (2017). Psychological ownership and music streaming consumption. *Journal of Business Research*, 71, 1-9.
- Spotify (2018). Spotify SEC filing. United States securities exchange commission, Form F-1 Registration Statement, Registration No.333. Available at: <https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm>
- Spotify (2020). Spotify Technology S.A. to Announce Financial Results for Third Quarter 2020. *Spotify Investors*, 1 October. <https://investors.spotify.com/financials/press-release-details/2020/Spotify-Technology-S.A.-to-Announce-Financial-Results-for-Third-Quarter-2020/default.aspx>
- Sproles, G. B., & Kendall, E. L. (1986). A methodology for profiling consumers' decision-making styles. *Journal of Consumer Affairs*, 20(2), 267-279.

- Sterne, J. (2006). The mp3 as cultural artifact. *New media & society*, 8(5), 825-842.
- Szabo, N. (1999). Micropayments and mental transaction costs. In *2nd Berlin Internet Economics Workshop*.
- Thomes, T. P. (2013). An economic analysis of online streaming music services. *Information Economics and Policy*, 25(2), 81-91.
- Todesco, C. (2020). Guardate Billie Eilish, imparate a fare i concerti in livestreaming. *Rolling Stone*, 25 October. <https://www.rollingstone.it/opinioni/opinioni-musica/guardate-billie-eilish-imparate-a-fare-i-concerti-in-livestreaming/536388/>
- United States Securities and Exchange Commission (2018). Form F-1 registration statement, Spotify Technology S.A.
https://www.sec.gov/Archives/edgar/data/1639920/000119312518092759/d494294dfa.htm#rom494294_15
- Vafopoulos, M. N. (2012). The web economy: goods, users, models, and policies. *Foundations and Trends in Web Science*, 3(1-2), 1-136.
- Västfjäll, D. (2001). Emotion induction through music: A review of the musical mood induction procedure. *Musicae Scientiae*, 5(1_suppl), 173-211.
- Waldfoegel, J. (2010). Music file sharing and sales displacement in the iTunes era. *Information economics and policy*, 22(4), 306-314.
- Wallis, R. (2005). The Changing Structure of the Music Industry. *Music and Manipulation. Oxford. Berghahn Books*, 287-311.
- Wikström, P. (2012). A typology of music distribution models. *International Journal of Music Business Research*, 1(1), 7-20.
- Wikström, P. (2020). *The music industry: Music in the cloud*. Digital Media and Society Series, Polity Press.
- Williamson, J., & Cloonan, M. (2007). Rethinking the music industry. *Popular music*, 26(2), 305-322.
- Wlömert, N., & Papies, D. (2016). On-demand streaming services and music industry revenues—Insights from Spotify's market entry. *International Journal of Research in Marketing*, 33(2), 314-327.

World Intellectual Property Organization (2005). Copyright-based Industries: Assessing their weight. *WIPO Magazine*, issue 3/2005.

https://www.wipo.int/wipo_magazine/en/2005/03/article_0012.html

Zellermayer, O. (1996). The pain of paying. *Unpublished dissertation, Department of Social and Decision Sciences, Carnegie Mellon University, Pittsburgh, PA.*

Zenny, Y. (2020). Freemium competition among ad-sponsored platforms. *Information Economics and Policy*, 50, 100848.

SITOGRAPHY

<https://law.justia.com/cases/federal/district-courts/FSupp2/114/896/2343353/>

<https://www.findlaw.com/>

<https://www.businessofapps.com/data/spotify-statistics/#1>

<https://www.goodwatercap.com/thesis/understanding-spotify>

<https://www.spotify.com/it/>

<https://www.apple.com/it/apple-music/>

<https://www.amazon.it/>

<https://www.youtube.com/intl/it/about/press/>

<https://www.youtube.com/musicpremium>

<https://www.deezer.com/it/>

<https://tidal.com/>

<https://sensum.co/blog/the-sound-of-music-why-is-it-so-effective-in-advertising>

<https://artlist.io/>

<https://audiio.com/>

<https://musicvine.com/>

<https://www.musicbed.com/>

<https://www.stonebrewing.eu/beer/arrogant-consortia/enter-night-pilsner>

<https://www.ilpost.it/2020/06/13/tiktok-musica/>

<https://www.musicbusinessworldwide.com/>

<https://www.deezer.com/ucps>

<https://artists.spotify.com/blog/glossary-of-music-terms-streaming>

<https://artists.spotify.com/faq/stats>

<https://www.billboard.com/>

<https://www.rollingstone.it/>

<https://www.sec.gov/>

<https://www.riaa.com/gold-platinum/about-awards/>

