From Products to Consumption - Changes on the Swedish Music Market as a Result Of Streaming Technologies

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Abstract

Since the year 2009, the Swedish music market has changed drastically. In the first six months of 2013, 75 percent of total revenues to Swedish repertoire owners came from digital distribution. More than 90 percent of those revenues came from streaming. More than half of the population has a streaming subscription, and streaming has become the dominant format for consuming music on this specific market. As a result of this paradigm shift, changes have occurred in the Swedish music industrial system, as well as in user behaviors. This report examines how the Swedish music market has changed as a result of à la carte on demand streaming, explains the streaming model as such and give a picture of what these changes could mean for the future.

1. Introduction

When Jordan Ritter, Shawn Fanning and Sean Parker released the Napster application in the spring of 1999, it was an eye-opener for the music industry.\(^1\) Although mIRC and Winamp, as well as other applications and services, had shown the strength of compressed digital music combined with people-to-people distribution, Napster proved that digital delivery over the Internet was about to change the world of recorded music fundamentally.

During the last half of the 1980’s, as well as during the 1990´s, Swedish repertoire owners\(^2\) had seen a large increase in revenues for recorded music, as a result of the CD format as well as other factors (Arvidsson K., 2007; Johansson D., 2010; Fleischer R., 2012). In 2002, revenues for recorded music started to fall and continued to fall until 2009. In 2008, revenues for recorded music were at the same levels as in 1982, before the CD format became the dominating format in Sweden.\(^3\)

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\(^1\) The existence of a music "industry" has been debated in the academic context ever since the industrial perspective was introduced in the 1970’s. For a further discussion of what the music industry is, see 2.3.

\(^2\) In this paper, "repertoire owners" is the term used to describe the actors that owns the recording, who are also often referred to as record companies, or record labels, or master owners.

On October 7th 2008, the Spotify à la carte on demand streaming service was released on the Swedish market, as well as on a number of other markets. The interest for the service was immense already from the start. During the following years the à la carte on demand streaming format would become the dominating format for music listening in Sweden. In 2013, a projected 75 percent of all revenues to repertoire owners came from such streaming services. Ten competing streaming services were operational on the Swedish market in 2013: Spotify, WiMP, Deezer, Rdio, Napster (Rhapsody), Grooveshark, Sony Music Unlimited, Rara.com, Xbox Music, Radical.FM and the eleventh on the way, Google Music All Access.4

Although the streaming model clearly has changed the downward trend in revenues for recorded music in Sweden, there is still some work to do before the revenues to repertoire owners will be the same as they were during the heydays of the 1990’s. Whether this will happen with the streaming model, or not, is still to be seen, but as this report shows, the streaming model does have the potential of reaching the same revenue levels to the music industry as in 2000 and 2001, and even possibly exceed those levels. Such a positive development is dependent on a number of crucial factors, presented later on in the report. Since there seems to be quite a large amount of debate emanating from the shift of monetizing units of music towards monetizing the usage of music (Johansson D. 2013), this report tries to identify the key characteristics of the streaming model and how it has affected the Swedish music market as a whole, as well as describes some areas where there is need for further development, technologically, economically as well as organizationally.

4 This report is focused on streaming in the context of à la carte on demand services, not on Internet radio streaming services, such as Pandora, last.fm, iTunes Radio etc, or video streaming services like YouTube and Vevo. The economic and licensing model for such services differs from the model related to the à la carte on demand music streaming.

5 For a thorough analysis of the longterm development of Swedish repertoire owners, see Arvidsson K. 2007.
Revenues for recorded music had a long period of strong growth in Sweden, from the beginning of the 1980’s until the year 2001. The picture becomes a little different when adjusting revenues to Consumer Price Index (CPI), or the inflation of the country, although the overall trend is the same. The below graph is showing the development when revenues have been adjusted to CPI, with January 2013 being the reference point.

![Graph of Revenues Recorded Music in Sweden](image)

Revenues to repertoire owners in absolute figures, adjusted for CPI.

As the graphs show, the downturn in revenues to repertoire owners was extremely sharp during the years 2001 – 2008. Several studies have tried to identify the relationship between decentralized digital distribution and music sales over the years (Tanaka T. 2004; Edström Frejman A. 2006; Findahl O. 2005; Liebowitz S. J. 2006; Johansson D. 2013; Adermon, A. 2007; Blackburn D. 2004; Assane D. 2008; Zentner A. 2008; van Eijk N. et al 2010). It is clear that the downturn in revenues was related to several factors, of which I here present the three most important:

1) Decentralized distribution of music on by the rights holders non-approved file sharing networks. Although Napster was fairly popular in Sweden, it was KaZaa and Direct Connect that really got the attention from Swedish Internet users. The downturn in revenues during these years correlates strikingly well with user surveys on how many Swedes that were using filesharing networks to download digitized pirate copies of music (Johansson D. 2010).

2) No legal service that could meet the huge interest for digitized music. It took all the way until 2005 before the first legal à la carte download service with a catalogue containing the larger repertoire owner’s music was introduced on the Swedish market, when iTunes Store was released.
3) Changes in consumer behavior. During these years the increase in DVD sales, as well as computer and console games was large and influenced the interest of buying CD records. Also, during this particular period, there was a large increase in the amount of people buying tickets to festivals and live concerts in Sweden (see the upcoming report Music Festivals In Sweden - An Analysis of the Ten Largest Commercial Festivals 2000 – 2013, being released in December 2013).

The introduction of iTunes Store on the Swedish market had a very small effect on revenues to rights holders. Other download shops also tried to build a business model around music online during these years, but never succeeded. It was not until Spotify was released in 2008 that things started to happen.

The strategy for releasing the service created a huge expectation since it was only possible to use the service if you had a personal invite during the months preceding the official release. Many tried hard to get an invitation, and it almost became an alternative currency. On clubs, festivals and schools, people were trying to find someone who could give them an “invite”, and in retrospective it is obvious that this strategy was very successful. During the following years, a large portion of the population registered an account with Spotify and revenues to rights holders started to increase.

In Sweden though, as well as in many other countries, the debate on the streaming model has sometimes been fierce. Artists, composers, and smaller actors, has numerous times witnessed publically on the low amounts of payment they get from comparably large amounts of usage on streaming services, for example the Swedish artists Petter and Magnus Uggla in 2009, and Swedish Musicians Association (SMF) in 2013. But, not all artists have been negative towards the payout structure from streaming services. Although in a neighbouring country, Finland, the artist Anssi Kela in November 2013 published figures on revenues from streaming services for the period March to June 2013. In total, he received 2 336 euro for the hit song "Levoton Tytö", from the repertoire owner, which would mean 0.0023 euro on average for each stream. Although Kela is not revealing how high his royalty is on the revenues to the repertoire owner, it seems from these levels that he has a comparably standard share, perhaps a little higher. In a posting on his blog he also says that he in no ways are negative for this payout, since he has 79 tracks on the streaming services, and all of them combined will continue to generate revenue for a long time. Some Swedish independent repertoire owners have also witnessed on the positive economic effects from à la carte on demand streaming, for example Hybris.

So, there clearly seems to be a large discrepancy in the view of how the streaming model can benefit performers and composers in Sweden. At the same time as some performers have been critical, many record label executives, collecting societies, and other industry associations, have been positive, partly because the streaming model is the first model that are actually creating revenues at all in the digital environment. Several times, stakeholders in the Swedish music industry have dismissed the critique,
by proposing that performers and other criticizers simply do not understand the streaming model. One of the main purposes of this report is therefore to try to explain how the streaming model works, and what the model could mean for the future of music, both positive and negative.

1.1 From Products to Consumption - An Explanation

First of all, it is necessary to describe what this paradigm shift is all about. Ever since Thomas Edison invented the phonograph, recorded music has been sold in units, copies, as products. Whether the product was a phonographic cylinder, a Shellac disc, a vinyl Long Play record, a vinyl Single record, a magnetic cassette tape, a Compact Disc or during the latest years as an à la carte downloaded digitally compressed audio file; the copy, the unit, has been in the center of the business model, as well as being the foundation for the whole copyright regime is such.

The streaming model is a totally different approach to monetizing recorded music. It is based on creating revenue streams from the *usage* of music, the consumption, rather then selling products. The very act of listening to music generates payment to rights holders.

We could compare it to a car manufacturer that is giving away the car for "free", and instead is getting paid for each time someone is driving the car. Or furniture that would be given away for "free", but everytime someone is sitting in the chair a cent is transferred to the chair maker.

