

The times they are a-changin' IP strategies in the music industry

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The Times They Are A-Changin': IP Strategies in the Music Industry

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Abstract

IP strategies in the music industry is a complex matter. There are four identifiable factors that result in a highly dynamic environment where IP strategies change constantly. The four factors, the recording industry, the consumers, new emerging technology and the law depend and influence each other. Looking from a historical viewpoint at IP strategies in the music industry shows us that many issues did not arise only recently but are a phenomenon that traces back to the first sound recording devices. The wide-spread of digital music has revolutionized the music business. The traditional business model based on sales of CDs in retails stores seems to falter. The music industry is blaming mainly illegal downloads for the decline in revenues, however independent research points to the changing economy in the digital age and the industries' lack of flexibility to adapt to the new economy in the digital age. Extrapolating from the current developments, the music industry will continue to expand their digital products and platforms. Whereas selling CDs was their main revenue in the past, downloads, ring tones, mobile music, Internet radio, and personalized subscription radio will became the bread and butter of the music industry in the future. Consumer will also rely increasingly on having wireless access to the vast information through the Internet, and physical downloads will eventually be replaced by streaming any content, including music and videos.

The Times They Are A-Changin'

IP Strategies in the Music Industry

Michael J.B. Krieger

IP strategies in the music industry are complex. There are at least four identifiable factors shaping IP strategies in the music business, resulting in a highly dynamic environment where IP strategies change constantly. The four factors are the recording industry, the consumers, new emerging technologies and the law. Looking at IP strategies from a historical perspective reveals that many issues did not arise only recently with the dawn of the digital age, but are phenomenon that trace back to the first sound recording devices. Today, the shift towards digital music has revolutionized the music business. The traditional business model based on CD sales seems to falter. The music industry is blaming mainly illegal downloads for the decline in revenues, however independent research points to the changing economy in the digital age and the industries' lack of flexibility to adapt to the new economy. Extrapolating from the current developments, the music industry will continue to expand their newly launched digital products and platforms. Whereas the selling of CDs was their main revenue in the past, downloads, ring tones, mobile music, Internet radio, and personalized subscription radio will become the bread and butter of the music industry in the future. Consumers will also increasingly rely on wireless access to music through the Internet. Physical downloads will eventually be replaced by streaming the media content.

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1. INTRODUCTION

To write about IP strategies in the music industry is a complex matter. Four main factors, the recording industry, the consumers, technology and the law interact in an intricate fashion (Figure 1a). Each of these factors depends and influences simultaneously the other three players, resulting in a highly dynamic environment. For example, new technologies change the recording industry's way of doing business, as the recently emerging digital technologies have demonstrated. But the recording industry also influences the development of new technologies, such as the mandated copy protection systems. Likewise, the law influences the recording industry, by protecting – or not protecting – certain types of works. Correspondingly, the recording industry also influences the law: they often initiate new legislation to strengthen their rights which when passed by congress becomes applicable law. By default, the consumer and the law are tightly linked. The law is meant for citizens in a specific jurisdiction, which do – or sometimes do not – abide by these laws.

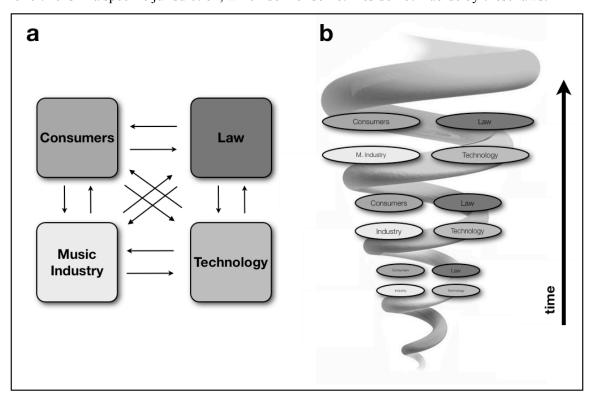


Figure 1

In turn, the recording industry influences consumers, but obviously consumers are not complete docile sheep; they also have a significant say in the success of a new music releases. The last important relationship is between technology and consumers. On one hand, new technologies are handed to and accepted by consumers (e.g. CD), but consumer behavior also induces new technological developments, such as the affinity to portable music players. In a nutshell, all these

factors play into each other in a non-linear fashion, creating a complex interwoven web of relationships. As this would not be enough complexity, their relationships evolve with time. Rather than simply representing their relationship as a 2-dimensional drawing as shown in figure 1a, a more accurate representation is depicted in figure 1b, where time propels these relationships forward, creating a spiral of 3-dimensional shape.

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Unfortunately, any written text has to be presented in a linear fashion. In order to capture this intricate web of interwoven relationships, I will have to isolate specific topics, in the hope to adequately convey the three-dimensional structure.

I will first start in chapter 2 with a brief summary on the history of sound recording devices and media. Although not absolutely crucial for the comprehension of the following chapters, it is helpful to understand the underlying technologies. In the 3rd chapter, I will outline matter pertaining to copyright theft, detailing the issues related to each recording device and medium mentioned in 2nd chapter. As we will see, the legal issues, consumer behavior and the lobbying of the music industry traces back to the first recording devices. Furthermore, these issues, although in a different technological context, are very similar whether we look at the player piano or at the newest generation of digital gadgets. I will start with the first sound recording devices and move up through history, discussing the piano roll, the cassette tape and digital devices such as CDs, MP3-players and peer-to-peer computer networks. Included in this chapter are also court cases and new legislation proposals that usually followed technological innovations. Perhaps more than any other chapter, this chapter captures the intricate relationships depicted in figure 1.

Chapter 4 deals with the current upheaval in the music industry caused by the digital revolution. Again I will start off with a short historical perspective on the traditional role of record labels, followed by how the recent changes in the digital age are challenging their traditional business models. I will also give a short overview of the current digital music market, including music piracy and the role of large grocery retailers as substitute for the disappearing record stores.

Finally, the last chapter deals with the current and new emerging business models and IP strategies in the digital age. In a first part, I describe the IP strategies of two now gray-haired rock groups, the Rolling Stones and the Grateful Dead. Although their business models cannot be categorized as cutting-edge anymore, both their IP strategies have been very successful. In a second part I will describe the current business models in the music industry. The business models in the digital age are very diverse, some adhering to the old way of doing business, others characterized by innovation and experimentation. Specifically I will consider new distribution channels, such as single-track download services, subscription models, music that can be downloaded to mobile phones, and the importance of social networks as well as other self-distribution models.

I will limit my paper mostly to the US Market, as many technological developments, new copyright legislations, latest consumer behavior, and most trend-setting artists have their origin in the United States. Europe and other countries will be dealt with only in a few chapters, mainly in connection with music piracy and the digital music market.

2. THE HISTORY OF SOUND RECORDING

2.1. Early History: the Music box, the Player Piano, and the Wax Cylinder Recorder

During most of humanity's history, music could only be experienced in the presence of performing artists. You could not buy, copy, or sell it. The first devices that were able to reproduce music were the so-called music boxes, musical devices that produce sounds by striking pins placed on a revolving cylinder against teeth of a steel comb. Needless to say, music boxes cannot reproduce the actual timbre of the original music and are only capable of reproduce the melody and pitch.

The progenitor of the music box dates back to the early 14th century. A Dutch bell ringer invented a cylinder operating cams, which hit various tuned bells. Inspired by this idea, Antoine Favre, a Swiss clockmaker from Geneva, substituted the bells with combs, allowing each tooth to be tuned

precisely. In 1811, the first musical box was produced in Sainte-Croix, a sleepy little village in the Swiss Jura. The musical boxes were soon in high demand and surpassed the watch-making and lace industries, the most prosperous industries in Switzerland at the time.

