Creative Destruction and the Music Industry: an investigation concerning new music technologies such as peer-to-peer file sharing and cloud computing and how these affect the informal and formal norms towards copyright protection and music consumption.

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Abstract:

This thesis deals with how creative destruction of the music industry caused by digital technologies can change formal and informal norms concerning the protection of copyrighted material.   In the process of creative destruction new innovations can be so great that they change people's beliefs: in the case of the music industry the technological shift from analogue to digital technologies, in particular peer-to-peer file sharing, have changed people's views on the morality of piracy due to the low risk involvement that these innovations bring. A major issue of interest in this investigation is the level of control the industry has lost over its product and how effective institutional reform (IPRED act) is at reversing the strong informal norm of illegal file sharing. The investigation also deals with the increasing role that subscription based cloud computing services is playing as a legal alternative to illegal file sharing, and concludes that even though music consumers are unwilling to pay traditional prices for music, they are willing to honor copyrights at lower prices which cloud computing offers, the choice of cloud computing is also due to institutional reform.

Key words and concepts:

music industry, creative destruction, copyright legislation, control vs. connectivity, cloud computing, belief systems, formal and informal norms, institutionalism, file sharing

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1.   Introduction:

It is difficult to deny that the piracy of copyrighted material via peer-to-peer file sharing technologies, which began in the late 1990's, has not caused negative impact on the sales of physical recordings for the music industry and has made it considerably harder to enforce copyright protection.   The claim that file sharing is killing the music industry, however, is an overstatement and a simplification of a more complicated phenomenon that is occurring.   To say file sharing is killing the industry infers that file sharing is diminishing the demand for music.   On the contrary, file sharing has made music more accessible to the masses and has allowed more people to be exposed to more artists and in the past two decades even though album sales have drastically decline the price of the average concert ticket has steadily risen (Cammaerts & Meng 7).   This increase of concerts prices and tickets in the past twenty years can be seen as a sign that the demand for music in society is by no means diminishing.   As long as there is a demand for music there will always be entrepreneurs and economists willing to take advantage of the situation and meet its demands in new and innovative ways.

What the music industry is experiencing is known to economic historians as creative destruction, a term originally coined by Karl Marx but is also associated with the economic theories of Joseph Schumpeter.   The theory of creative destruction in the Schumpeterian context relates to long term growth in a capitalist economy.   The idea behind creative destruction is that new innovations are entered into the market with the assistance of entrepreneurs (Schumpeter 71-75).   These new innovations devalue old industries and break up industries that share monopolistic characteristics; in the case of the current music industry "four of the largest firms control approximately 72 percent of the music-recording market" (Wikström 69).   The transformation phase of creative destruction can be chaotic for many actors but it is also an essential part of long term economic growth.   Creative destruction can often be so extensive that the institutional foundation of a market is permanently changed along with its belief systems, and the formal and informal norms which govern it.

The birth of the digital age has brought about the inevitable demise of the music industry's old business model.   Yet it is not just peer-to-peer technologies that can be credited for the demise

of the industry's business model, which was based on the sales of physical records. Before the advent of the digital age the music industry had a strong level of control over the protection and distribution of music and protecting their copyrighted material, since recording and distributing music was expensive and only affordable by professionals.   In the digital age, the gap between professional and amateur has been reduced considerably since now it has become theoretically possible for anyone to record and distribute music over the internet at a fraction of the cost it previously was available for when the music was constrained to analogue recording and distribution of technologies (Wikström 6-7).   Consumers of music being rational economic actors have become less willing to pay traditional prices for music that they have paid in the past when they are conscious of the fact that the transaction costs involved with the reproduction and distribution of music digitally are close to zero (Wikström 6).   Users of the web have also become less willing to pay   due to a phenomenon known as 'internet culture' where internet users have come to expect services on the internet to be   offered for free with little regard to what it might cost the provider of such services (Wikström 174).

Peer-to-peer file sharing is part of a much larger phenomenon of new music technologies that have come with the advent of the digital age.   Another equally important innovation is cloud computing with the use of computing to deliver a service rather than a product.   In cloud computing, resources and information are shared and provided by a network.   Cloud computing has become more and more prominent as the internet has matured.   Some examples of cloud computing are: Youtube, Last.fm, Myspace, and Dropbox.   The book *The Music Industry in the Cloud* by Patrik Wikström claims that cloud computing will be the future broadcasting media for the music industry and will be an important channel for the distribution and promotion of musical content.   Music streaming websites like Spotify not only give their customers access to a wide library of musical content at an affordable price, it also respects copyright legislation.   Spotify would however never have been able to offer the prices that it does, if the industry hadn't been put under pressure caused by illegal file sharing.

This investigation is about the new dynamics of the music industry and how new music technologies such as file sharing and cloud computing are not just transforming the music market but also the belief systems people have concerning the ethical questions surrounding the piracy of

copyrighted music.   The focus of the investigation is on how innovation can affect consumers' willingness to pay for music services, how innovation influences informal norms concerning copyright laws, and the effectiveness of formal institutional reform and how the newly evolving entrepreneurship subscription based cloud computing is taking advantage of the current climate of the industry.