It is without doubt the largest shift in the history of recorded music, not mainly because it is a shift from analogue to digital media, but rather because it changes the whole economic model around recorded music, hence leading to new strategies for marketing activities, distribution processes, release cycles, as well as introduces new forms of complementing revenue streams.

The Compact Disc could be said to have been a "hybrid" format, something in between analogue and digital. The à la carte download model (iTunes Store etc.) was a fully digital model, but was still a part of the old paradigm, based on an economy around copies, units. In the streaming paradigm, the copy is not important, the copy is simply a temporary file, often stored in the "cloud", or in the "swarm", a non fixed copy that is being a part of the technical distribution process. The copy is in a sense gradually loosing its economic value in the digital context. The very act of listening to music is what matters, something that can be considered to be a part of the concept of an attention economy: "*In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.*"

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8 Since this report is focused on digital distribution, it is not concerned with tangible media. Of course, in the physical world, the copy is still important, and will most probably continue to be important for many years still.
(Simon H.A. 1971). In this paradigm, how the music arrives to the listener is not important, as long as the usage, or the attention, generates economical compensation to the rights holders in a controlled way. This is in accordance with the basic philosophy of the copyright ideology, as also being described in § 27 in the UN Declaration of Human Rights:

> Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

But the model itself is fundamentally different from all prior models. To compare it with the old paradigm; It would be like a customer that would go to the record store and get the CD for "free", go home and put the record in the CD player and for each song he or she listened to, the CD player would communicate that information to a central server that used this registration to give "centish" payments to the repertoire owner, the music publisher, as well as the composer and musicians performing on the recording.

Already in 1994, Paul Goldstein foresaw that this was about to happen, as a result of digital technology, and therefore coined the term a "celestial jukebox" to describe the new paradigm. In 2002, David Bowie made a foresighted comment in the New York Times, where he stated that "music will become like running water or electricity". Although it is a valid description of the reality we live in today, at least in Sweden, Bowie also stated that in ten years (from 2002), copyright would be dead, an assumption that was obviously not correct. In 2004, Chris Anderson described the Long Tail model, a result of how cheap and easy it is to store large amounts of digitized content online compared to tangible goods, and how this would influence the economic model around f.e. music. In 2005, Kusek & Leonhard gave a very detailed description of how they thought that "music like water" would develop. Still though, none of the above visionaries had a fully correct description of how the economic model would develop around à la carte on demand streaming just a few years later.

One could argue that from the rights holders perspective, the streaming paradigm is a much more fair system (later in the report, other perspectives will be presented that shows some potential unfair results as well, but from this particular perspective, the Pay Per Listen Model is much more fair then the Pay Per Unit Model). In the old paradigm, the repertoire owner, the music publisher, the artist and the composer, were getting the same payment for the product, regardless of how much the record was used. A customer could buy a CD, listen to it three times, and then throw it in the basement because she did not like it. The same customer could buy another CD and listen to that CD hundreds of times, in the car, play it at parties, DJ with it, make legal private copies (at least in Sweden) and give them to friends, and the music could be listened to over and over again.

10 "David Bowie, 21st-Century Entrepreneur"
The rights holders of the first record would still get the same payment as the rights holders of the second record (assuming that the end price and licensing structure were the same for both records).

The consumers listening behaviour was totally anonymous and completely disconnected from the economic model as such. It is from this perspective it is possible to argue that the streaming paradigm is much more fair. The music that is listened to most is also the music that is getting the largest monetary compensation. Understanding the effects of this shift from products to consumption is essential if one wants to explain the new paradigm around recorded music. It is plausible that this shift, in the long run, will have profound effects on copyright legislation, simply because the copy in this paradigm is non-essential. Other parts of the copyright doctrine will probably become much more important in the future, such as who has the right to simulcast streams, licensing schemes for end users public usage of music in the digital context, and automized licensing systems for dividing revenues from a large amount of third party products that is using music from different streaming services in their products.

Nevertheless, it is a huge shift, and we are just in the beginning. Before we proceed in analyzing the Swedish music market specifically though, it might be useful to describe what we actually mean by "streaming", from a technological point of view.

1.2 What is streaming?

All kinds of data transfers, which we call digital distribution, are essentially processes of copying bits, regardless of it being a single file or a “stream”. In the analogue world, distribution means moving something tangible from one location to another. The distribution process of physical goods has been based on transportation, when the goods leave the original location it is moving to some other location and can not be found at the original location. However, in the digital environment, all distribution of information is essentially a process of duplication.

To “visit” a web site is from a technical perspective the process of copying data hosted on a web server to the local cache memory of an installed web browser. The user is not viewing the web page on the web server, content is first downloaded, copied, before it is useable. Nevertheless, in this study, the term distribution is used since it describes what the processes are focused on, that is, getting information from one place to another. The fact that data, from a technologically pragmatic perspective, is copied rather than physically moved, does not change the result of the process, that is, information appearing somewhere it has not appeared before.

There are essentially three forms av data transfers (or copying mechanisms) on the Internet: Downloading, progressive downloading and streaming. Each of these mechanisms has their own characteristics:
1) **Downloading**

When data is downloaded, the information stored somewhere, either on a single machine or on several machines, is copied to your device. Usually you can not use the package until all the data has been downloaded, for example an app, a movie, or a music file. The downloading of data is the foundation for all data transferring online, and it is simply making a copy of data stored somewhere else. The other two forms of digital distribution are basically built upon the downloading category.

2) **Progressive downloading**

Progressive downloading is often mixed up with "true" streaming. YouTube, as well as most music à la carte on demand streaming services are essentially built on progressive downloading technology which basically means that you download (copy) data but can use it at the same time. The most obvious proof of a progressive downloading service is that you "buffer" data in advance compared to where you are in the "stream", f.e. on YouTube.

3) **Streaming**

Streaming is in a sense also a form of "downloading", since you are recieving data, but for the purpose of this study I choose to differ streaming from downloading. "True" streaming, from a strictly technological point of view, could be said to be a continuous flow of data that is pushed from a dedicated streaming server to a receiving client. Examples of true streaming are the online simulcasts of linear live radio (f.e. Sveriges Radio in Sweden), or the online simulcasts of linear television (f.e. Sveriges Television in Sweden).

The above descriptions are of course generalized, there are hybrid technologies that bridges this categorization and services that make use of all three forms of data transfers. Different streaming services for music have different technological solutions, some are based on P2P-distribution while others are based on strict client-to-server distribution.

A streaming service like Spotify is in fact more like a progressive downloading service, based on P2P-distribution. When you listen to a song on Spotify, data is downloaded not only from Spotify's servers but also from other users that have listened to the same song. As much as 90 percent of all the data does not come from Spotify's own servers (Kreitz G. & Niemel F. 2010), but from the cloud, the swarm of users. In this sense, Spotify could be said to be one of the largest file sharing networks in the world, presuming of course that the term "file sharing" in this context is a technical description of how a transfer (copying) of data commence, and not judicially polluted.

When you have listened to a song, this song is stored on your device, and the next time you listen to it, you listen to it directly from your own equipment. As much as 55 percent of all music that is listened to in the Spotify system are playbacks of songs already stored on the user devices. The files are encrypted, and functions as temporary copies being a
fundamental part of the technical process. And, just as all the other users share data on the network, you are also sharing "your" songs when the Spotify application is running, although you are not aware of the transactions happening in the background.

Is there any importance in separating theses different forms of digital distribution? Yes, and no.

From an end user perspective it is rather academic how data is transferred, as long as the experience is that of a stream, be it a stream of audio or a stream of video. But, from an economical, licensing and judicial perspective the differences between downloading, progressive downloading, and streaming becomes important. This is indisputably a result of the fact that the "copy" has been in the center of the copyright regime for a long time, and still is, also in the digital context. As long as the copy has an economical value in the digital environment, it is crucial to identify how this copy is made, who makes it, where it is stored, how it is shared etc, also in distribution forms based on progressive downloading technologies. This has been one of the obstacles for à la carte on demand streaming services when they initially approached rights holders and their representatives in the music industry.

Streaming services for music, regardless of the distribution technology behind the scene, uses different kinds of compression methods to make the audio files smaller. A regular CD has 1 411 200 bits of information for every second, the bitrate, or 1 411.2 kbps (kilobit per second).