At the height of the music box's popularity the player piano was invented. The player piano is a self-playing piano, allowing the piano keys to be hit through a pneumatic mechanism¹, controlled via perforated paper rolls. In contrast to the music box, the player piano captures not only the pitch, but also the duration of the notes from the actual performance, making it a huge commercial success. At the top of its popularity, more than 75,000 player pianos were sold².

Although some player pianos³ were also able to record performances, and hence representing the first audio recording devices, it was Thomas Edison in 1877 who invented the first bona fide audio recording device, the so-called wax cylinder recorder. It consists of a large funnel into which the artist spoke, causing the diaphragm at the narrow end of the horn to vibrate. Attached to the diaphragm is a needle which transmits the vibrations into a rotating wax cylinder, capturing the vibrations onto wax. Already by the 1880s, the wax cylinders and the machines that could play the roles were mass marketed. The main drawback of the wax cylinder is obviously its durability, as it rapidly wears out and can only be played a few dozen times. Although disc shaped records of much higher durability were invented about the same time,⁴ they were not manufactured in the United States due to patent protection.⁵ However, by November 1918, the patents expired, and many companies started to manufacture the discs also in the United States. While the system did not allow to make home recordings, their superior durability and playback quality eventually replaced the wax cylinder by the end of the 1920's.

2.2. The Birth Home Recording: the Cassette Tape

Although the recordable wax cylinders were already available in the 1880s, they never gained much of importance as serious music recording devices. The real revolution happened only about 80 years later, when mass production of compact audio cassettes began in 1964⁶. Sold under the

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Needham filed a patent in 1880 describing a pneumatic player device in a piano.

² Mark Coleman (2004) Playback: From the Victrola to MP3, 100 Years of Music, Machines, and Money. Da Capo Press, Cambridge, MA.

Formemost the Welte-Mignon player piano, invented by the German Edwin Welte, launched in 1904.

⁴ by Emile Berliner in 1888.

⁵ Discs were marketed only under the Berliner Gramophone label.

⁶ Prerecorded music cassettes were launched in Europe in late 1965.

trademark name Compact Cassette⁷, the new magnetic tape cartridge was often referred to as cassette tape, or simply tape. It comprises a magnetizable polyester type plastic film with a magnetic coating to encode the sound waves. While invented originally for the purpose of dictation, technological improvements made the cassette tape to be used mainly for sound recordings, and later even for data storage with the first microcomputers. The original magnetic material was based on gamma ferric oxide (Fe₂O₃), but other magnetic coatings followed suit. Around 1970, 3M Company developed a cobalt coating, BASF a chromium dioxide (CrO2) coating, and TDK a magnetite coating. Each of these coatings were claimed to be superior to the ferric oxide tape⁸ (and obviously to each other), claiming to achieve the sound quality of vinyl records.

Despite its lower playback quality, the cassette tape soon became the most popular medium⁹ for distributing prerecorded music, either music sold by record companies or privately made recordings. Mixtape compilations of the owners' and their friends' records or recording music from the radio became highly fashionable. During the 1980s, the cassette's popularity grew even further, due to two new portable playback devices. First, small portable pocket tape players such as Sony's Walkman gained extreme popularity, a device that would not have been possible without the compact size of the cassette tape. Another portable device, although considerably larger, was the portable cassette deck with powerful speakers (played usually at high volume). These players were soon to be adopted by urban youth culture associated with phenomenon such as breakdancing and hip hop culture. These devices became later known as "boom boxes" or "ghetto blasters", popularized through television and music videos.

Apart from the purely technological breakthrough, the cassette tape is also attributed as catalysts for social change. The cassette tape played an important part in bringing rock and punk music behind the Iron Curtain, creating a breeding ground for Western ideas and culture¹⁰. Likewise, the cassette tape was being blamed of bringing unwanted secular influences into traditionally religious areas in India¹¹. Another interesting anecdote of the application of the cassette tape was masterminded by an unlikely source, Ayatollah Khomeini. In the 1970s Khomeini moved to Paris

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 $^{^{7}\,}$ The word cassette is a French word meaning "little box".

 $^{^{\}mbox{\footnotesize 8}}$ High frequencies were underrepresented with ferric oxide tapes.

Reel-to-reel tape recording was still used in professional settings.

Robin James & Dave Mandl (1992) Cassette Mythos. Autonomedia, Brooklyn, New York.

¹¹ Peter Manuel (1993) Cassette Culture: Popular Music and Technology in North India. University of Chicago Press, Chicago, Illinois.

in France, as he thought the fight against the Shah was even more effective when conducted from abroad. His speeches against the Shah were first recorded and then duplicated onto music cassettes. The cassettes were subsequently smuggled into Iran and further copied inside the country. Apparently, his tapes became a hotly traded item, and his messages spread within a very short time over all of the country¹².

In most industrial countries, the demand for cassette tapes declined after 1990. For example, sales of music cassettes in the United States dropped from 442 million in 1990 to about 700,000 in 2006¹³. The reason most pundits agree was the introduction of the compact disc, with its greatly enhanced music fidelity. Already in 1993, 5 million compact disc players were sold in the United States alone, amounting to almost half of all American households. However, cassette tapes remained popular in certain areas, such as missionary work, preferred media for audio books, and playback media for the blind and physically handicapped people.

2.3. Digital Audio

2.3.1. Development of the Compact Disc

The Compact Disc (CD) is an optical disc developed by Sony and Philips Consumer Electronics for storing digital audio. Introduced already more than 25 years ago, the CD remains the standard playback medium for commercial audio recordings. Over the past 25 years, over 200 billion CDs have been sold worldwide¹⁴.

Although the CD was jointly developed by Sony and Philips, early developments were entirely based on research conducted by Philips on laser technology and optical video discs 1977¹⁵. At the time, many companies worked on optical discs, but Philips was the first to present a working prototype to the public in 1979. Even though the prototype was in an early development stage, the Philips management deemed it important to win the support of both the public and the industry for their idea. Clearly, Philips wanted to prevent a battle between the different, non-compatible systems, and at the same time determine the new standard. After a large Philips delegation met with the Japanese Ministry of Industry and Technology (MITI), trying to secure a Japanese

 $^{^{12}\,}$ http://i-cias.com/e.o/khomeini.htm (last accessed Sept., 25 2008).

http://articles.latimes.com/2007/aug/09/business/fi-cassettes9 (last accessed Sept., 25 2008).

http://www.research.philips.com/password/archive/30/downloads/password30.pdf (last accessed Sept., 25 2008).

How the CD was developed (17. Aug., 2007) (http://news.bbc.co.uk/2/hi/technology/6950933.stm) (last accessed September, 25 2008).

collaboration to increase the potential of the new player, Sony offered to jointly develop the CD further, which the Philips management happily accepted.

Philips' collaboration with Sony was a very good business decision, as both their expertise proved to be extremely complementary. For example, Sony had previously developed an error-correcting system allowing errors made during the reading process to be corrected. While not crucial for reading audio files, an error correcting system was critically important regarding the future use of the CD as data storage devices for computers. On the other hand, Philips developed the ideal pit pattern used for translating the ones and zeros into a pattern of pits on the discs. Other aspects were decided jointly, for example the storage capacity for a CD was first set to one hour of audio content, but later changed to 74 minutes to accommodate a complete performance of Beethoven's 9th Symphony¹⁶. This addition increased the diameter from 11.5 to 12 cm, but it was still comparatively small making it possible to design small portable devices, a strategy that has been proven to be extremely successful with its predecessor.

Interestingly, despite their collaboration and cross-licensing of patents related to the CD, Sony and Philips developed their own players and were technically competing against each other. However, it was not the usual competition as both manufacturers agreed that essential electronics components would remain interchangeable, and kept each other updated on the progress and development of their technologies. Furthermore, they agreed to launch their product simultaneously to "give the consumers confidence that the CD was a universal standard".