Statistics used for this investigation have been gathered in Sweden.   The country of Sweden in many ways can be seen as an important place concerning the debate on file sharing. Sweden is in a unique position considering that not only does the country have a strong music culture, it is the Western World's third largest exporter of music despite the country having such a small population (Wikström 9).   Sweden is one of the most connected countries in the world regarding information technology and the internet, and up until recently the country has had lenient laws concerning piracy (Wikström 9).   Additionally, Sweden is the birthplace of The Pirate Bay, one of the most popular BitTorrent peer-to-peer file sharing sites on the internet.   The country is also home to the first political party, the Pirate Party, dedicated to the reform of copyright laws as well (Wikström 9).   And finally Sweden is the home country of several successful cloud computing music entrepreneurs who have taken advantage of the climate of the industry such as Alexander Ljung and Eric Wahlforss of Sound Cloud and Daniel Ek of Spotify.

2.   Presentation of Research Question and Aim:

Creative destruction of an industry entails the introduction of innovations that have a disruptive effect on old business models and practices.   It is not uncommon in this phase of creative destruction that these innovations challenge social values and institutional conventions. Peer-to-peer file sharing is a perfect example of how morality concerning the protection of copyrighted material and the belief system surrounding it can change due to technological innovation.   Formal institutional conventions protect copyrighted material and condone piracy, but on an informal level many people do not agree with these rules and regularly participate in illegal file sharing.

One of the reasons why piracy of copyrighted material has become common place among internet users is because of its ease, accessibility, and to a certain degree the anonymity that peer-to-peer technologies provide.   The ease and temptation of online piracy has morphed people's views on the ethical questions concerning copyright infringement to such an extent that some people feel that their actions are fully justifiable.   Before the introduction of peer-to-peer file sharing the thought of participating in the piracy of copyrighted material such as music was an unthinkable concept for common people.   Prior to the advent of the digital age, extensive piracy of copyrighted material was a high risk pursuit and much easier to prevent since piracy was dealing with a physical medium rather than a digital medium.   *Home taping* became popular in the 1980's and was an early form of file sharing which involved copying music on to cassette tapes.   Even though home taping was criticized by the music industry it did not have the same extensive impact which peer-to-peer file sharing has caused (Cammaerts & Meng 11).

The music industry has been permanently changed, and will never be able to regain the control it had enjoyed prior to the digital age in enforcing copyrighted material.   There will also be file sharers that use IP address encryption and secret file sharing networks known as dark nets in order to avoid being caught.   At the same time it is believed that even though music consumers may be less willing to pay the former prices for music, they may be willing to pay for services that help them navigate through the abundance of musical content that is being offered on the internet (Wikström 7).   One solution to the problem of honoring copyrights, while at the same time

providing users with cheap access to content, is subscription based music streaming websites such as Spotify (Wikström 7).

At the same time even though copyright legislation such as the DEA (Digital Economy Act 2010) in the United Kingdom and IPRED (Enforcement of Intellectual Property Rights Directive 2009) in Sweden may never fully be effective enough to totally eliminate illegal sharing, many people will stop in fear of being faced with high fees or incarceration.   In the past, formal institutional reform has brought change concerning informal norms.   For example, in the 1970's Sweden was the first country in the European Union to make corporal punishment illegal and redefined it as a form of child abuse.

3.   Research Question:

Has illegal peer-to-peer file sharing of musical content changed the belief in respecting copyrights and the morality of file sharing, and if so can institutional reform reverse this informal norm? Has institutional reform pushed people towards using subscription based cloud computing as a legal alternative to illegal file sharing?

4. Aim:

- To gain a better understanding of the increasing role that subscription based cloud computing plays in the new digital music industry and to see how cloud computing entrepreneurship is taking advantage of the current market's climate and copyright conditions, and also to see the effects that formal institutional reform has on the choice of music sources and copyright protection.

- To obtains a strong indication of common views concerning the rationality of choice of different music sources from university students and see how formal institutional reform concerning copyright laws such as IPRED has affected their choices.   Gathering data on common views from current university students will prove to be valuable, considering they belong to the generation that has been most affected by the technological paradigm shift of which the music industry is going through.

- To see how ethical questions concerning the copyright protection and how people's belief system can be affected through technological innovation and institutional reform caused in the process of creative destruction.

5. Hypothesis:

File sharing of copyrighted material via peer-to-peer networks and similar technologies has permanently changed music consumers' respect for copyright laws and changed their willingness to pay full price for music products. The IPRED act of 2009 may have had some effect on preventing consumers' file sharing of copyrighted material even if institutional reform will never be able to restore the level of control the music industry once had over its copyrights.   I hypothesize that IPRED and similar jurisdiction is having a significant impact on the dynamics of today's music industry by pushing consumers towards low cost subscription based cloud computing music services.

6.   Method:

To answer my research question concerning how institutional reform and technology is shaping the future of the music industry, I have conducted a *self-administered questionnaire* as instructed in the book *Social Research Methods* by Alan Bryman (Bryman 217-220).