Spotify uses Ogg Vorbis as audio codec, with 192 kbps bitrate for Spotify Free, and 320 kbps for Spotify Premium. WiMP uses AAC with comparably the same bitrates, but also makes use of non-destructive compression.12 Deezer uses Flash, Xbox Music uses Windows Media Audio, just to give a couple of other examples.

One could argue that the need for compressing audio, specifically in a destructive way, is only a result of limited bandwidth and storage capacity. It is plausible that when bandwidth and storage capacity have increased further, most audio streaming will be made in non-destructive formats.

There are of course many different forms of streaming services for music. This paper is most of all focused on what I have described as à la carte on demand streaming, which means that the user can search for a song, artist, album, and play that particular song on demand. There are streaming services that are more designed as personalized radio channels, (Pandora, iTunes Radio, last.fm etc), as well as video streaming services (YouTube, Vevo etc) that are also very important for the digital development around music, but they are not in focus for this report. This report is most of all concerned with how à la carte on demand streaming services have influenced the Swedish music market.

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12 A digital audio compression format can either be "destructive" or "non-destructive". If the format is destructive it means that data from the music itself is taken away, according to a so called psycho-acoustic model, while a non-destructive format only takes away redundant data, the "marginal", without touching the audio itself.
1.3 Preview of the report

In the introduction to this report, I have given an overview of what the paradigm shift from "products" to "consumption" means in general, as well as a short explanation of what we mean when we are talking about streaming from a technical point of view.

In chapter 2 I describe how the collection of data in this particular study has been conducted, as well as delimitations in the results of the study.

In Chapter 3 I dig a little deeper into the economics of streaming, explaining the Pro Rata Share concept and how much repertoire owners, artists, music publishers, composers, and other actors receive from streaming services, explaining why there seems to be conflicting views around the streaming model.

In Chapter 4 I present some of the organizational changes that has happened in the Swedish music industry during the studied time frame, and discuss some of the licensing challenges that have arises as a result of the streaming paradigm, f.e. the problem of licensing "last window out" and the Private Copying Levy.

In Chapter 5 I summarize the findings and discuss issues concerning privacy and integrity as well as present some thoughts on what the future might bring.
2. Research Methodology and Delimitations

The purpose of this report is twofolded. At the same time as it is somewhat formed as a scientific paper, the goal is that non-academics will be able to follow the presentation. Since there is an obvious need for knowledge on many issues surrounding streaming and the music industry, this was not a difficult decision to make.

Therefore, this chapter regarding methodology and delimitations, and the theoretical background for the study, has been kept as short as possible, describing the essential bits and pieces for those who it concerns. Still though, a short description of research on the music industry might be in place.

Different academic disciplines have different ways of conducting research. The difference between for example ethnographic studies and research in particle physics is considerable, as is the differences between research in computer sciences and research in arts. This report is a part of a PhD project in computer science, specifically on information models, that I have done during the latest years, with the focus of trying to explain the contemporary changes in the Swedish music industrial system and present a number of information models that from a technological standpoint could solve some of the problems emanating from these changes.

The purpose of research, in general, is to create new knowledge or perspectives on certain phenomena that have not been available before, or present new original solutions to old, or new, problems. In this sense, research is basically a structured way of developing the sum of knowledge (Dawson C. W. 2000).

A journalist can make research to find the necessary material for a specific article. A crime detective can make research that could help solve a crime. A carpenter can make research to find out the best way to build a terrace. The difference in making research in "ordinary" life compared to making scientific research is often based on the methods that are used to conduct the research. In science, systematical approaches to certain phenomena are necessary, how a researcher has come to a certain conclusion, is as important as the conclusion itself (Creswell J. W. 2003). In essence, if another researcher would have had the same data, and used the same methods, she would have come to the same conclusion.

2.1 Research Methodology

The information presented in this report has derived from both primary and secondary sources. Conversations and interviews with different stakeholders in the Swedish music industry has been a crucial part of the study. Quantitative data has been gathered from collecting societies, repertoir owners, music publishers as well as from streaming services themselves. Qualitative data in the form of information on deals, information on problems that the different actors are struggling with, descriptions of conflicts and ideological discrepancies have kindly been presented by different stakeholders in the Swedish music industry.
Some of this data is publically available, such as annual reports, economical development, articles and online debates, but some of the information presented has come from individuals active in the music industry and has most probably not been presented before. Therefore, by obvious reasons, I am sometimes not naming individual persons or organizations, or in detail revealing exactly where some specific information might come from. It makes the study weaker, but is still necessary because of the confidential nature of some of the information. This also means that some of the data collected has been hard to validate, since it might have derived from one single source. To the largest extent though, I have tried to leave out information that have not been possible to confirm and validate from other sources.

Since I am not only working as a researcher, but also works as a consultant for the Swedish music industry, towards repertoire owners, music publishers, collecting societies and other actors, the research can somewhat be described as "action research", that is, doing research at the same time as one influences the system that is being studied:

"Action research is primarily distinguishable in terms of its purpose, which is to influence or change some aspect of whatever is the focus of the research. In this sense it is concerned with the emancipatory purpose of research {...}. It adds the promotion of change to traditional research purposes of description, understanding and explanation. Improvement and involvement are central to action research. There is, first, the improvement of a practice of some kind; second, the improvement of the understanding of a practice by its practitioners; and, third, the improvement of the situation in which the practice takes place." (Robson C. 1993, 2002).

Being involved in the area that you are studying puts a little bit of "pressure" on yourself as a researcher. The purpose of research is, as described before, to find new knowledge on new, or old, phenomena, or in other ways expand the body of knowledge that we as humans collectively have. This might also include new perspectives on mental models that are governing the way our society works. There is no question that my active involvement in the shift from tangible music products to digital distribution, working closely with the Swedish music industry during the latest years, functions as a bias on my conclusions in this report. On the other hand, if I had not been so involved in the Swedish music industry, I would probably not have had so much "inside information" on how things work.

A researcher that is standing solely outside the social, economic, or organizational phenomenon being studied can not have the same insight to what is being studied. This is even true for sciences that are strongly following the positivistic science tradition. That being said, whether my bias is something positive or negative, is a matter of perception. This study is not fully falsifiable, and it is to a large extent related to my pragmatic work in the music industry during the latest years.
It is most of all descriptive, trying to explain a phenomena that has changed the Swedish music market drastically, with some more or less personal suggestions for how some of the problems that have arised during the latest years might be solved.

In addition to the earlier described collection of data, an analysis of news, press releases and articles related to the particular area has been conducted. Media items from August 1, 2008 to October 31, 2013 have been collected. In total 1 738 such items have been collected, tagged, and used both for analyzing the development as such, but also to identify particular events during these five years.

2.2 Delimitations

This report focuses primarily on the Swedish market, and how it has developed since the release of Spotify in October 2008. The results are not neccessarily applicable to other markets, although it is plausible that the same effects might be seen in other markets during the coming years.

Since Spotify is such a dominant actor in Sweden, much of the analysis is related to that particular service. Overall though, I have tried to make this study non-Spotify focused, and more concerned about the streaming model in general.

Also, the study is primarily focusing on à la carte on demand streaming, not on other forms of streaming solutions, such as video streaming, Internet radio etc.

The study is first and foremost interested in recorded music, and is not considering effects that streaming technologies might have had on other parts of the music industrial system, for example the live sector and such actors as music festivals, booking agencies, concert arrangers, agents etc. The study concerns mostly those actors that are a part of the direct economic system around recorded music, such as music publishers, repertoire owners, collecting societies, digital aggregators, digital white labels, the streaming services themselves, and of course, the performers, artists, musicians and composers. A strong focus is layed upon repertoire owners and actors related to them, since the streaming model, at least at the present moment, is influencing this category of actors more than others.

2.3 A Definition of the Music Industry

Many scholars have tried to define what the music industry "is" (Hirsch P.M. 1969; Leyshon A. 2001; Hesmondhalgh D. 2002, Tuomola A. 2004; Wallis R. 2004; Hallencreutz D. et al 2004; Tschmuck P. 2006; Wikström P. 2006; Arvidsson K. 2007). In this report, the concept of a music industry is somewhat separated from what I frequently call the music industrial system. A system of industrial processes related to music is described as something else than the traditional notion of a music industry.

I therefore define the music industrial system as all organizations, individuals and businesses that are receiving revenues from the organizing, production, performing or distribution of recorded or live music.
This definition clearly delimits the system to an economic perspective, leaving out all non-profit organizations and music activities that are not involving a monetary aspect. Whether this is good or bad, depends upon the purpose. Since the purpose of this report is to describe the streaming paradigm, mainly from an economic point of view, it is logical to focus on those parts of the music market that are actually getting paid for music.