In October 1982, the first CDs and CD players were introduced in Japan, and a year later in the United States. The CD was received with much enthusiasm, although some vinylophiles complained about the lack of "warmth" in CD recordings. As the new technology got track among the masses an increasing number of artists recorded or converted their existing albums to the CD format. Already by 1983, more than 1,000 different titles were on the market, and by 1985 Sony and Phillips had already sold 59 million CDs worldwide¹⁷.

¹⁶ http://www.research.philips.com/newscenter/dossier/optrec/beethoven.html (last accessed Sept., 25 2008).

http://www.research.philips.com/password/archive/30/downloads/password30.pdf (last accessed Sept., 25 2008).

2.3.2. The Digital Audio Tape and the MiniDisc

Digital Audio Tape (DAT) is a sound recording and playback medium introduced by Sony in 1986. It was modeled after its highly successful analog predecessor, the cassette tape, however as the name suggests, the recordings are stored in digital form.

DAT was widely adopted by the audio recording industry in the 1990s because the DAT format allowed the recording of the master tape in a format that did not loose its quality over time. However, outside professional circles, the technology was never adopted by a larger majority, as the DAT recorders were relatively expensive and commercial recordings were rare. In November 2005, Sony announced that the DAT machines would be discontinued.

The MiniDisc is another digital media that was thought as a replacement for the Philips analog cassette tapes. But like the DAT the MiniDisc was never highly successful. The failure was again attributed to the few titles available as well as the high cost of the equipment. Only in Japan, the MiniDisc enjoyed some success, nowadays however, they are to a large extent replaced by flash memory and hard disk drive-based audio players. Since the late 1990s pre-recorded MDs have almost disappeared from the music stores.

2.3.3. The Computer, MP3 and Other Formats

In 1987, the Fraunhofer Institute for Integrated Circuits (part of Fraunhofer Society) started a research project on high quality, low bit-rate audio coding, led by Karlheinz Brandenburg, a specialist in mathematics and electronics. Almost 7 years later, the Fraunhofer Society released the first software (L3enc) to encode and decode music files. As it was customary with most operating system of that time, each file had a file extension to identify the file type. The Fraunhofer team chose MP3 (previously bit), giving MP3 its name. Soon after, the first real-time software MP3-player Winplay3 was released enabling end-users to encode and playback MP3-files on their PCs. Today, the MP3-format is by a wide margin the most dominant audio format, supported by most digital audio players and software. Alternative formats are AAC and WMA, using newer compression algorithms that address shortcomings of the MP3 encoding as well as allowing for Digital Rights Management (DRM) restrictions. AAC's best known as the default audio format of Apple Inc. (iPhone, iPod, iTunes), but is also used in a variety of Sony products (PlayStation 3,

¹⁸ On September 9, 1995.

latest generation of Sony Walkman, Sony Ericsson Walkman Phone), and Nintendo's Wii. WMA is an audio data compression technology developed by Microsoft which supports DRM.

When performing audio encoding, such as creating an MP3, AAC or WMA file, the data is compressed in order to reduce the size of the file. The more the data is compressed, the less space is needed, however with the undesired side effect that it reduces the sound quality as well. Indicative of the quality of the recording is the user-set bit rate. The bit rate specifies how many kilobits the file may use per second of audio. MP3 provides around a 10:1 compression format, reducing the file size of a three-minute song from approximately thirty MB to three MB – a considerable improvement given that the standard hard drive size in the mid 1990s was typically around 500 MB. Today, where most hard disks can hold several hundred gigabytes, the efficiency of compression is of lesser concern, however, the reduced file sizes are still important for expedient transmission over the Internet.

3. COPYRIGHT THEFT

3.1. Early History: Piano Roll and the Wax Cylinder

Copyright theft in the music business and measures to prevent such acts are not phenomenon of the recent digital music revolution. It already started with the first recording device, the player piano. The piano player rolls, the software that allows production of the recorded performance on the player piano, were subjected to a whole duplication industry not unlike the contemporary pirate industry. Copying piano player rolls was already wide spread when the White-Smith Music Publishing Company, a company that produced piano rolls, sued the Apollo Company for copying rolls. Eventually, the case ended up the Supreme Court of the United States¹⁹. The Supreme Court however decided that piano rolls do not fall within the meaning of a "copy" of a musical composition as defined in the Copyright Act. They argued that "a copy is a written or printed record of it in intelligible notation, and this does not include perforated rolls which, when duly applied and properly operated in connection with musical instruments to which they are adapted, produce the same musical tones as are represented by the signs and figures on the copy in staff notation of the composition filed by the composer or copyright." Although the Supreme Court recognized that "the use of these perforated rolls, in the absence of statutory protection, enables the manufacturers thereof to enjoy the use of musical compositions for which they pay no value",

 $^{^{19}\,}$ White-Smith Music Pub. Co. v. Apollo Co., 209 U. S. 1 (1908).

however, "such considerations properly address themselves to the legislative, and not to the judicial, branch of the government". In a similar case²⁰, albeit with another sound recording media, the wax cylinder, it was similarly decided that the ordinary meaning of the words "copying" or "publishing", cannot be enlarged to include the copying of a wax cylinder. In response to the wax cylinder and piano roll ruling, copyright holders pressured Congress to draft new legislation in order to provide greater protection for music performances. As a result, the United States congress amended the Copyright Act in 1909 to include "any system of notation or any form of record in which the thought of an author may be recorded and from which it may be read or reproduced"²¹.

3.2. The Cassette Tape

Most cassette tapes were sold blank and used for recordings, whether from the radio, the record collection of a friend, or simply to make a portable copy for the use in the car. Copying of copyrighted material for commercial purposes was already captured in the Copyright Act of 1909. The question whether the manufacturing of equipment to duplicate cassette tapes constitute a copyright infringement was decided in the UK in CBS Songs versus Amstrad in 1988²². The House of Lords decided in favor of Amstrad, the manufacturer of a high-speed twin cassette deck that allowed one cassette to be copied directly onto another. The courts held that manufacturers could not be held accountable for the actions of its consumers.

A similar case was heard in front of the United States Supreme Court, albeit involving the home use of video recorders. In Sony versus Universal City Studios²³, Sony the manufacturer of the (then) popular Betamax VCR, was sued on contributory copyright infringement. The movie studios argued that the taping of copyrighted films and television shows violated their property rights. The Supreme Court, reversing a 1981 ruling by the 9th Circuit Court of Appeals, held that home taping did not infringe on the copyright law unless the copied material was used for a "commercial or profit-making purpose". Justice John Paul Stevens, arguing for the five-member majority, held that "time-shifting", or the recording of programs for later viewing "merely enables a viewer to see such a work which he had been invited to witness in its entirety free of charge". He continued: "One may search the Copyright Act in vain for any sign that the elected representatives of the millions of people who watch television every day have made it unlawful to copy a program

²⁰ Stern v. Rosey, 17 App. D.C. 562, 1901 WL 19187 (D.C. Cir. 1901).

²¹ United States Copyright Act of 1909, SEC 1 (e) (a).

²² CBS Songs Ltd. v. Amstrad Consumer Electronics (1988) AC 1013.

²³ Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417 (1984).

for later viewing at home, or have enacted a flat prohibition against the sale of machines that make such copying possible." The court concluded that noncommercial home taping fell within the so-called "fair use" exception to copyright laws.

The doctrine of "fair use" in United States copyright law recognizes the right of the public to make reasonable use of copyrighted material, in certain instances, even without the copyright holder's consent. Because the language of the fair use statute is not absolutely defined, the determinations of fair use is usually decided by a "case-by-case" analysis by the courts²⁴. A determination of fair use by a court considers four factors: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work. Obviously, the music industry was (and is) not too happy with the doctrine of "fair use", claiming that copied music ate into their record and prerecorded cassette tape sales. They even created the slogan "Home Taping Is Killing Music" to lobby for their cause, however others argued that the cassette tape is actually a perfect medium for spreading new music, helping eventually to increase the record sales.