My focus group is the university students situated in the province of Scania in southern Sweden studying at Lund University.   It is appropriate to use university students as a focus group in conducting the survey because the majority of university students are between the ages 18 and 30.   This is a valuable age group to survey because not only are younger members more influenced and adaptive towards technological change, this is the first generation to have been raised in a society where computers and the internet has been accessible to the general public. This is the generation who has experienced the technological shift between storing music in a physical format to storing music in a digital format, and are witness to the transformation of the music industry and the controversy surrounding digital piracy first hand.   The survey acts as a cross sample survey of the student population and works as an illustration of common views among the students rather than a representation of the whole student population.

The survey has been done in a self-completion questionnaire format comprised of closed questions.   The advantage of using this format is that one is able to gather a large number of opinions in a short period of time and be able to estimate the view point of the general student population.   Another advantage of using closed questions with multiple option based answers is that people are more willing to give an honest answer since they are not under any social pressure to please which is often associated with face to face interviews.   Anonymity is also a major reason for using the selected survey format, since people are more willing to answer questions about participating in illegal activity when anonymous.

The questionnaire includes both practical questions such as: gender, age, and academic discipline, and questions concerning the issues of my research question and music consumption. Below are questions which have been included in my questionnaire:

- Do you find file sharing of copyrighted material morally justifiable?
- Has the IPRED law, which was passed in 2009 to enforce the protection of intellectual property rights, stopped you from downloading music from peer-to-peer websites?
- Has copyright protection legislation such as the IPRED law of 2009 influenced you to choose music streaming websites instead of file sharing websites?
- What is your primary source of music? (File sharing websites, subscription based streaming websites (Spotify), streaming websites, traditional broadcasting medium (radio/television) or compact disc.

After obtaining my data I have analyzed the data with all the groups of students and their different academic disciplines together.

7.   Review of Literature:

The current state of the music industry and the controversy surrounding the piracy of copyrighted material and what should be done about it, is a highly debated topic.   There is an insurmountable plethora of reading material published on the subject.   Since I am an individual student and the scope of this thesis is rather narrow, it is impossible to become acquainted with all the literature and theories concerning the evolution of the music industry.

Patrik Wikström's book *The Music Industry in the Cloud* has been an important influence for my thesis and I have incorporated many of his concepts concerning control vs. connectivity of copyright musical content and the future of the industry with the application of new music technologies.   Patrik Wikström is an associate professor at the Jönköping International Business School and is acting as the Research Manager for Media Management and Transformation Center. His book gives a clear and concise explanation on the history and structure of the music industry, and uses the cloud metaphor to explain how web based computing services will affect the future of the industry.

A second work that I used in the shaping of the theoretical framework is the paper entitled; *Creative Destruction and Copyright Protection: Regulatory Responses to File-sharing* by Bart Cammearts and Bingchun Meng, both of whom are PhD researchers and lecturers at the London School of Economics & Political Science Department of Media and Communications. The paper acts as a critic against the 2010 Digital Economy Act in Great Britain, and advocates the idea of creative destruction.   The purpose of the DEA is to protect innovation by enforcing copyrights and regulating file sharing, however Cammearts and Meng argue that the act will in actuality stifle innovation by preventing the use of peer-to-peer technologies and, "providing user-friendly, hassle-free solutions to download music legally at a reasonable price ...[instead of]...heavy-handed

legislative and regulatory regime" (Cammaerts & Meng 9). Cammearts and Meng support their agreement by drawing examples of previous file sharing technologies and looking at other factors that have caused the decline of physical sales in the music industry such as the decline in household incomes.

I have written this thesis from the perspective of New Institutional Economics as the theoretical foundation with the help of *Understanding the Process of Economic Change* by Douglass North. In this book, Douglass North presents an approach of understanding economic change and rejects the static models of neoclassical economic theory. This is mainly due to the fact that the nature of economic change is dynamic and never stationary, and thus makes a static model unsuitable for explaining this phenomenon. The world that man lives in is characterized by uncertainty and is forever changing, and according to North we do not yet have the means of creating an overall theory that can explain economic change, but it is possible to achieve an underlying understanding of this process. Man attempts to create an understanding of his domain and minimize uncertainly by creating a belief system and economic and political systems structured by formal and informal institutions. Economic theory is a theory of choice, however it is not always possible for man to make rational decisions because it is not possible to be well informed about all possible options and consciences, since one's perception is constantly being influenced by normative values, society's belief system, cultural inheritance, and cognitive limitations.

8. Definitions:

This section of the paper gives brief explanations on the central terms and concepts of the investigation.

8.1. Institutionalism:

Institutionalism is the theory in neoclassical national economics that is used to describe the formal and informal rules that make up the foundation to how society functions.   In this theory actors are those who are governed and participate in the institution; actors can either be individuals or organizations (Hedlund 12).   The aim of using this theory is to explain how these different combinations of norms, rules, and sanction mechanisms influence actors' performances, and in which way and within which limits public intervention can control this performance.   Institutional economics has been associated with several different schools of economic theory; I however am using the definition that is best associated with the work of economist Douglass North.

The term institutionalism is particularly useful in describing the problems associated with today's music industry and how social norms can be changed on both a formal and informal institutional level.   Formally piracy of copyrighted material is not allowed in countries that have strong institutions.   However with the advent of file sharing technologies such as peer-to-peer file sharing, it has made the piracy of copyrighted material so easy and accessible that it has become an informally accepted norm among a large portion of society.   Even if traditionally many consider it an immoral act to partake in piracy, these values are challenged when a technology is present that allows individuals to partake in this act while offering a high rate of lack of jurisdiction.