In my definition of the music industrial system, the non-profit local music organization existing with the sole purpose of arranging free concerts for the general public, resulting in no revenues anywhere in the chain of events, is not a part of the industrial system, while the saxophone player standing on the corner of the street, collecting voluntary payment in his instrument case, is. Examples on actors that are a part of the music industrial system are live promoters, music publishers, song writers, record labels, musicians and artists, record stores (physical and digital), arrangers of concerts or festivals, labour organizations, industry associations, collecting societies, digital services for music and many other music focused businesses.

I choose to separate industrial actors in three forms of actors:

1) Primary actors
2) Secondary actors
3) Supporting actors

This division of actors has some resemblance with how Durmér H. et al (2002) defines the different actors in the music industry. They separate between: a) Pure actors, b) Partial actors and c) Temporary actors, and provides another component in the model, "influencing factors", used to describe how the functions within the music industry is influencing each other. I chose to use primary instead of pure, secondary instead of partial, and supporting instead of temporary.

Primary actors are those companies and organizations that usually are described as the core businesses of the music industry, such as repertoire owners, music publishers, collecting societies, managements, promoters, record stores, online music services and industry associations like International Federation of Phonographic Industry (IFPI) or Recording Industry Association of America (RIAA).

Secondary actors are those companies and organizations which primary business is not centered around music, but are still important to the music industrial system, such as Internet Service Providers that bundles online music services with their offers (such as Telia Sonera or Telenor), large stores that sells physical music products or/and offers digital services (such as MediaMarkt or Åhlens), or other organizations that are a part of the industrial system but do not have music as their core business.

Supporting actors are those companies and organizations that are important for the industrial system as such, but is not essentially receiving revenues on the music itself, such as developers of codecs and other technological solutions, manufacturers of audio equipment, instrument makers etc.
I also divide the music industrial system in three categories, or subsystems:

a) Recorded music
b) Live music
c) Rights management

Although these "sectors" within the music industrial system are closely working together on many areas, it is obvious that these three subsystems have their own specific prerequisites for running businesses. A collecting society is very different from a booking agency, as is a repertoire owner from a music festival. Also, social networks and relations tend to be stronger within each of the subsystem (Johansson D. 2008). The main reason for dividing the music industrial system into such a matrix, is that it simplifies the analysis of the development in each area over time.

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3. The Economics of the À La Carte On Demand Streaming Model

As earlier described, the economic model for streaming is based on a Pay Per Listen Model, rather than a Pay Per Unit Model. One listening, or one "play", is a track that is listened to more than 30 seconds. The payment to the rights holders of the track is done with a so called pro rata share, which basically means that the revenues received by a streaming service is divided to the rights holders based on how many approved plays a certain track has in relation to all the other tracks.

If a streaming service have 100 million total plays during one month, and a specific song has 100 000 plays during that month, the pro rata share of that song becomes 0,001, or 0,1 % of the "net subscription revenue" or "net advertising revenue", when applicable, which basically means the gross revenue minus approved deductions for the streaming service.

This is the simple equation, but as we shall see, it becomes rather complex when other parameters are taken into account, such as popularity and size of catalogue. Before we continue though, it is important to explain certain aspects of how copyright is implemented into the music industrial system.

To understand the economics around music streaming it is first of all essential to understand the difference between the artist and the composer. The copyright regime is implemented in such a way that there are two "competing", or rather "complementary"
rights, related to recorded music. The artist is connected to the owner of the recording, the repertoire owner, or the master owner as they are usually called by professionals. It is the owner of the recording that often invests in a production, and often takes the largest economic risk around a release of recorded music, at least to a certain point. The composer is connected to the music publisher, and this part of the copyright structure concerns the song, the musical piece itself, and not the recording. So, there is a large difference between the rights connected to the song (melody and/or text usually), and the rights connected to the recording of that song. One can say that the song comes first, and then the recording.

The composer of a song does not have to record the song to have the copyright for the song. Either the composer decides to register the piece with a collecting society, such as STIM in Sweden, or decides to guard the rights by herself.

The purpose of the music publisher is first and foremost to license and sell the song, not the recording. Hence, in a very simplistic way one could say that a music publisher "sells" the song made by a composer to a repertoire owner, who then makes a recording together with an artist.

These two rights streams are fundamental in the music industrial system, but are often misunderstood. It is very important to see the difference between these two rights if one is to understand the streaming model, and why payment from streaming services differs so much between different actors.

To summarize, these are the four actors we are primarily focusing on:

1) The Composer
2) The Music Publisher
3) The Artist
4) The Repertoire Owner

Of course, in many cases the composer and the artist are the same person, or persons, if it is a band. Still though, these individuals have a "split personality" in the system, a double role. The same can be said about the music publisher and repertoire owner, often they can be the same company but are also playing two roles at the same time. A Do It Yourself artist is often all of these four functions at the same time.

During the history of recorded music, organizations have been created to help these different actors, or functions, collect money from other actors that are making use of their music. Radio, TV, hairdressers, restaurants, music festivals, public transportation, gyms, all have to license their music usage in different ways. Instead of having to go to each and every one of the rights holders, collecting societies have been created, and these organizations, with the purpose of simplifying the remuneration to rights holders, have become important stakeholders in the music industrial system. These organizations collect payments for the usage of music through different licensing schemes, and divide revenues to the different rights holders.

In Sweden, there are four collecting societies:
1) STIM (representing composers and music publishers)
2) IFPI (representing repertoire owners)
3) SAMI (representing artists and musicians)
4) Copyswede (collecting the Private Copying Levy)

One could argue that this whole structure is rather complex, perhaps unnecessary complex, and sometimes very hard to understand even for professional musicians or industry people. In my PhD work, I have several times met well known artists and composers in Sweden, that are not crystal clear in their understanding of this structure, despite the fact that they have been living off of their music for their whole lives.

Still though, these are the mechanisms that were built during the 20th century and are how copyright is implemented in the music industrial system. This structure is also the foundation for how payment to rights holders is done from à la carte on demand music streaming services. The chart below describes how money, in general, flows from a streaming service to the composers and artists, as well as the general division for the Swedish music market. The total revenues to the streaming services, trough paid subscriptions or ad revenues, is divided as below, as well as the relations between the artists and repertoire owners and between the composers and music publishers. As already mentioned, this is only to be seen as a general overview, the percentage for each actor in the system is general and not to be taken as absolute:

![Diagram of music industry structure](image)

Large repertoire owners often distribute their recorded music directly to the streaming services, or the subcontractor that runs the databases. Smaller repertoire owners usually have to go through intermediaries, aggregators that help repertoire owners to distribute their music to different online music services. The aggregator service could be said to be a new function in the music industrial system as it has developed since 2005, although it has a large resemblance with the old distributor function. The aggregator either takes a provision on the revenues emanating from the streaming service, or takes a fixed payment for providing the service. In total, roughly 40
aggregators are operational on the global market. Aggregators that are often used in Sweden are Phonofile, IODA, Spinnup, Tunecore and CD Baby.

Besides aggregators, another new function has been introduced on the market, the white label. The white label provides a technical platform for any brand that wants to run an online music service. Omifone and 24-7 Entertainment are two of the largest such white labels, running the platforms behind f.e. streaming services Sony Music Unlimited, Rara.com and TDC Play. For a smaller repertoire owner the distribution chain is often longer than for the larger repertoire owner. Below is a flow chart that exemplifies this, in this case the repertoire owner is an independent label:

During the latest years, this ecosystem have consolidated, and today it is much easier to publish your music on digital platforms around the world than before. Still though, depending on which market you are active in, or want to become active in, it can be a hassle to create an efficient setup for the digital distribution of your music. One reason that some artists receives very small amounts from streaming services is that the distribution setup creates many intermediaries that wants their share of the pie, leaving a rather small percentage of the original payout to the rights holder. Another reason why artists sometimes get very low payouts from streaming services is the construction of the deal between the artist and the repertoire owner.

3.1 Pro Rata Share and Net Margin Per Subscriber

There are two economic functions for the à la carte on demand music streaming services that are essential. I am here focusing only on paid subscriptions, and not Freemium models.