3.3. The Birth of Digital Rights Management

Digital rights management (DRM) refers to technologies that control access to copyrighted material on devices or digital media. The birth of DRM evidently only started with the advent of digital music recordings. However, the legal issues, consumer behavior and the lobbying by the music industry are very similar to the ones that were made in regard to analog recording devices.

3.3.1. The Digital Tape and Audio Home Recording Act (AHRA)

In 1986, Sony released the first digital recording device, the DAT tape recorder. It provided the consumer with the first digital audio storage system. Since the consumer could make perfect digital copies without quality loss, the music industry feared that illegitimate flawless copies would have severe effects on CD sales. As a result, the Recording Industry Association of America (RIAA) threatened to sue anyone importing or selling DAT recorders into the US, unless they include a copy restriction technology into the device. The ground for such action was the claim

²⁴ Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994).

²⁵ 17 U.S.C. §§ 107(1)-(4).

that the sale of DAT recorders would inevitably lead to copyright infringements, and the device makers could be sued on secondary copyright infringement. The standoff was finally broken when the device makers agreed to include a copy restriction technology in consumer DAT recorders, the so-called Serial Copy Management System (SCMS), to prevent serial copying²⁶. The recording industry independently pursued legislation that would require royalties on digital audio recording devices and media. Eventually, the proposed bill passed both houses of Congress, and President George H. W. Bush signed the Audio Home Recording Act of 1992 (AHRA) into law.

The AHRA establishes a number of important precedents in US copyright law in regard to the opposing interests of the device makers and the content industry. The AHRA is the first technology mandate in the copyright law, the first anti-circumvention provisions in copyright law, and the first government-imposed royalties on devices and media. The AHRA mandated that all digital audio recording devices sold in the United States (excluding professional audio equipment) have to include the SCMS, often referred to as "scums" in consumer circles. The SCMS allows the creator of a tape to control the future copying of the tape, for example restricting the copying to only one generation, or permitting copying at will²⁷. The AHRA affected any digital home recording device, including the MiniDisc recorder released in 1992, and later CD recorders and duplicators.

The AHRA's establishes in its statutory definitions "digital audio recording device" and "digital audio recording media". Interestingly, the definition focuses not on the device's capabilities, but whether the device is marketed to make audio recordings. In other words, a built-in CD-R recorder of a personal computer would not fall under a digital audio recording device under the Act, since the personal computer was not primarily marketed for making audio recordings. On the other hand, identical hardware marketed for making audio recordings would be covered. Since personal computers are practically present in every household, and most of the copying of music is done with personal computers, the AHRA is essentially old law that is inapplicable to the intended purpose.

3.3.2. The Computer, the CD, and MP3-players

As detailed the previous section, the biggest challenge for the music industry did not come from the new digital audio recording devices, but from the wide use of personal computers, allowing

²⁷ 138 Cong. Rec. H9029-01, H9046.

 $^{^{26} \ \}text{Hans Fantel (Aug. 6, 1989) SOUND; Harmony Envelops the DAT. New York Times, New York, New York.}$

consumers to duplicate audio CDs or convert copyrighted the music into MP3-files, files that can be easily distributed electronically over the Internet. The ease at which copyright law could be circumvented and the difficulty of detection and enforcement let the copyright owners to look to technological solutions, in addition to legal solutions. However, for every technology that can be created, there is a technology that can (and will) be created to circumvented the protection provided. To address this issue, a diplomatic conference was convened in Geneva, Switzerland under the auspices of the World Intellectual Property Organization (WIPO). Two new multilateral treaties were adopted to protect copyrighted material in the digital environment, the "WIPO Copyright Treaty" and the "WIPO Performances and Phonograms Treaty". These two treaties were implemented in the United States copyright law, known as The Digital Millennium Copyright Act (DMCA) and signed into law by President Bill Clinton on October 28, 1998. It criminalizes production and the distribution of software, devices, or services that can be used to circumvent measures that control access to copyrighted works (DRM). Interestingly, the act of circumvention is unlawful whether the protected data is copyrighted or not. Similar provisions were passed in the European Union, known under the EU Copyright and the Electronic Commerce Directive²⁸.

The DMCA has been largely ineffective to prevent users to circumvent DRM. Software to circumvent DRM remains widely available over the Internet. Similarly, the AHRA's is of little help when it comes to controlling the use of computers in regard to copying or "recording" audio files, since computers and MP3-players do not qualify for AHRA's statutory definitions as digital audio recording devices. The AHRA digital recording devices definition became important in a case heard before the 9th Circuit, where the RIAA filed suit against Diamond Multimedia Systems Inc., the maker of one of the first portable MP3-player, the Rio PMP300. The Rio MP3-player did not include any copy protection system (SCMS) and Diamond Inc. had also no intention to pay any royalties. In 1999, the 9th Circuit Court ruled in favor of Diamond Multimedia, stating that the Rio player was not a digital audio recording device for the purposes of the AHRA, since the Rio only stored files from computer hard drives and was not able to record music directly. This decision made clear that not only MP3-palvers, but also computers are exempted from SCMS and royalty payments, enabling everybody to make digital copies of their compact discs. Even though the AHRA had been put in place to prevent the digital copying, with the omnipresence of personal computers combined with the emerging MP3-players digital copying was uninhibited, circumventing any copy control that was required in digital audio recording devices.

²⁸ On May 22, 2001.

3.3.3. Copy Control

Not being able to prevent consumers to make use of computers and MP3-players without paying royalties, the recording industry thought of alternative ways to protect their intellectual property. Since computers and MP3-players cannot be protected, why not directly protect the source, namely the CDs that are used to create the files in the first place? The only difficulty was that there is no simple way to include copy protection mechanisms directly onto the compact disc, as the audio data storage protocol (Red Book), the format of all music CDs, is a fixed standard and having little extra space to contain such data. Obviously, when the CD was introduced, neither digital copying nor the Internet file sharing was foreseen. Another difficulty of introducing copy protection mechanisms onto a CD is that the intended modification of the standard CD storage protocol must still yield usable results when played in CD players. Nevertheless, some CD manufacturers incorporated DRM with the little extra space available on the CD, generally referred to as Copy Control. Several methods were used, including "hiding" the audio tracks from the CD-ROM drives in computers (but not in audio CD players) by using a non-conforming table of contents or introducing false error-correction codes for the audio data, which resulted in audible errors in "ripped" copies. While the Copy Control methods had limited success²⁹, and even played in a number of computer CD-ROM drives, some CD players were unable to read the discs. In France, a lawsuit was successfully brought against EMI because the Copy Control protected disc did not play in the plaintiff's CD player, arguing that the modified product was defective³⁰.

The Copy Control based on non-conforming table of contents or the inclusion of the false error-correction codes pales to the Copy Control that was introduced by Sony BMG in 2005. The new Copy Control was called the Extended Copy Protection (XCP), a software that was secretly installed when customers tried to play audio CDs on Windows computers. This case became later known as the "Sony BMG CD copy prevention scandal". The exact mechanism of the new Copy Control scheme was unknown until Mark Russinovich posted on his blog³¹ a detailed description entitled "Sony, rootkits and digital rights management gone too far". He detailed how the Copy Control software installed silently even before the end-user license agreement (EULA) appeared. Furthermore there was no uninstaller available and slowed the user's computer. But most of all, he showed that the software employs unsafe procedures, which could be used as backdoor for worms

²⁹ It has been reported that the non-conforming table of contents may be bypassed by coloring the outer 2-4 mm of the compact disc with a felt-tip marker.

Tribunal de Grande Instance (T.G.I.) de Nanterre, Sept. 2, 2003, No. R.G. 03/06625.