8.2. Music Industry:

Before discussing the future of the music industry and its current climate any further, it is necessary to define what one means when one is referring to the music industry.   We must define what the music industry is in order to avoid confusion and to insure that we are on the same level of understanding.   For this thesis I am using Wikström's definition of the industry which he defines as an   "...industry consisting of those companies concerned with developing musical content and personalities which can be communicated across multiple media" (Wikström 49).   He expands on this concept by stating that the industry has been traditionally made up of three elements: recording, publishing, and live performances.   Wikström's definition of the music industry may seem rather broad and encompassing the total complexity of the industry.   However I believe that a definition that is a bit broad is better than one which is too narrow since the dynamics of the music industry is rapidly changing and a narrow definition would soon become out of date.

8.3. Copyright Industry:

The music industry can be classified as a copyright industry.   "Copyright legislation is what makes it possible to commodify a musical work, be it a song, an arrangement, or a recording" (Wikström 17).   Viewing the music industry as a copyright industry rather than a creative industry is useful because it allows one to "emphasize focus on the nature of product and trade with the industry" rather than concerning oneself with ambiguous questions concerning creativity and the quality of music and its value (Wikström 49).   Copyright has been essential for the industry to exist since "the core of the music industry is to develop musical content, and if the industry was not able to profit from the content it produces the industry would not be able to exist (Wikström 49)".

What separates copyright industries from regular industries is that they do not produce material goods and instead produce information goods.   Another aspect that can characterize the music industry as a copyright industry is the fact that the production cost concerning the production of musical content is high, but the reproduction costs are low.

8.4. File Sharing:

File sharing can be defined as the method of distributing or providing information stored in a digital format.   File sharing is often performed with the assistance of the internet or a network, but it can also be done manually with removable media.   Removable media is computer storage or digital memory that can be taken from the computer without the computer being on. There are several formats of removable media that have been used in the past and present: optical discs (DVDs, CDs), memory cards, floppy and hard disks, USB thumb drives, magnetic tape, and punch cards (Benj Edwards 1).

One of the first examples of file sharing concerning music was with the advent of the compact cassette which utilized magnetic tape to store music.   Even though the compact cassette has its origins dating back to the 1930's it was not until the 1970's and 1980's that it became a product that was made affordable for the general public (Benj Edwards 6-9).   This was a significant innovation because it was the first time that nonprofessionals had the opportunity to copy and distribute music.

Today, however, the term file sharing is almost always associated with peer-to-peer computing.   Peer-to-peer computing refers to a network of computers and nodes that are connected to each other to distribute and transfer data; computers in the network store and distribute bits of data.   With peer-to-peer file sharing there is no central server and this in return makes file sharing much more difficult to monitor than the tradition client server network topology (Wikström 148).   Each computer which is connected to this network shares the function of being a server, which means a computer participating in a peer-to-peer network is acting both as a client and as a server.   Peer-to-peer file sharing first became popular with the general public with the foundation of Napster by Shawn Fanning in 1999.

8.5. Cloud Computing:

The term cloud computing is a phrase that has its origins from the late 1960's and the early 1970's as a metaphor to describe the internet.   The cloud metaphor was used to "summarize all the resources, cables, and gadgets which connected the computers to the nodes of their network (Wikström 3)".   The company Sun Microsystems used the phrase "the network is the computer" to convey their belief that the cloud would eventually evolve to such an advanced level that computers that were connected to this network would not need to be highly sophisticated or expensive, since the cloud would be so advanced that it would be able to perform all the necessary computing functions via the network (Wikström 3).

Cloud computing is still in a fairly early stage of development and hasn't reached the full potential envisioned by Sun Microsystems, however the main idea of cloud computing seems up to date with how the internet is currently progressing.   Cloud computing has come to be associated with Web 2.0 applications (Wikström 3).   Web 2.0 applications describe the process of using an application that delivers full-fledged web-based software services via a web browser more than delivering a product.   One of the most useful aspects about using cloud based platform services is that one generally does not need to download or update anything on one's hard drive.   This is because the software that cloud computing offers is stored on an external server which gives the user a greater amount of versatility.   Cloud computing services are either subscription based, pay per use based, or offered for free.   It is important to note that cloud computing is not the same as peer-to-peer since cloud computing's infrastructure is based on a client/server model which uses a central server unlike in peer-to-peer computing which lacks a central server (Sheehan 1).

8.6. Control vs. Connectivity:

'Control and connectivity' can be seen as two defining aspects of the past and future music industry (Wikström 5). In the past the music industry could exercise a high level of control over the production and distribution of musical content since the technologies surrounding the production and distribution of music was expensive and only professionals could afford these costs. Now with the advent of information technology, not just peer-to-peer-file sharing but also a whole range of new digital technologies, has it been made possible for anyone to theoretically upload musical content onto the internet or to download music content. These technologies have in many ways granted the layman power that before only the music industry enjoyed. These same technologies shift the high level of control from the industry into the hands of the public. In the past there was a low level of connectivity between the audience and the music industry and very little dialogue between the music companies and music consumers. Dialogue existed, but it was one sided. The music industry promoted their products and the consumers responded by either buying or not buying what the industry was selling (Wikström 5-6).