1) The net margin for each subscriber
2) The pro rata in relation to popularity

The below simple example is just to explain how the growth of a streaming service relates to the increase of payments per stream/play/listen to rights holders. The example is heavily simplified, but the purpose is just to show how the net margin, that is, the revenue for each paying subscriber compared to the amount of listening the subscriber does, strengthens the model over time:

January

- 100 subscribers pay 10 dollar each = 1 000 dollar
- These 100 subscribers makes 100 000 plays during this month.
- 600 dollars to be divided to repertoire owners.
- 600/100 000 gives 0,0060 dollar per stream (0,6 cent)
February
- 200 subscribers pay 10 dollar each = 2 000 dollar.
- These 200 subscribers makes 180 000 plays during this month.
- 1 200 dollars to be divided to repertoire owners.
- 1 200/180 000 gives 0,0067 dollar per stream (0,67 cent)

March
- 300 subscribers pays 10 dollar each = 3 000 dollar.
- These 300 subscribers makes 250 000 plays during this month.
- 1 800 dollars to be divided to repertoire owners.
- 1 800/250 000 gives 0,0072 dollar per stream (0,72 cent)

This means that the payment for each play, in general, is increasing with every new paying subscriber, people are so to speak listening to less music in general than what they "pay" for, in relation to the minimin tariffs being payed. This is also the main reason why all streaming services are focused on scaling right now, increasing their customer base is the prime directive.

The licensing deals with streaming services are very different from a publishing perspective, compared to the repertoire owner perspective. A collecting society on the publishing side usually receives payment on a fixed percentage of the total revenue for the streaming service, sometimes after certain approved deductions. The payment simply follows the economic development of the streaming service. Money is than distributed to each composer and publisher based upon how many times a particular track has been played. On the repertoire owner side, there is a minimum tariff that the streaming service has to pay for each approved play, regardless of how large, or low, total revenues to the streaming service are. Also, there is a per subscriber minimum that the streaming service have to pay to the repertoire owner side in general. Both the publishing side and the repertoire owner side receives payment on a monthly basis at the moment, although, there are trends that point towards shorter payout cycles in the future.

Nevertheless, the minimum tariff means that a streaming service has to take into account the net margin for each subscriber, that is, the amount of payment the streaming service receives from the subscriber has to be larger than what the subscriber costs (how many tracks the subscriber listens to in relation to the pro rata share). Of course, this tariff is audited gradually, as the user base is increasing, as well as the overall net margin for the total user base. At the moment though, most streaming services are paying more to rights holders than what they can "afford", or rather, the business model is heavily dependent upon additional capital being provided to the streaming services from investors or money makers (banks). For the streaming service, the model has to scale to presumably 20 - 25 million paying subscribers before the model can be said to fully work. Gradually, the rates for each play increases with every new paying subscriber, as does the net margin, leading to a situation where the
streaming service can run its business on the 20-30% of total revenue that they are approved to keep. This also means that for the streaming model to work, from the rights holders perspective, the world can not have hundreds of streaming services, active only on their local market. If the model is not scaled to gigantic worldwide proportions, for the single streaming service, the model simply collapses, and so does the payment to the rights holders.

At the moment we are seeing the beginning of an intense race for worldwide domination. Of course, Google, Sony, Microsoft, Apple and other large corporations, have a huge economic advance in this race compared to streaming services that are dependent on additional capital coming from outside the company, such as Deezer, Rdio, Spotify and WiMP. Also, it is seldom the first actor on a market that becomes the dominant player in the long run. Even though the model itself, or the technical solution, can reach the consolidation phase on a market with a certain actor (such as Spotify in Sweden), it is often the case that another actor takes over the position after that. In the case of à la carte on demand streaming of music, Spotify must succeed on many other markets, if Spotify is to survive on the Swedish market. The whole model depends on it.

As described earlier, the levels of payment for each play, increases when the user base increases. Today, the pro rata share is often based on a monthly country by country calculation. In the future though, when the streaming model has scaled, this model would lead to large discrepancies in payout levels on different markets. Two million paying subscribers in Sweden, compared to 20 million paying subscribers in Japan, would mean large differences in the payment for each play, if the pro rata is only calculated for each country.

So, how is the pro rata calculated in more detail?

Each streaming service has their own algorithm for this, which becomes obvious when analyzing payment reports from different services. It is important though, to see that the pro rata share is sometimes not "pure" pro rata. If the pro rata calculation had been pure, every play would constitute for the same amount of payment during a month. If total net revenues to a streaming service are 100 million SEK during one month, then 60 million SEK, in general, should be divided to repertoire owners. Let us presume that the users of the service makes 1 billion approved plays during that month:

1 Billion Plays / 60 Million SEK = 0,06 SEK / Play (6 öre)

With a "pure" pro rata, each play would have had the same payment level, regardless of if the track were played a million times or a thousand times. This is often not the case though. Instead, there seems to be "popularity algorithms" that kicks in around certain thresholds. A track that has a pro rata share of 0,01 can receive a larger amount per play than a track that has a pro rata share of 0,0001. Exactly how such a "popularity algorithm" is tweaked is of course a heavily garded secret of the streaming services. From the reports analyzed, there is at least a 4:1 ratio between the lowest levels and the highest levels, that is, one track can recieve four times as much payment per play, than another track. Is this important? Yes, if one wants to understand why there are large
discrepancies between different rights holders. Since the exact functions of the underlying algorithms are heavily garded secrets, many repertoire owners have a problem to get an exact understanding of why, and how, their particular music is receiving the payment it is. Also, if the "popularity algorithm" is constructed in such a way that there is, lets say, a 4:1 ratio in the favor of more popular tracks, the streaming model is creating an hit economy on steroids. There are certain aspects of this that I believe is important to highlight.

If a less popular track has a 1:4 ratio in comparison with a very popular track, it would be the same as if only the hit albums in the CD paradigm could cost 149 SEK. A small repertoire owner, or a DIY artist, that released her album in, let’s say, 500 units, would have to set a prize that was not higher than 37 SEK. It is a rather cruel comparison, and the above description is of course highly generalized, but for the sake of building a long term sustainable model around recorded music I believe it is essential that all actors being a part of the system at least have an understanding of the fundamental algorithms that governs the pro rata share.

In a worst case scenario, the payment structure becomes a "pyramid" selling scheme, where the most popular tracks receives a much higher per play payment on behalf of the less popular tracks. If the average payment per play for a certain month is 0,06 SEK, the less popular tracks would hit the fixed lowest payment level, let us say that it is 0,02 SEK, while all the tracks above a certain popularity threshold would receive, let us say 0,08-0,10 SEK. Again, I am not proposing that this is a fully valid description of how these algorithms are constructed, I am simply putting forward a possible aspect that I think is very important for rights holders to be aware of.

3.2 Economic Impact on the Swedish Music Market

When we look at how the Swedish market has developed during the latest years, it is obvious that à la carte streaming on demand has become the most important format for recorded music. But it is also obvious that many rights holders have not received a thorough understanding of the economic model. This is not mainly because there has been a lack of interest, on the contrary, it is more based on the fact that the exact configuration of the model is often not reveiled. I believe this have to somewhat change, if we are to build a sustainable longterm economy around the streaming of music.

At this point in the report, it might be interesting to see exactly how the economic development has been in Sweden since the release of Spotify. The below graph is showing the development for each format since the year 2000, merging LP and CD into "physical". The revenues for 2013 is a prognosis made on the half year report released in July 2013, in comparison with the overall trend from the year 2008.
When comparing the above data with annual reports and revenues for the largest repertoire owners in Sweden, it is interesting to note that the streaming model seems to have had different impact on different repertoire owners. The graph below describes the individual development for each of the eight largest repertoire owners in Sweden during the latest ten years:\footnote{14}:\textit{Universal Music Aktiebolag} (UMG), \textit{Sony Music Entertainment Sweden AB} (Sony), \textit{Warner Music Sweden Aktiebolag} (Warner), \textit{Parlphone Music Sweden AB} (former EMI), \textit{Playground Music Scandinavia AB} (Playgr.), \textit{Cosmos Music Group AB} (Cosmos), \textit{Sound Pollution Aktiebolag} (SP) and \textit{Aktiebolaget Start Klart} (SK). The first four companies are usually referred to as the "major" labels, while the last four are considered so called "indie" labels. Important to note is that the revenues for the indie labels are not only related to sales of recorded music, but sometimes also includes the publishing part of those companies. The major repertoire owners have their publishing divisions as separate economic entities. Nevertheless, the below graph describes the

\begin{center}
\textbf{Revenues for Recorded Music in Sweden}

\textit{2000 - 2013 (Million SEK) (2013 projected)}

\begin{tikzpicture}
  \begin{axis}[
    title={Revenues for Recorded Music in Sweden},
    xlabel={Year},
    ylabel={Revenues (Million SEK)},
    xtick=data,
    ytick={0,200,400,600,800,1000,1200,1400,1600,1800,2000},
    legend pos=north east,
    ymajorgrids=true,
    grid style=dashed,
    ylabel near ticks,
    xmajorgrids=true,
    grid style=dashed,
    xminorgrids=true,
    grid style=dashed,
    xminorgrid style=dashed,
    x axis line style=-,y axis line style=-
  
  \legend{Downloads, Streaming, Physical}
  \end{axis}
\end{tikzpicture}
\end{center}

\begin{center}
Revenues to Swedish repertoire owners (IFPI/GLF)\footnote{13}
\end{center}

\footnote{13} Since these are solely revenues to repertoire owners, the graph does not include revenues to those outlets that present the music for the end consumer, such as record stores or online music services. Also, this graph is not CPI adjusted.