³¹ http://blogs.technet.com/markrussinovich/archive/2005/10/31/sony-rootkits-and-digital-rights-management-gone-too-far.aspx (last accessed Sept., 25 2008).

and other malware to gain access to the computer. The problem was so severe that on November 16, 2005, the United States Department of Homeland Security issued a notification stating that "the technique used in the XCP is a security threat to computer users, and that one should "not install software from sources that you do not expect to contain software, such as an audio CD".³²

As a consequence, the Texan Attorney General brought legal action against Sony BMG in this matter³³. Class action suits were also filed in New York and California³⁴. Eventually, Sony entered a settlement, which was approved on January 6, 2006. By the beginning of 2007, the United States Federal Trade Commission (FTC) announced another settlement with Sony BMG regarding its copy protection scheme. Apart from monetary compensation, the settlement demanded that any future CDs containing Copy Control software need to be clearly labeled, and if contained, can only be installed with the user's consent. FTC chairwoman Deborah Platt Majoras explained that "installations of secret software that create security risks are intrusive and unlawful. Consumers' computers belong to them, and companies must adequately disclose unexpected limitations on the customary use of their products so consumers can make informed decisions regarding whether to purchase and install that content." Sony eventually recalled millions of CDs that contained the Copy Control software. It is estimated that XCP was installed on 52 recordings, totaling nearly five million discs³⁶.

3.3.4. Peer-to-Peer Networks

Peer-to-peer (or P2P) computer networks are networks that uses the connectivity between participants, rather than a centralized server, to share data. The earliest P2P network was the Usenet news server system, where participants communicated with one another to distribute news articles over the network. Today, most P2P networks are used to share audio and video files. In combination with the ease of creating MP3s, the P2P networks' digital music has been freely available for everyone to take. It is estimated that annually tens of billions of illegal music files are traded worldwide at an estimated ratio of about 20 illegal downloads for every track sold³⁷.

³² http://www.us-cert.gov/current/archive/2005/11/17/archive.html#xcpdrm (last accessed Sept., 25 2008).

³³ On November 21, 2005.

³⁴ http://news.bbc.co.uk/2/hi/technology/4424254.stm (last accessed Sept., 25 2008).

³⁵ http://www.consumeraffairs.com/news04/2007/01/ftc_sony_bmg.html (last accessed Sept., 25 2008).

³⁶ http://www.nytimes.com/2005/11/22/technology/22sony.html (last accessed Sept., 25 2008).

³⁷ IFPI Digital Music Report 2008 Revolution, Innovation, Responsibility. http://www.ifpi.org/content/section_resources/dmr2008.html (last accessed Sept., 25 2008).

The first P2P case was A&M Records versus Napster, heard in front of the 9th Circuit Court³⁸. Napster, one of the most popular P2P network at the time, was sued for secondary copyright infringement. The court established that Napster was indeed liable for contributory copyright infringement because it "knowingly encourages and assists the infringement of plaintiffs' copyrights". Any defense of Napster, including its claim of fair use, was not acknowledged by the court, and Napster was eventually shut down³⁹. A second P2P case, this time heard before the Supreme Court, was MGM versus Grokster⁴⁰, and decided similarly. Both cases were in contrast with the previous Sony Betamax case, where Sony did not induced its users to infringe, and hence was not held contributory liable for copyright infringement.

4. CHANGES AND CHALLENGES IN THE MUSIC BUSINESS

Digital music has revolutionized the way consumers obtain and pay for their music. As a consequence, the traditional business model of the recording industry based on sales of CDs in retails stores seems to falter. Since the peek in 2000, CD sales have dropped by more than 30%. The music industry is blaming mainly illegal downloads for the decline in revenues. While there is evidence for piracy to contribute to significant losses, other research⁴¹ points to the changing economy in the digital age and the industries' lack of flexibility to adapt to new economy in the digital age. In turn I will discuss these claims starting with a brief description of the traditional role of the record labels.

4.1. Traditional Role of the Record labels

The term "record label" used to refer to the circular label in the center of a vinyl record displaying the manufacturer's and artists name, however the term is nowadays generally understood as to refer to the company that coordinates all the different activities that might be associated with the music business. Such activities might include production (sound recordings and music videos), distribution, promotion, enforcement of copyrights, managing contracts with recording artists, and conducting Artists and Repertoire (A&R), the division of a record label that is responsible for

 $^{^{38}}$ A&M Records v. Napster, Inc., 239 F.3d 1004, 1019 (9th Cir. 2001).

Matt Richtel (July 12, 2001) Napster Is Told to Remain Shut. New York Times, New York, NY (http://www.nytimes.com/2001/07/12/technology/ebusiness/12NAPS.html (last accessed Sept., 25 2008). MGM v. Grokster , 514 U.S. 913 (2005)

⁴¹ Felix Oberholzer-Gee & Koleman Strumpf (2004) The Effect of File Sharing on Record Sales-An Empirical Analysis. Working Paper, Harvard Business School, Cambridge, Massachusetts.

scouting for new talents and manages artists' development. The largest four record labels are Warner Music Group, EMI, Sony BMG, and Universal Music Group, jointly known also as the "Big Four". As of 2005, the Big Four account for 70% of the music sales worldwide and 85% of the music sales in the United States.

Traditionally, it was impossible for an artist not to sign with a record label. All aspects of the music business including recording, manufacturing, sale, and promotion were tied to the record labels. Many artists in the 1950s and 1960s were so desperate to get a recording contract that they ended up signing very unfavorable terms, sometimes giving away all the rights to their music. Especially for unknown artists, the record labels usually exerted complete control over the recordings, including selecting a producer and which songs to be recorded. It was not unheard of, that record labels had songs edited or even song titles changed. This bias in power was mainly due to the financial costs for bringing a record to the market. Artists usually could not afford to rent recording studios, finance production, and organize distribution and promotion. Certainly, the record labels were not all evil, they often managed aspects of the music business the artists could or did not want to care for, such as enforcement of copyright, handle accounting, or organize concert tours.

4.2. Changes in the digital age

The music business in the digital age has changed considerably. First and foremost, the revenues based on CD sales are sharply decreasing, very likely due to the consumer's preference for digital music. And secondly, the recording artists are much less dependent on the music labels, as many aspects of the business can be easily done today without the financial help of the labels. Still in the early 1990, CDs were produced and distributed only through a handful of companies, mainly the Big Four. That all started to change in the mid 1990s with the wide availability of cheap home studio equipment, consumer recording technology, and the Internet. As mentioned above, CD sales dropped by over 30% since 2000. Companies that derived their revenues solely on retail music stores saw their profits dwindle, and as a consequence many went out of business. CDs are now being sold more and more in large department stores such as Walmart and BestBuy. At the same time, legitimate music downloading is ever increasing. Apart from Apple's iTunes, other legitimate music downloading services are appearing with varying business models.

A second important factor, the financial help of the labels to record, produce, distribute and promote music, is less required in the digital age. Traditionally it was the recording industry,

which financed the recordings. Renting a professional music studio including paying for the sound engineer and producer cost at least \$15'000⁴². Most artists simply did not have the necessary money. Today, good recordings can be made with a home computer and affordable software. For example, Apple's GarageBand, a multi-track recording studio software costs only \$79, making it affordable even for artists with little money. The same applies to the manufacturing and distribution. Bringing a record to the market was expensive, as it includes the base manufacturing cost, printing of leaflets, shipping and so on. With digital distribution these cost are close to zero and they do not scale with the number of copies sold. In other words, it does not matter (in terms of distribution cost) whether you sell one or a million copies.

4.3. The Digital Music Market 2007

Digital downloads affect not only the core business of the labels (i.e. selling CDs), but everything else including production, distribution channels, and marketing. The record labels are trying to keep up with these changes, moving towards the new digital platforms to diversify their revenue streams. This is especially true for digital downloads. For example, the number of legal download services increased from about 50 to over 500 between 2003 and 2007. This amounts to an increase of about 600% of licensed tracks that are legally accessible through downloads. Today almost one sixth of all music sales come through digital channels, and further growth is expected if the past developments continuous to hold (percentage of overall recorded music sales: 2% in 2004, 5% in 2005, 11% in 2006 and 15% in 2007). Similarly, the number of formats available per artist increased dramatically between 2003 and 2007. In 2003 the number of formats was around 10, dominated by the CD and the cassette tape. Today, a release is often offered in multiple formats including video downloads, ringtones, and mobile phone tracks. For example, Justin Timberlake's FutureSex/Love Sounds comprised 115 products, of which only 20% were in the CD format.