In the modern age there is a high level of connectivity concerning the distribution of music, since it is not only professionals who are able to do this but also amateurs. Music consumers communicate with both each other and artists about what they like and do not like via blogs, social media, music streaming websites, and forums.

9.   Examples of Cloud Computing in Music:

There are several examples of popular music resources on the internet that use cloud computing. Some websites integrate social media functions with cloud computing in order to allow users the opportunity to discuss and review music themselves.   Myspace music and Last.fm are both examples of companies that use integrated social media as a part of their services.   Professionals and amateurs can upload content on these websites and they allow users to stream music.   This has also allowed the opportunity for outsiders of the music insiders and musicians who live in remote areas unable to perform their work regularly, the opportunity for the public to access their work.   Last.fm shares similar social media functions to that of Myspace, but what separates Last.fm from Myspace is that Last.fm uses a user recommendation system known as Audioscrobbler which suggests to users music that might fit the users taste based off songs they have previously listened to.   Last.fm is a free service in Germany, the United States, and the United Kingdom, and offers subscription based services outsides these three countries.

Contextual services, the ability for music services to help users navigate through the content of music and find music that matches users taste, is becoming increasingly important. Contextual services are supported by recommender systems which are specific types of information filtering systems that all major cloud computing media websites use including just music websites, as well as video streaming. It is " Context rather than Content" that will give music services the competitive advantage (Wikström 175).   One successful example of this, and most likely the biggest name in cloud computing currently, is the music streaming service Spotify which is a Swedish startup company now based in the United Kingdom.   Spotify offers both a free music streaming service with commercials, and a premium subscription based service with no commercials.   Spotify allows users to easily navigate through musical content, and has proven to be immensely popular in Northern Europe.

One of the reasons why Spotify has been so successful is that it has managed to take advantage of the current climate of the music industry in many ways.   This is because it is a legitimate music service which has managed to negotiate agreements with copyright holders, which satisfies the music companies while at the same time offering a service at an affordable

price to consumers who are unwilling to pay the traditionally high prices for music.

SoundCloud is another example of cloud computing music services, which is a start up company founded in 2007 by two Swedish entrepreneurs, Alexander Ljung and Eric Wahlforss, in Berlin.   The website offers both free and subscription based services, and is focused towards allowing artists to be able to distribute with each other and communicate among listeners. SoundCloud also gives artists the options of recording music directly to the website and mixing their work.

All these examples of cloud computing incorporate a high level of connectivity, where users of these services can communicate with the artists, and give artists the opportunity to distribute their work quickly and cost-effectively.   Users of these websites can communicate with each other through blogs, forums, instant messaging, and e-mail.   These functions that cloud computing offer are particularly useful for artists who are unsigned or amateur and otherwise would not have a means of distributing their music.

10. Evolution of the Music Industry:

To understand the music industry and how it is adapting to the digital age with new music technologies like peer-to-peer file sharing and cloud computing, it is important to examine the music industry in its historical context.   By examining the music industry's historical context one can see that the industry has experienced several structural crises.   These periods of structural crisis are often associated with the introduction of innovations that more efficiently distribute information.   This phenomenon is not unusual if one takes into account that the music industry is heavily dependent on the production of information goods.   With this in mind one can look at the present structural crisis the music industry is experiencing and understand that even though the situation may seem chaotic it is an essential part of its long term economic development.

In the middle ages, before the industrial revolution, the only means of making profit from music was through live performances.   This would be changed with the introduction of the moveable type printing press invented by Johannes Gutenberg in the 15th century.   The printing press made it possible to distribute sheet music across Europe and for musicians to exchange ideas among each other in a more efficient manner.   In time an industry would evolve based on the sales of sheet music.   The 15th century also saw the emergence of the private patronage of musicians. In this time period the only distribution channel that the music industry had was through live performances.   Live performances during this time were expensive and only the upper class in society could afford to pay to see concerts.

A music industry would develop alongside the modernization of Europe, and an extensive social change in how music was marketed evolved in ordered to reach a wider public.   In the 18th century, composers such as J. S. Bach were focused on producing music and meeting the demands of their employers who represented a small portion of the population, namely those that could afford the luxury of paying for concerts (Ogden 121).   Musicians though would eventually start producing music that appealed to a wider audience, and by doing so musicians were no longer dependent on private patrons in order to make a living.   This shift of focus to a wider audience made it possible for the music industry to expand to a much larger group and produce music that the general public could relate to.

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In the 1800's a concert society would emerge that would serve as the driving force in the industry.   In this business model members of the concert society were able to attend shows by purchasing tickets through subscriptions (Ogden 122).   Music became a means of defining one's social class and asserting one's standing.   In extreme cases some members of the upper class in society were known to keep their own symphonies.   This social structure of the concert society would be challenged by the introduction of Thomas Edison's invention the phonograph and the introduction of the radio, which were commercially introduced to the general public in the beginning of the 20th century.   This would mark the end of the old music industry's model based on the earnings revenue on sheet music and performances.   At the same time these new innovations of the phonograph and the radio would make music more accessible to the public and serve as a democratizing function in society that would break down social barriers.