\footnote{14} Important to note is that during this time period there has of course been other repertoire owners active on the Swedish market, such as Lionheart Music Group AB. These companies have not been active during a longer time series though, hence, the choice for these companies. Also, some formerly large repertoire owners, like MNW Music AB has become to small to take into account here.
general development for these companies during the latest ten years. These companies represent roughly 90% of all recorded music in Sweden.

What is obvious in this graph is that the increase in revenues since the release of Spotify on the Swedish market is mainly related to the development of one actor, Universal Music. Of course, streaming revenues in itself is not the only reason why Universal has had such a great journey the latest five years, the amount of hits that have been released from this repertoire owner during this period is fantastic. But, what we also see is that most of the other repertoire owners either have just stopped the decrease in annual net revenue, or stabilized the development. EMI (Parlophone) seems to have stabilized, as well as Sony, although Warner still is on a slightly downward trend, at least up until last year. For the larger indie labels in Sweden, the story is not so good, although it seems that they have stabilized the situation during the latest two years. Again, there are of course lots of other repertoire owners in Sweden, but not many of them reaches an annual net revenue of 10 million SEK or more.

When looking at Sweden from abroad, total revenues to all repertoire owners is usually what is discussed, but, when analyzing the individual companies it becomes obvious that it is first and foremost one actor that really has benefitted economically during the first five years of the streaming paradigm in the country. This will of course probably change as payments from streaming services increases in relation to the growth of paying subscribers in the world, and all repertoire owners begin to see a gradual increase in per play payment.

Also on the publishing side, à la carte streaming on demand services has had a huge impact on revenues. STIM, the collecting society that collects on behalf of composers and music publishers have seen a ten fold increase in revenues from online and digital media since the year 2008:
These revenues are not solely related to à la carte on demand streaming services, but also include à la carte downloads, as well as Internet radio and other online services. Nevertheless, the increase is largely related to à la carte on demand streaming services, and specifically to Spotify.

On the publishing/composer side, revenues from streaming services are substantially lower than for the repertoire owners and artist side. This is nothing unique for streaming services though, this is how the relation has looked for many decennias around recorded music.

When combining the overall economic development in Sweden for different rights holders, there is no question that the development since Spotify was released in 2008 has been very positive, seen from a large perspective. But, for the streaming model to continue increase revenues to the rights holders, it is neccessary that the model has a breakthrough on other music market. So, how many paying subscribers is needed, on a global scale, for the model to fully work?

First of all, streaming revenues are still very low on the largest music markets in the world. The below table shows revenues for the year 2012 on the five largest markets:

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>4,481.8</td>
<td>-0.5%</td>
<td>34%</td>
<td>58%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Japan</td>
<td>4,422.0</td>
<td>4%</td>
<td>80%</td>
<td>17%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>UK</td>
<td>1,325.8</td>
<td>-6.1%</td>
<td>49%</td>
<td>39%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Germany</td>
<td>1,297.9</td>
<td>-4.6%</td>
<td>75%</td>
<td>19%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>France</td>
<td>907.6</td>
<td>-2.9%</td>
<td>64%</td>
<td>23%</td>
<td>11%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Retail value in Million USD (IFPI RIN 2013)
In the table above, "Digital" represents both à la carte downloads and streaming. Downloads is still the dominating digital format on these markets. In Japan though, neither à la carte downloads or streaming has succeeded, the CD is still a very strong format. Streaming services like Deezer and Spotify are not even present in the country. Locally, the online music service Recochoku are also functioning as a streaming service, and the hope from the Japanese music industry is that this streaming service will grow rapidly in the coming years. Also in Germany and France, revenues from music streaming are low compared to Sweden, Norway, Finland, Denmark and South Korea. In United Kingdom, the CD and downloads are still dominating.

The five largest music markets constitutes for roughly 75% of all revenues from recorded music in the world. Combined, these countries have a population of 650 million people, which could be compared to China and India, that combined have a population of 2.6 billion people. Russia, as a comparison, has 144 million inhabitants.

In the year 2000, repertoire owners in the world had their absolute top, historically, with a total retail value of 36.9 billion USD. In 2012 total revenues landed on 16.5 billion USD, an increase from 16.2 billion in 2011. In United States, the general streaming subscription costs 9.99 USD. Compared to other markets, this is fairly cheap considering the differences in currencies. Converted, a Premium subscription in Sweden costs 14.21 USD, in Norway 14.66 USD, in United Kingdom 14.78 USD and in all Euro countries 12.38 USD (based on a currency conversion rate of November 15, 2013). Let us assume an average of 11.5 USD per month for each Premium subscription on a global scale.

If repertoire owners are to reach the same revenue levels as the year 2000, based on streaming on a global scale, these services would roughly have to generate 3 billion USD/month to repertoire owners, on average. Considering the development of royalty levels discussed earlier in this chapter, the goal is to reach 70 % to repertoire owners from the net revenue of the streaming service. Today this level is around 60 %. Let us choose a 65 % level for the coming years, and calculate the potential value to repertoire owners for one subscriber under the existing prizing scheme:

\[ 11.5 \times 0.65 = 7.475 \text{ USD} \]

That is the potential value for each paying streaming subscriber to the repertoire owners, on average. How many paying subscribers is then needed to reach a 3 billion USD/month level?

\[ 3 \text{ billion} / 7.475 = 401 \ 337 \ 793 \]

Hence, if the streaming format, with the prizing structure of today, reaches 400 million paying subscribers on a global scale, the streaming format alone would constitute for the same revenue levels as total levels in the year 2000, not adjusted for CPI.

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15. IFPI's Recording Industry in Numbers 2013
16. Revenues would have to be adjusted for global inflation to make the figure justice, but for the purpose of describing the magnitude of development that à la carte streaming services need to see in the coming years, this comparison is sufficient. It is probable that 450 million paying subscribers would be a more valid figure when adjusted for CPI.
Of course, this is only considering the à la carte on demand streaming format alone, not combined with physical products or à la carte downloads or increased revenues from other forms of streaming services such as video services and Internet radio. It is plausible that these formats will be strong on several markets during the coming years, and that it will take at least 4-5 years before we pass the 50/50 mark, where à la carte on demand streaming is standing for half of the revenues to repertoire owners on a global scale. In 2012, the streaming format stood for 1.1 billion USD in revenues to repertoire owners, roughly 15 % of total revenues, with 20 million paying subscribers (IFPI Digital Music Report 2013). The ad revenues are of course included here, but on a global scale, with all existing streaming services, ad revenues for à la carte on demand streaming services is rather small, most services does not make use of the Freemium model. It is plausible that the 50/50 mark is reachable with 70-75 million paying subscribers on a global scale, depending on how fast the decline for the CD format and à la carte downloads will be. Remember, this is just a prognosis, based on the assumption that the technological development as such forces this paradigm shift to happen, it might be possible that the CD format will continue to dominate e.g. the Japanese market for another five or ten years, although it is doubtful. The other formats will continue to be important for many more years, but will most probably, after the 50/50 mark is passed, become complementary formats to the à la carte on demand streaming model.

When combining all formats, adding revenues emanating from other forms of online outlets, such as YouTube, Internet radio etc, as well as adjusting price levels in accordance to inflation, one can consider 200-250 million paying streaming subscribers on the global level to be a fair estimation of when revenues will be the same in total to repertoire owners, as it was in the year 2000. When might this level be reached? Since there are so many factors involved, it is almost impossible to make a well judged estimation, but around 2025 would be a not too far-fetched estimation.