The move to embrace digital music varies by region. The United States continuous to be the leader in music downloads worldwide, holding about 30% of the market. Single-track downloads amounted to 844 million in 2007, an increase of about 45% compared to 2006. In Europe, the UK is the strongest market, with 77.6 million tracks purchased in 2007, a 47% increase compared to 2006. It is estimated that more than 90% of all UK single sales are now digital. The German

⁴³ Nielsen SoundScan.

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⁴² David Byrne (Dec.,18 2007) David Byrnes Survival Strategies for emerging artists – and megastars. Wired Magazine.

digital market grew also by 38%, with iTunes (42%) and Musicload (32) as major contenders⁴⁴. In France, digital downloads are small (7%), which is not attributed to the rejection of the new technologies, but due to high levels of unauthorized file sharing⁴⁵. As a result, the French president Sarkozy plans to institute a requirement for the Internet Service Providers (ISP) to disconnect illegal file-sharers from their networks.

In Asia, the digital music business has probably the highest growth potential. Japan is the leading the world in regard to digital downloads, of which 91% were made through mobile phones. It is the only country worldwide where digital growth is offsetting the decline in CD sales. In South Korea, already over 60% of the music market is attributed to digital music, certainly supported by the South Koreans' affinity to gadgets and Internet technologies. China has also great growth potential, however, serious market growth is currently hindered by an estimated 99% online piracy rate. Without a change in consumer behavior in regard to illegal downloads and stronger copyright enforcement from the government, it is unlikely however, that this growth potential will be realized in the near future.

4.4. Music Piracy

It is estimated that tens of billions of illegal music files are traded annually worldwide, causing the record industry huge financial losses. A study conducted by the Institute of Policy Innovation (IPI) estimated that the projected losses from illegal downloading to US record companies amount to \$3.7 billion (August 2007). To calculate that number⁴⁶ the IPI assumed that of the 20 billion illegal downloads worldwide 66% represent United States recorded music, and of those 20% would have been purchased legitimately if piracy did not exist. Although based on an academic study⁴⁷, it is doubtful whether 20% of the illegal downloads would have been purchased legitimately. Despite the fact that the losses through music piracy are in the most cases overestimated, it is safe to say that illegal downloads affect CD sales negatively.

Digital music piracy has many forms and uses all the technologies that are available on the market. In addition to the traditional P2P file sharing, distribution via e-mail, instant messenger, and blogs

⁴⁴ According to GfK, market research companies headquartered in Nuremberg, Germany.

⁴⁵ Perhaps French fries should be named freedom fries after all.

The Institute for Policy Innovation (IPI) (2006) The True Cost of Sound Recording Piracy to the U.S. Economy. IPI is a non-profit, non-partisan public policy "think tank" based in Lewisville, Texas.

⁴⁷ Pietz, M. & Waelbroeck, P., (2004) The Effect of Internet Piracy on Music Sales: Cross Section Evidence. Review of Economic Research on Copyright Issues 1 pp 78.

are used. Although decreasing, P2P still represents the largest segment of digital piracy and remains the primary target of industry anti-piracy actions. It is estimated that up to 80% of all ISP broadband traffic is used for P2P file sharing. A study conducted by Jupiter Research showed that 17.6% of Internet users in Europe use P2P networks. Downloads from illegal Internet sites designed to be used by mobile phone users is also increasing in popularity⁴⁸.

4.5. Big Players: Walmart and Others

In the past decade, Walmart, the largest grocery retailer in the United States, has, perhaps somewhat surprisingly, emerged as the nation's biggest record store. It has been estimated that Walmart sells currently one out of every five major-label albums. Not only is Walmart essential for the record labels' revenues, but they also affect whether a given CD will be commercially successful, simply by selling or not selling that CD.

Ironically, Walmart's move to the number one retailer is a consequence of the declining CD market. In 2003 and 2004, two large chain of music stores the Wherehouse and Tower Records filed for bankruptcy because selling CD's was not profitable anymore. Why does Walmart succeed where other companies failed? First of all, Walmart is not a traditional record seller. They carry only about 5'000 CD titles, and only titles they expect to sell in large quantities, while traditional record stores would stock over 60'000 titles, including developing artists or independent labels. Unlike specialty stores, Walmart does not need to have a long-term care for an individual artist or marketing plan, since they are not "real" business partners in the traditional sense. CDs have to compete for shelf space like any other product Walmart sells. Music was never a priority, and the change in popularity of CD titles, makes it an inconvenient commodity to stock.

Secondly, Walmart has nearly 4'000 retail stores in United States, averaging about 130 million shoppers every week (43% of the US population). No record store, or any other store in the United States, can offer such exposure and scale. This allows connecting to a much larger customer base than specialty stores ever could. Thirdly, Walmart does not need to make money with CD sales. In fact, they are willing to loose some money on certain CDs if they are able to lure customers into their store and profit from other purchased items.

But Walmart is also able to negotiate deals, no other company can. Due to its dominant position in

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⁴⁸ Especially popular are these sites in Japan, where flat rate 3G (third generation of mobile phone standards with greater network capacity) contracts are available.

the market, record labels often have no choice than selling their CDs cheaper to Walmart. Even though Walmart sells about 20% of all major-label music, it amounts to only two percent of Walmart's total sales. In other words, if Walmart would stop selling music, the shareholders would not even blink, however it would be catastrophic for the big labels. Walmart's goal is to sell every CD for less than ten dollars. As mentioned above, Walmart does not necessarily need to profit on all CD sales, because hit CDs serve as bait to get customers into their stores, however they certainly do not want to loose money either. Since they want to hold on to their \$10 price limit they "asked" the labels to lower their prices. Apparently it was hinted by Walmart executives that if they would not, Walmart's CD shelf space could be replaced with more lucrative DVDs and video games (Walmart denies these claims).

Gary Severson, Walmart's senior vice president and general merchandise manager in charge of the entertainment section, said in an interview⁴⁹ that "the labels price things based on what they believe they can get – a pricing philosophy a lot of industries have". He pointed out that Walmart has a different philosophy, namely "to price things as cheaply as we possibly can, rather than charge as much as we can get." He further said that they "try to help other people see that" – by "other people" he probably meant the industry executives and by "try to help see that" probably meant he told them that Walmart's CD shelf space could be replaced with more lucrative merchandise. Naturally, the major record labels complain that the low prices mass retailers such as Walmart are demanding are not profitable anymore, but most of them accept the lower prices. The record industry is very likely still making a lucrative profit, as selling trough Walmart would substantially decrease their costs of distribution, marketing, and promotion as well as reducing the retail overhead. Furthermore, lower prices could also translate into higher sales volume.

Since the recording industry still gets a considerable piece of the profit, Walmart started to make exclusive album deals with recording artists directly. By cutting the middleman, namely the record labels, Walmart can easily achieve the desired \$10 price, without cutting into musicians' profits. In June this year, Walmart started selling exclusively a three-disc collection by the popular 1980s band Journey. This album was directly bought from the band without any involvement of a record company. Journey is generally known among industry executives as "heritage act" – a steady summer concert attraction, but selling few records. Even though the band had some revival in

⁴⁹ Warren Cohen (Oct., 12 2004) Wal-Mart Wants \$10 CDs, Biggest U.S. record retailer battles record labels over prices. Rolling Stones Magazine (http://www.rollingstone.com/news/story/6558540/walmart_wants_10_cds) (last accessed Sept., 25 2008).

popularity recently (the song "Don't Stop Believin' " has been licensed for "Family Guy", "Scrubs", and for the last episode of "The Sopranos"), it seems unlikely that Journey would be selling as many albums without the support of Walmart. Indeed, Walmart proved to be an excellent distribution channel as the first-week sales were a 1,600% increase over their last 2005 album. The lesson for Journey: Don't stop believin', especially if you have Walmart as your friend. A similar deal was struck last year with the Eagles⁵⁰. This album was even more successful. According to Nielsen SoundScan it opened at #1 in its first week of release with over 700,000 copies sold. Irving Azoff, chief executive of Front Line Management, a company that manages also the Eagles and Journey, said he is already talking to Walmart about a future exclusive deal for Fleetwood Mac's "Rumors". As Mr. Azoff said in an interview in the New York Times, "Classic rock really works there⁵¹".