The phonograph is an example of an innovation that brought about structural change in the music industry.   Before the phonograph it was impossible to experience music unless it was in a social context performed by musicians.   For the first time in history music was separated from its social context.   This would prove to be a turning point in history and play an important role in the modernization of society.   Instead of relying on musicians that needed to be paid in order to enjoy music, one could instead listen to a recording whenever and how many times one liked.   It had a democratizing effect on society because music was now available to the masses and not just something that only the very rich could afford.

The phonograph was significant not only because of its capability of replaying recorded music, but because it gave the patrons of music (which now included the middle class) a plethora of choice that was not available in the past.   Now the consumer of music could choose from several different genres of music, and was not constrained to only local music but could listen to music that was recorded from around the world.   One could choose either from the very best musicians of the day or obscure artists from far away.   This variety of choice, made possible through the phonograph, allowed for the general public to enjoy music.

The old music publishing industry was reduced to "administering copyrights of composers and lyricists and the collection of royalties from the sales of records and other kinds of licensing" due to the introduction of shellac disc technologies (Wikström 63).   In the 1930's and 1940's

these technologies would continue to develop and be refined.   Through several mergers and bankruptcies three major record labels emerged: RCA\Victor, EMI, and CBS Records.   Even in this early age of the record there was a high level of concentration.   In the 1950's and 1960's there would be a further structural change due to the introduction of the television and the advent of a new genre of music called rock 'n' roll (Wikström 63).   The introduction of the television forced radio to change its programming to be based mainly on broadcasting music, yet the radio would function as a powerful promotional medium for the music industry for many years (Ogden 123). The advent of rock 'n' roll was significant because it allowed for the smaller innovation record industry to break into the mainstream.   The business model that was established during the 1950's and 1960's would be the main business format of the music industry up until the 1990's which is the decade that digital music technologies began to dominate over analogue technologies, and digital media became accessible to the general public.   Some important time lines concerning digital music technology include: the introduction of the compact disc in 1982 by Sony and Philips, MP3 compression technology is invented and patented by the Faunhofer Institute in Germany, in 1998 the first portable MP3 players are developed by Diamond Multimedia and SaeHan, and in 1999 Shawn Fanning launches the first peer-2-peer file sharing website named Napster (Wikström 66).

11.   Collection of Data:

Between the 12th and 13th of September 2011 I conducted my questionnaire survey concerning different aspects on music consumption such as: illegal piracy, streaming, copyright legislation and the subscription based cloud computing service Spotify.   I collected data by asking different students around Lund University's Campus which included: the school of economics and management, the faculty of engineering, the institution of political science, sol centrum (institution of language and literature), and the student café known as Athen which is a part of the university's academic society.   On the whole I was rather successful in collecting feedback, due to the fact that the music industry is a popular topic among university students.   Out of the total 120 questionnaire's I handed out, I received a total of 105 back.   In general the questionnaires were filled out to their entirety, however occasionally age and gender and sometimes academic discipline were left blank.   The average age of a participant in this survey was 23 years of age, the oldest of the participants being 41 and the youngest 18.   The male to female ratio in this survey was almost equal with 50 male participants and 53 female participants.

Table 1:

Statistics on Participants from Questionnaire carried out between 12th-13th September 2011 in Lund			
Total Number of Questionnaires Handed Out: 120	Total Number of Males*	Total Number of Females	Average age: 23 Eldest age: 41 Youngest age: 18
Total Number Filled out: 105	50	53	Mean age: 19

*the total number of males and females does not add up to 105 because some participants left the question blank

Table 2:

Figure 1:

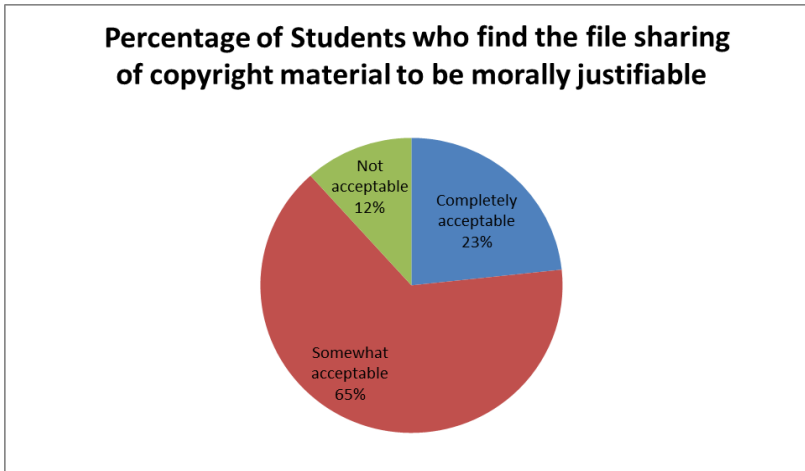| Academic Discipline/ Subject List |
| --- |
| Economics: 35 |
| Humanities: 27 |
| Information technology: 13 |
| Political science and law: 12 |
| Psychology: 8 |
| Health: 4 |
| Sciences: 4 |
| *total number of subjects does not equal total number of participants because some left the question blank/unreadable |