The reason why it is neccessary to make this kind of prognosis when trying to understand the Swedish music market, both now and in the future, is simply because the economic model around streaming in Sweden is totally dependent upon the rest of the world embracing the model. Also, the payout levels to music publishers, composers, repertoire owners and artists, are dependent upon such a development. Although the situation has somewhat stabilized in Sweden, if the Swedish market are to begin a more rapid upward progress, the consumers on the large music markets in the world have to stop buy CD’s, and start paying for streaming subscriptions. It is even plausible that it is not enough that only the existing large music markets embraces à la carte on demand streaming, but other large markets, such as China, India and Russia also have to do it, to make the streaming model solid for rights holders.

The streaming services of today therefore have a long term plan for the development of the format as such, and simply have to stay in business long enough to be a part of the up side when the format breaks trough seriously. All of the existing services of today will most probably not survive this race. As described earlier, it is seldom the first player on the market that gets the largest position in the long run. Consider for example Altavista and Evreka, who in some senses were the equivalents of Rhapsody and Spotify, but
when Google was released, the former actors were out rivaled.

A development where the "whole" world embraces streaming, will gradually lead to substantially higher royalty levels per play to rights holders, also in Sweden. If the levels today are at a general level of 0.005 USD per play, it is possible that they will be 0.05 USD per play when the model is consolidated, perhaps even higher. In such a situation, even small DIY artists could get comparably good revenues from streaming services, even if the artist is only active on a local market with a local language.

For these levels to become higher though, it is essential that there is a smaller number of actors that dominates the global market. If each local market have their "own" streaming service, the net margin level is too low to create higher royalty levels, at least with the current pricing strategies. On the other hand, if this is indeed an intrinsic development emanating from the evolution of information technology, it is possible that in 15-20 years time 10% of Internet users in the world would be subscribing to a music streaming service. To compare with contemporary services, the vKontakte social network service in Russia alone have 450 million users. Facebook has 1.2 billion users. If à la carte streaming on demand of music is going to be the dominating format during the coming decennias, it is probable that the format in the long run will exceed the revenue levels from the CD format, given that the development is not haltered by events that seriously changes the prerequisites.

Although most markets in the short term will not have the same streaming mania as we see in the Nordic countries, we will most probably see many markets move into the streaming paradigm in the coming five years. It is in all's interest that (a few) streaming services succeeds in their global growth, and that the development is governed by well judged decisions together with rights holders on how the economic model should be constructed.

3.3 A "Discrimination" of Certain Genres and Catalogues?

There are some other aspects around the streaming model that is also worth describing. For producers of longer musical pieces, streaming services are clearly negative from a monetary point of view. A music piece that is 3 minutes long has basically the same economic value as a song that is 15 minutes long. In many genres, music is presented in longer pieces, for example in classical music and jazz. Still, the pro rata share is not considering the length of the track, only how many times it has been played more than 30 seconds, and how popular it is in comparison to all the other tracks on the streaming service.

Some of the producers of longer tracks in Sweden have started to divide them into shorter parts, instead of uploading the music as a whole. For example, a musical piece that is 21 minutes long is divided into 7 parts with 3 minutes each. Of course, from an artistic and aesthetic point of view, this could be considered negative. When cutting a longer musical piece into shorter parts, one have to consider where there is silences, or obvious breaks or differences in the music, or in other ways try to find ways where the division into smaller parts does not influence the overall impression of the music.
It might even be possible that this situation will influence the core creative process, that is, composers and artists might have to create music with this prerequisite in mind. It is not the first time this situation has existed, in the beginning of the recording history, one simply had to limit the length of the recording since the storage capacity on one side of the physical Shellac record was very limited. Later on, with the LP format, as well as the Single format, the same kind of limits existed, as did it in the CD paradigm. Of course, it is kind of paradoxical that in the new digital paradigm, where storage capacity in theory is endless, the streaming model as it is implemented right now forces the notion of "the shorter, the better", at least from an economical point of view. Whether this will change or not remains to be seen.

The earlier description of the economic system around à la carte on demand streaming of music also shows that smaller actors, with smaller catalogues and less popular music, almost always have to go through an intermediaire to publish their music on streaming services, leading to yet another cut in their revenues. For the not so popular music producers in Sweden, the streaming services are often viewed as just a marketing platform, rather than a source for revenue. One suggestion that has been put forward by mainly independent repertoire owners is to divide the revenues for each single subscriber based on that particular subscriber’s listening.

If a subscriber listens to music from only five artists during one month, it is only the rights holders related to these artists and tracks that will share that particular subscribers payment to the streaming service. This would also partially solve the problem of the "length discrimination" since the payment would be based on that particular user in relation to all the tracks she has listened to, rather than from a total pool of money. There are of course some difficulties with this model.

First of all, it would demand an enormous amount of data processing if each subscriber would have its own pro rata calculation. Although the basic mechanisms for doing this are already in place on many services, it would still constitute a large increase in data processing. On the other hand, there would be obvious upsides to this version of the streaming model for many rights holders. Creators in smaller genres, and independent repertory owners would most probably see larger revenues, although the amount of listening necessarily would not have to be larger. Of course, this is a question of a power struggle internally within the music industrial system, a struggle that has been going on for the whole history of recorded music. Such a model would clearly not benefit all actors in the ecosystem. For a large repertoire owner with a large and interesting catalogoue, the tweaking of the current streaming model means a larger potential of receiving high revenues from streaming services.

Another perspective is that a per subscriber based pro rata share could create certain forms of "activism" on streaming services, where users choose to listen to music that they want to support, and not listen to music they do not want to support. Whether this is good or bad, is of course a matter of perspective, but we have already seen examples of fans that through crowdsourcing mechanisms make the payment from streaming services substantially higher to artists by jointly listening to the music over and over again.
Long Tail effects are obviously stronger for those that own large catalogues, but not necessarily for those who are the long tail, depending upon how the deals are made. During the first five years of the streaming paradigm on the Swedish market, some repertoire owners might by necessity have used certain clauses in existing contracts to get as much streaming revenues as possible to stay in the overhead of the company. This is plain business economics, and has probably been needed for the companies to survive at all. Some performers and composers have been frustrated though, since they have felt being out of the loop, which partly can be explained by the strong confidentiality around streaming services, and partly by a lack of communication. Composers that want to know details on the payment structure concerning their music on streaming services, simply gets a headshake as response when talking to a collecting society, of course leading to frustration. Important to remember though, is that the streaming model is still something that is being built, it is still probably only in the beginning, and as described earlier, it is first now that more actors are beginning to see the upside of the model. One could argue that it is first when the model have fully consolidated that it will be possible to build more “fairness” in the system, the economic situation has simply not allowed it before. On the other hand, the risk is that the configuration of the business model does not change even when the model has consolidated, everyone has gotten used to the system as it is.

One suggestion would be to create a more dynamic economic relationship between the performers and the repertoire owners. In a situation where the streaming model perhaps has exceeded the levels of revenues that the CD meant, it might be in place to restructure how royalty levels from streaming services towards performers is constructed, for example by moving to a 50/50 split when the repertoire owner have reached a certain level of profit on the recording. Again, this postulates that the model, as well as the overall economy for the repertoire owner, is solid as a result of the revenues from streaming services.

4. Organizational Changes and Licensing Challenges

Since this paradigm shift is about moving from monetizing tangible goods, units, copies, products, to monetize the very act of listening and consuming music, strategies and organizations are starting to change in Sweden. In the “old” paradigm, the distribution department and the marketing department at a traditional repertoire owner were often separated, which is changing gradually in the new paradigm. Streaming services functions as platforms for both marketing and distribution, and the two activities basically becomes a part of the same process (Wikström P. 2006).

The repertoire owner is more and more becoming a B2C organization, rather than a B2B organization. In the old paradigm, the repertoire owner had to rely on neighbouring industries, such as radio, TV, newspapers, to market their music to the general public, while today, a repertoire owner can reach the end consumer directly through playlists and other online features. Since repertoire owners now have effective
tools for communicating directly with the end users, the competence needed in the business has changed. Swedish repertoire owners have employed many younger people, coming from the "file sharing" generation, who knows social media and online communication and simply have the task to make people listen to the music rather then buy something. In this endeavour, statistical analysis has become extremely important. The analysis of social media platforms and streaming behaviour among certain target groups has become useful tools in understanding the market. Gradually, the actors are building a new form of knowledge base that can be used for A&R activities as well as for marketing activities.