Interestingly, the recording artists, often known for their liberal views and opposition to big business, do not seem to care or suffer a noticeable loss of reputation, by making deals with Walmart. To put it mildly, Walmart does not have the best reputation regarding paying good wages, or offering generous health care plans. In addition, Walmart keeps its stores family-friendly and forces recording artists to alter cover art and edit album content if these do not adhere to the Walmart standard. The founder of Walmart envisioned all stores to remain family-friendly, and in the rural areas of the Unites States rock music had the potential to turn away some customers. Jimmy Swaggart, a famous preacher and pioneer of televangelism, led a campaign to ban music from Walmart, because rock music promotes "adultery, alcoholism, drug abuse, necrophilia, bestiality and you name it." As a result, certain albums were temporarily removed from the Walmart shelves. Interestingly, Jimmy Swaggart was as righteous as everybody believed. In a wide publicized sex scandal, he was caught in a Louisiana motel with a prostitute, and after tearfully asking for forgiveness for his transgressions in front of a live television audience, Swaggart was caught three years later with another prostitute.

Today, Walmart has a standard policy of censorship instituted, refusing to sell CDs with cover art or lyrics deemed sexual or dealing with topics such as abortion, homosexuality or Satanism.

Albums that do not meet the standard are either changed⁵² (lyrics, cover art) or not sold⁵³. Of

⁵⁰ The Eagles are an American rock band formed in Los Angeles during the early 1970s.

⁵¹ Robert Levine (June 9, 2008) For Some Music, It Has to Be Walmart and Nowhere Else. New York Times, New York, New York.

⁵² John Cougar Mellencamp was asked to airbrush an angel and a devil out of his album covers.

course, Walmart sees this censorship in a positive light, arguing that changes in lyrics, cover art, and song titles, create more family and child-friendly versions of popular songs, while maintaining the integrity of the musical work and message of the artist. Why movies such as Basic Instinct, the Saw, and Clockwork Orange, all of which contain extreme violence and sexuality, are sold uncensored right next to the family and child-friendly CDs, remains a mystery. Certainly, Walmart has left its impression on the music industry in many ways. "Do we have any Walmart issues?" has become a standard expression, and someone at each label is charged to investigate this question before any new album is released.

5. CURRENT AND EMERGING BUSINESS MODELS

5.1. Old School

5.1.1. The Classic Approach with a modern twist: The Rolling Stones

The Rolling Stones do not need much introduction. The famous rock band formed in London, and after their first success in the United Kingdom became popular in the US during the "British Invasion" in the early 1960s⁵⁴. The Rolling Stones have released 22 studio albums in the UK (24 in the US), eight concert albums (nine in the US) and numerous compilations⁵⁵. Out of these albums they scored 32 UK & US top-10 singles⁵⁶ and had 29 UK & US top-10 albums between 1964 and 2008⁵⁷. It is estimated that they sold more than 200 million albums worldwide⁵⁸, and were ranked number 4 in Rolling Stone magazine's 100 Greatest Artists of All Time in 2004⁵⁹. Since 1989, the band has generated more than \$1.5 billion in gross revenues.

The Rolling Stones have made an astonishing journey. Similar to other rock bands that started in

⁵³ Sheryl Crow refused in 1996 to change the lyrics of a song containing the line "Watch our children as they kill each other with a gun they bought at Walmart discount stores". Walmart does however carry her other albums.

The Rolling Stones Biography. Rock and Roll Hall of Fame and Museum, Inc. http://www.rockhall.com/inductee/the-rolling-stones. (last accessed Sept., 25 2008).

McPherson, Ian (2008) The Rolling Stones' Complete Discography. (http://www.timeisonourside.com/index2.html) (last accessed Sept., 25 2008).

John Paulson (June 29 2005) Deep Cuts: The Essential Stones. (http://www.bullz-eye.com/music/deep_cuts/2005/rolling_stones_essentials.htm) (last accessed Sept., 25 2008)

Rolling Stones Discography and Fact Sheet (2007) (http://www.classic-rock-legends-start-here.com/rolling-stones-discography.html) (last accessed Sept., 25 2008).

Jens Backlund (Nov., 7 1998) The Rolling Stones: Everything is turning to gold. (http://web.abo.fi/~jbacklun/moneymen.htm) (last accessed Sept., 25 2008)

Rolling Stone Magazine (Mar., 24 2004) The Immortals: The First Fifty. (http://www.rollingstone.com/news/story/5939214/the_immortals_the_first_fifty) (last accessed Sept., 25 2008).

the 60s, their first record and managing deals were not very profitable for the band. By the mid-'60s the Stones had already sold ten million singles and five million albums, yet most of the money did not end up in the band members' pockets. Little by little, the Rolling Stones took the reins in their own hands, controlling most every aspect of their business. Today, the Rolling Stones are not unlike a large international corporation. The operative business of the Stones is set up like a modern company, consisting of CEOs (the band members) and different divisions relating to particular aspects their business. As such, they could be selling any product.

Their first record deal was signed with Decca, who had made the mistake earlier of declining to sign the Beatles. Like many rock bands of the time, the Stones had little control over their recordings in their early days at Decca. However, boosted by their first international number-1 hit⁶⁰, and increasing discontent with the producer (which eventually let to a separation during a recording session), their album Satanic Majesties became their first self-produced album. Later in 1970, the band's contracts with Allen Klein (who later also managed the Beatles) and Decca Records ended. To remain independent they decided to form their own record company, the Rolling Stones Records. In March 1971, they released their first record on their newly created label (Sticky Fingers).

Although the Rolling Stones remained popular throughout the late 1970s, their music was certainly not making music history anymore. The punk rock movement had come and gone (1974-1978), replaced already by New Wave that emerged during the late 1970s and early 1980s. With record sales in decline, but still in high demand for live acts, they shifted their focus to concerts as main revenue. In 1981 they mounted the "American Tour 1981", which became the most successful tour of that year. The tour grossed \$50 million in concert ticket sales when the average ticket price was only \$16. It was estimated that the Stones made about \$22 million after expenses. Their last tour, a worldwide concert tour (A Bigger Bang Tour) took place between August 2005 and August 2007. Already by November 2006, the Bigger Bang tour had been declared the highest-grossing tour of all time, earning \$437 million.

The touring side of the business is very professional, including immigration lawyers, real-time budgets, and accountants that are traveling with the group. The touring became the most profitable part of the Stones' business. It is estimated that they made more than \$1 billion since they modernized their touring operation in 1989 with the "Steel Wheels" tour. Apart from revenues

 $^{^{60}}$ "(I Can't Get No) Satisfaction", released as a single in the United States in June 1965.

directly attained from ticket sales, the Stones additionally derive revenues through selling skyboxes, TV deals, and signing corporate sponsors (e.g. Volkswagen, Tommy Hilfiger, Anheuser-Busch, Microsoft, and Sprint), making the touring a very profitable business. Other sources of considerable revenues come from movies⁶¹ and commercials. For example, Microsoft reportedly paid \$4 million for the product rollout of Windows 95 for using the Stones song "Start Me Up". The magazine Fortune estimates that the songwriting team of Jagger/Richards has made \$56 million from music rights alone⁶².