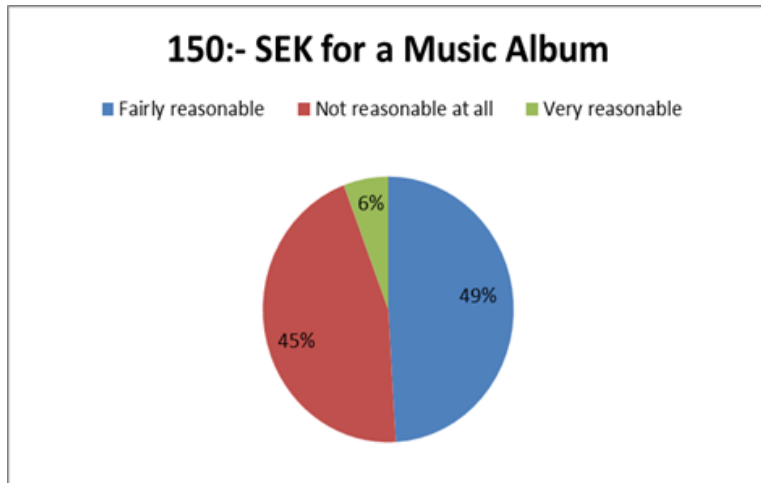**Percentage of Students who find the file sharing of copyright material to be morally justifiable**

- Not acceptable 12%
- Completely acceptable 23%
- Somewhat acceptable 65%

Figure 2:

150:- SEK for a Music Album

- Fairly reasonable
- Not reasonable at all
- Very reasonable

- 6%
- 49%
- 45%

Has the IPRED Law stopped you from downloading music from peer-to-peer websites?

- No, I still continue to download music as before
- No, because I have never participated in file sharing
- I still download, but not as often because of the IPRED law
- Yes, I have completely stopped downloading music

48%
25%
17%
10%

Has IPRED influenced you to choose music streaming website instead of file sharing websites?

- Yes, very much so
- Somewhat
- No, not at all

33%
35%
32%

Figure 5:

Most popular source for music consumption

63 Spotify
13 Peer-to-Peer file sharing
7 Compact Disc
6 Radio\Television

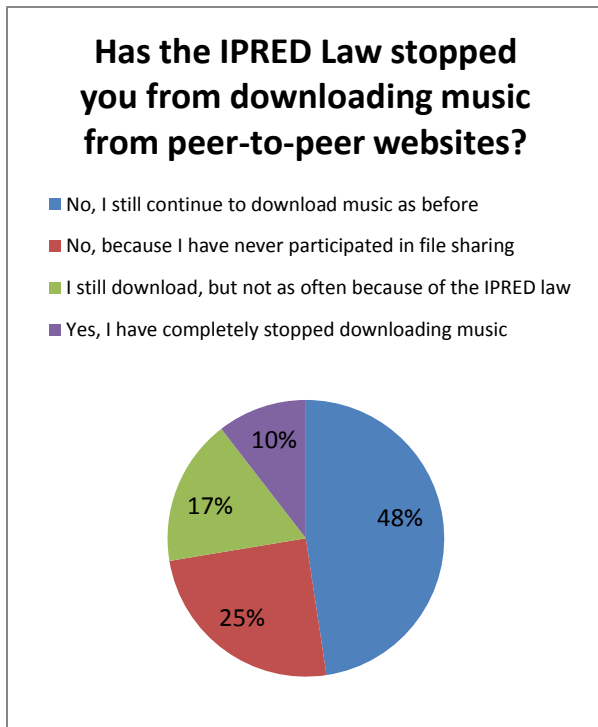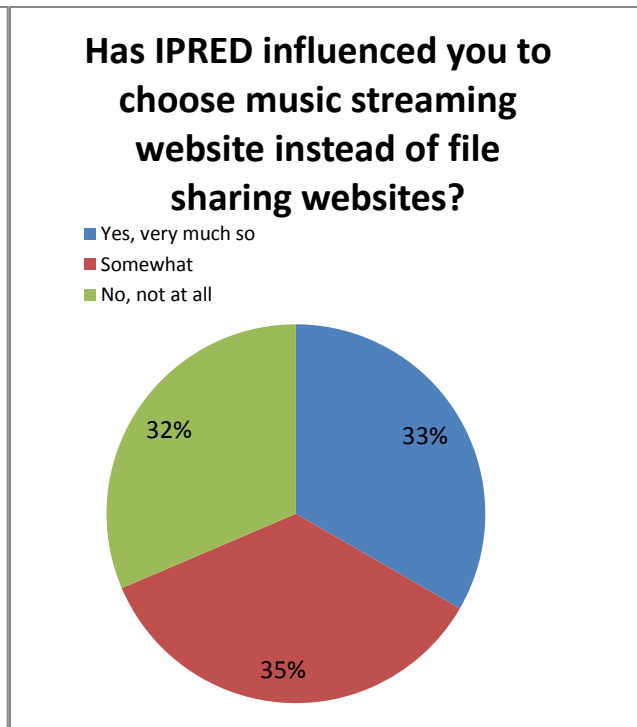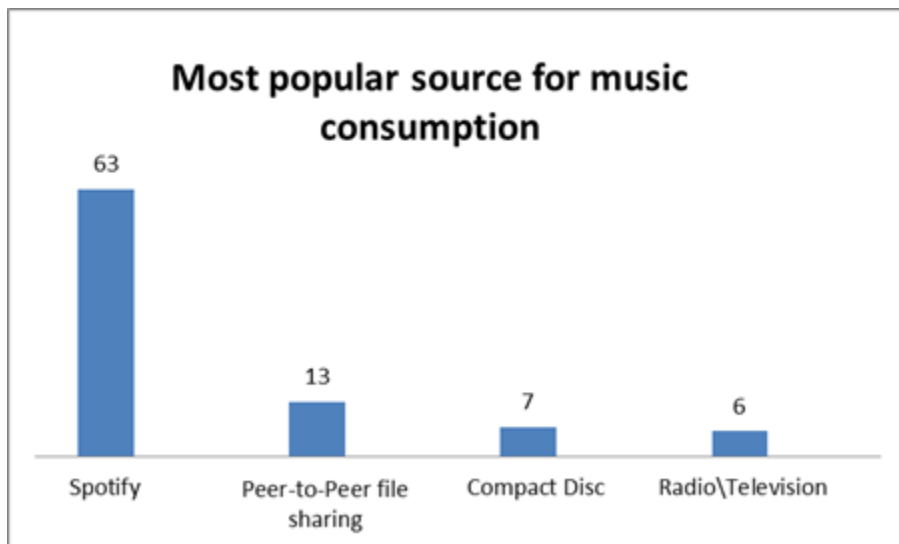## 12.   Analysis of Data and Conclusion:

The results from my investigation coincide well with my hypothesis and reflect what should be expected from the literature I have read. Since the scale of my survey is rather small I cannot say that the investigation stands as a representation of the views of the entire student population of Lund concerning copyright protection of music and the dynamics, but my data can be seen as a strong indicator of common views that students have concerning these issues.

When questioning if one considered a common price for a rebated CD in Sweden of 150 SEK was reasonable (see figure two), 45% disagreed, while 49% thought it was fairly reasonable, and only 6 % found it completely reasonable. One can see this as a sign that consumers are in general unwilling to pay the traditional prices for which the industry has been selling their product at. Interestingly enough on the question of whether one finds file sharing of copyrighted material morally justifiable (figure one) 23% completely agreed and 65% answered they find it only somewhat justifiable which shows there is still ambivalence towards the views on copyright protection, and that consumers may be willing to pay and respect copyright laws at lower prices. Subscription based cloud computing can be seen as way of solving this ambivalence by offering lower prices for music and at the same time honoring copyright laws. In figure five one can see that Spotify, a subscription based cloud computing service, is the dominating choice of music consumption.

The high level of control that the industry once had over its copyrighted material is permanently lost and this is clearly visible in figure three where 48% of the participants answered that they still use peer-to-peer websites to obtain music, while only 10% completely stopped downloading because of institutional reform. Judging from figure four one third of the participants claim that IPRED directly influenced them to choose a subscription based cloud computing service, while one third replied that it only partially influenced their choice. As hypothesized, IPRED is having a notable impact on a growing percentage of consumers in their decision making choices in file sharing and the usage of low cost subscription based cloud computing music services. Judging from the results that I have gathered technology has had a definite influence on the informal norms concerning copyright protection. On the question concerning whether one

finds file sharing of copyrighted material completely justifiable (see figure one) 23% considered the activity to be completely justifiable.   If the advancements in digital technology had not happened, and a similar survey had been taken before the advent of the digital revolution, it is unlikely there would have been such a high number of participants expressing such high disregard towards copyright protection.

That being said Sweden is a country that has a tradition of having a strong organized democratic government with people who do pay attention to formal institutional reform, and will modify their habits concerning legislation. On the question of whether or not the IPRED act had influenced their choice in using cloud computing music as opposed to using file sharing websites (see figure three) one third of the participants replied: "Yes, very much so" and another third of the participants replied: "somewhat". Even though one third replied "somewhat" to the question, this does not mean that these participants were unconscious of the IPRED act in their choice of using a legal subscription based cloud computing music service; a cloud computing service such as Spotify's success does not lie solely in the fact that it is a legal low cost alternative but also because of its ease and accessibility, and its ability to navigate through content to match their consumers' interests.

There is a fine line between how strong and weak copyright protection should be for a functioning economy.   If copyright protection is too strong it may stifle innovation, and at the same time weak copyright protection may diminish the incentive for actors to innovate which is the essential driving force in economic growth. Subscription based cloud computing, a dominating player in modern music market which is characterized by digital technology, would not have come into existence had it not been for the strong informal norm of disrespecting copyright material via peer-to-peer file sharing websites, and at the same time cloud computing such as Spotify may not have been as successful if IPRED and enforcement of control over copyrighted material had not been instated.

The music industry is experiencing a phase of creative destruction, where social norms and beliefs concerning copyrights are being challenged and changing constantly. Investigations concerning how the rationality of a consumer is affected are important because they contribute to the understanding of economic change.

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