Since most à la carte streaming on demand services have Application Programming Interfaces available (API-s), there has been an explosion of third party products during the latest years, building on the music available at the services. Apps, mashups, widgets make use of these API-s and creates new layers of functionality "above" the music being streamed in the bottom of the ecosystem. In the traditional licensing paradigm, the "last window out" should always license the music usage to rights holders. A restaurant or a grocery store that have a radio channel running in the background should sign compulsory licenses with the concerning collecting societies despite the fact that the radio channel is already licensed (in Sweden, STIM for the publishing side, SAMI on the performer side. In the case of SAMI, revenues are split 50/50 between SAMI and IFPI, SAMI does not collect any money from à la carte streaming on demand services). In the digital paradigm, the philosophy of "last window out" is not operational at the moment. All forms of "last window out" usage, be it a smartphone app, a smart-TV app, a streaming widget that is embedded on a blog, is not obliged to license their music usage, or rather, the regulation probably demands that they should do it, but no one is doing it.

Of course, payment to rights holders increases when end users are running third party applications, since the music listening is always done within the context of the streaming service, but, the question is whether that compensation is enough considering the value for the third party product. In the essence of copyright stands the notion that everyone earning money on someone elses music should also share some of their revenues with the creators of the music. In this case, there are new actors that are receiving revenues based on the music streamed from the à la carte on demand streaming services, but is not licensing the music usage as a last window out. One suggestion is to automize the whole licensing system and make it a part of the API implementation, an information model that will be presented in a paper in January 2014.

Also, if the consumption, listening, of music is what generates revenues, the copy itself is rather irrelevant. How the music has been copied and distributed is not important, as long as the usage of the music generates economic compensation to the rights holders. If a track was given to me by a friend as an mp3 file on a USB memory stick, and my listening to the track becomes a part of the monetary system, the copy itself is somewhat redundant, regardless of where it comes from. Be it a file sharing network, a locker service or a 4TB harddrive. If indeed the rest of the world will see the same development as the Swedish market have seen during the latest years, it is plausible that changes will happen to copyright legislation in the long run.
During the latest two years, the "scan-and-match" function introduced by cloud services like Amazon Cloud Player and iCloud, in a sense "washes" pirate copies and replaces the "bad" copies with "good" copies. One could argue that this is a first step of building layers of functionality on top of primary data (the music files) that monetizes copies that in the old paradigm was deemed illegal. In the new paradigm, the usage of the content is the most important part, not the container as such. In the long run, the optimal situation would be to "free the copy" in the digital context, on a global scale gradually develop functionality that would monetize the usage on all kinds of devices and platforms. Although it has a slightly utopian touch to it, such a paradigm would mean that there could not exist any "illegal" copies in the digital context. Most probably we will not see such a framework in place during the nearest decennias.

The streaming paradigm is also starting to influence the regulation regarding the Private Copying Levy, as it was implemented in the Swedish copyright law in 2005. Since a large portion of the population is using streaming services, the habit of copying music files has diminished, both legal private copies and illegal pirate copies. The purpose of the PCL is to economically compensate rights holders for the legal copying of their music. In the new paradigm, the copy is not essential though, but the usage is. As described before, third party developers, as well as new forms of devices such as smart-TV’s, set top boxes, even cars, have app functionality built in to them, making it possible for users to stream music. These layers are not a part of the monetary system around recorded music today, it is solely the actor in the bottom that compensates rights holders, the streaming service. Of course, rights holders are being compensated for the music usage through the payouts from the streaming service, since the music is licensed, the question is whether all the other actors in the ecosystem that are adding value to their products by providing music streaming capability, also should be a part of the compensation system. The discussion is only just beginning concerning these issues, but will most probably result in new interesting solutions for how different forms of music usage based on the à la carte streaming on demand model will be monetized.
5. Conclusions

When I decided in August 2013 that I would collect data for a report about music streaming in Sweden, my main purpose was to create something that could function as a theoretical "handbook" concerning the streaming model, explaining how it works and how it has influenced the Swedish music market. Perhaps I did not succeed in doing such a handbook, but, the work during the latest months have been incredibly interesting and hopefully the report gives some perspectives on the development on the Swedish market.

As I see it, the main conclusions of this report are:

1. The streaming model can provide more revenues to rights holders than the CD could ever do, given that the largest music markets in the world embraces the model in the coming years and the development leads to a few dominant streaming services,

2. The levels of payment to Swedish repertoire owners, music publishers, artists and composers, is dependent upon how well the streaming services, particularly Spotify (since it is dominant on the Swedish market) succeeds in the race for "world domination",

3. During the first years of the streaming paradigm in Sweden, it was particularly one repertoire owner that could see a large increase in revenues, the others either stopped the downturn, or saw smaller levels of increase in revenues,

4. If the Pro Rata Share function of the streaming services are governed by a strong "popularity algorithm", it is plausible that we are moving to an hit economy "on steroids",

5. Longer music pieces is in a way "discriminated" by the current model, since payment is not adjusted for the length of the musical piece,

6. Composers and music publishers have a weaker relationship with streaming services than repertoire owners,

7. The move from products to consumption have changed how rights holders are marketing and communicating their music, repertoire owners are to a large extent becoming more B2C than B2B, working directly towards the end user,

8. The streaming model is strongly influencing regulatory and licensing issues around recorded music, such as licensing to third party developers as well as changes in the Private Copying Levy.

Although the streaming paradigm is fantastic in many ways there is a certain "problem" that also have to be addressed, the question about privacy and integrity. In the streaming paradigm, the collection of information about our music behaviour is extremely detailed, when, how and where we listen to a track is exactly registered, almost even the why. Of course, this information is used to present relevant ads and commercials for users running a Freemium account, whether one likes it or not, but is also used as material for making more well judged decisions on what music it is plausible that the market will react positively upon.
If we were to compare the data collected for a listener at a streaming service today with a regular music listener in 1993, the amount of detailed data on the listening behaviour of that user was zero, the listening habits were totally anonymous. If we would apply the streaming paradigm of today on the music usage in the tangible era, it would be the same as having a monitoring device connected to the CD player that would register every action we did on the CD player, sending this information to a central server that would be used for different purposes.

Of course, this is nothing unique for the area of recorded music, this is how the implementation of information technology in contemporary society works, with numerous outlets collecting data about us (whether we are aware of it or not), then using the data to pinpoint who we are and what we want. As long as effective regulation is in place that governs how the collected data are supposed to be used, this is not a problem, rather an enormous opportunity for developing effective new solutions.

As information technology develops further during the coming years, it will most certainly become much more integrated in our daily activities, in ways that we might not be able to foresee at the moment. As far as I know, no one could see how the shift from selling tangible music products to a totally new economy based on revenues for each and every time someone listens to a song, would look like. Most probably, we are also not able to fully describe how the music market might look like in 2025 or 2030.

But, if information technology will develop in such a way that the trends point at, it will be integrated with us, and our lifes, in a much more profound way than before, that is, information technology and humans are becoming intimately connected. Whether it is going to be bio-technological merges, or simply new ways of interacting with information technology based on novel forms of HCI (Human-Computer Interaction) remains to be seen.

If we already today are witnessing a situation where music à la carte on demand streaming services have become highly automized platforms for an advanced economy around attention, it might be plausible that the attention itself will have different levels of economical value in the future. Up until today, and probably for many years still, the measuring of the "amount" of attention, or interest, or joy, or happiness, is not a part of the economic equation. Regardless of if a song gives the receiver an enormous amount of pleasure, or if the receiver just feels bored, the payment being generated to the rights holders are still the same. The economy, also in the streaming paradigm, is still based on a collectively calculated economic value governed by a generalized transaction evaluation, rather than on how the individual reciever values what is received.

If information technology will merge with humans in a more profound way during the coming decennias, it is plausible that we will also see new forms of economic compensation to rights holders, not only based on the mere playing, or listening, but also based on what kind of attention is given to the musical piece, or how much the individual person enjoys it. This of course sounds like science fiction today, even a little bit spooky, but if information technology develops in the way that many expect (Broderick D. 2001; Brockman J. 2002; Stock G. 2003; Garreau J. 2005; Kurzweil R. 2005), we are in for a crazy ride...
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