5.1.2. Alternative Approach: The Grateful Dead

A good example of a successful IP strategy in the music business comes from an unlikely source, the Grateful Dead rock group. Although their strategy was very unconventional, and many of their instituted business practices ran against what was considered good business practice, they were highly successful. The group, then known as the Warlocks, emerged from the non-materialistic counterculture of the 1960's in the San Francisco Bay Area. However, they soon became known under the name the Grateful Dead (luckily they did not adopted Garcia's ⁶³ suggestion of naming the group the Mythical Ethical Icicle Tricycle). They quickly developed into the favorite party band for hippie LSD parties, known as acid tests. According to a biography ⁶⁴, even the musicians never went on stage without having taken some LSD, except for the singer and organist, Mr. McKernan, but he drank himself to death at the tender age of 27⁶⁵. It is perhaps not very unusual for a rock group to engage in recreational drug use, however what is more surprising is that the Grateful Dead created a strong and lucrative brand name that continuous to be well and alive, even after the dead of its most famous member, Mr. Garcia who died in 1995. They pioneered some of the most lucrative strategies in the music business. The Grateful Dead did not only make profits from the usual concert tickets and CD sales, but also from various spin-off products. Whether these strategies were deliberately implemented stemming from a crude sense of business or originated from the philosophy of the prevailing counterculture but just happened to be highly successful, remains a hotly debated issue among the Grateful Dead historians.

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⁶¹ For example, the Martin Scorsese directed concert film Shine a Light (2008) in New York City's Beacon Theater in front of a live audience that included Bill and Hillary Clinton.

Andy Serwer, Julia Boorstin, Ann Harrington (09.30.2002) Inside the Rolling Stones Inc. Fortune Magazine. (http://money.cnn.com/magazines/fortune/fortune_archive/2002/09/30/329302/index.htm) (last accessed Sept., 25 2008). Lead guitarist and vocalist, he was viewed by many as the leader of the group.

Dennis Mcnally (2003) A Long Strange Trip: The Inside History of the Grateful Dead. Bantam Dell Pub. Group, New York, New York.

This set a bad precedent for the keyboard players to follow: his immediate successor died when he drove his BMW into a tree, the next died of a heroine overdose.

Why were the Grateful Dead so successful? They never had a No. 1 hit, went years without producing a new album, and played music that is definitely miles away from being mainstream. They succeeded by focusing and controlling the quality of the most important aspects of their band, namely music and live performances. The customers always knew that they would get their money's worth, and by this, they established a long-term personal relationship with their customers, the basis for any good brand. At the same time, they created a sense of community which according to marketing professionals, is the drive behind a product's success. The sense of community among the Deadheads (as the fans are called) was especially strong, perhaps supported by the liberal use of LSD, a drug know to induce spiritual experiences where one feels in contact with a greater cosmic consciousness. According to Dr. Stanislav Grof, a pioneer in researching altered states of consciousness, LSD trips are phenomenologically indistinguishable from similar descriptions in the sacred scriptures of the great religions⁶⁶. It might well be that LSD had its share in creating and maintaining such a community, as ecstasy⁶⁷ became an integral element of the rave culture and other psychedelic/dancefloor-influenced music scenes.

Several business practices led to the success of the band, including allowing the fans to tape their concerts, converting unlicensed merchandise vendors into official licensees, or maintaining fair ticket prices throughout their music career. Allowing the fans to tape their concerts seems like an odd move for a company that sells music. However, the Deadheads were only allowed to trade the tapes with other Deadheads, and were not allowed to sell the tapes for profit. Therefore, the taping of concerts was unlikely to significantly hurt the sales of their records, especially since the group rarely produced new studio albums. What it did however was to significantly increased the value of their brand. Similarly, the Grateful Dead set up a mail-order ticketing service to guarantee fair prices. While similar successful artists charged more than \$200 per ticket, the Grateful Dead never asked for more than \$30. Again, this practice resulted in a short-term financial loss, but by doing so they earned the necessary trust, which further strengthened the Grateful Dead brand.

Apart from the concert tickets sales, merchandise was the other big source of income. The Grateful Dead were among the first rock group to have such a vast merchandising operation. The first products were entirely produced by the fans and sold during the Grateful Dead's live performances.

⁶⁶ Stanislav Grof & Joan Halifax-Grof (1979). Realms of the Human Unconscious (Observations from LSD Research). Souvenir Press (E & A) Ltd, London.

⁶⁷ Street name for the chemical substance Methylenedioxymethamphetamine.

Surely the vendors wanted to make a profit, however, most of them were Deadheads themselves, and had a strong emotional connection to the products they were selling. As the Grateful Dead's fame grew, the merchandise business expanded considerably (an estimated \$250'000 per concert) and the Grateful Dead decided they also wanted to profit from the sale of merchandise. Instead of suing everybody they welcomed many of these vendors on board. Over the years this operation morphed into a solid business. Today, Grateful Dead Merchandising has 22 full-time employees in charge of selling the group's merchandise. Items sold include CDs, T-shirts, and other items usually associated with rock band merchandise, but also unexpected items such as golf gloves (apparently many people from the non-materialistic counterculture are gone mainstream). The fortification of the brand and the loyalty of the fans are going still strong, even 10 years after Mr. Garcia's dead.

5.2. Current Business Models

The business models in the digital age are manifold, some adhering to the old way of doing business, others characterized by innovation and experimentation. David Byrne, probably best known as a founding member of band Talking Heads⁶⁸, outlined the different possibilities in an article that appeared in the Wired Magazine⁶⁹. According to Byrne, there are currently six music distribution models, ranging from one where the artist does almost everything (Do It Yourself model) to the one where the record company does everything. In general, the more the artist is involved the more profit he or she will make.

5.2.1. The 360 Deal

A 360 deal is a business model where producers, marketing people, and managers handle not only the music, but also every other aspect of an artist's career. When done properly, wide market saturation can be achieved using the hardworking machine that is operated by the record label. The artist becomes a brand owned by the label. They often get a lot of money, but in regard to creative decisions he or she has nothing or little to say. Everything, including the music, the concerts, the T-shirts, the underwear, the salad dressing will be marketed by the label, honed towards maximizing profits. Examples include Pussycat Dolls, Korn, Robbie Williams, and Madonna⁷⁰.

⁶⁸ Talking Heads was an American New Wave band from New York City (1974 – 1991). The band comprised David Byrne, Chris Frantz, Tina Weymouth and Jerry Harrison.

David Byrne (2007) David Byrne's Survival Strategies for Emerging Artists — and Megastars. Wired Magazine 16: 01 (12.18.07)

Madonna just recently signed a 360 deal-contract for \$120 million with Live Nation, a company that is mainly involved in organizing and promoted live concerts.

5.2.2. The Standard Distribution Deal

A standard distribution deal is basically the old-school model. The record label bankrolls the recordings and handles the manufacturing, distribution, press, and promotion. The artist receives royalties, but the labels usually retain the copyright to the recordings. Typically, the artist gets an advance from the record label, however, if the records do not sell as expected, the artist might end up with a huge debt – as it happened to Michael Jackson, MC Hammer, and TLC.

5.2.3. The License Deal

The license deal model is similar to the standard distribution deal, with the exception that the artist retains the copyrights and ownership of the recordings. However, the label retains the right to exploit the recordings for a specified period of time, after which it will go back to the artist. This model allows the artist to determine more of the artistic content as compared to the standard distribution deal. On the other hand, because the label borrows the rights to the music only for a limited amount of time, they might invest less to make the release a commercial success.

5.2.4. The Profit-Sharing Deal

The profit sharing deal is a deal where the record label advances some money upfront, but the artist co-finances the production, distribution and marketing. Typically, the artist will come up for the recording expenses, whereas the record label pays for the production, distribution and marketing. Some creative control of the recordings are still maintained by the label, however, the artist retains full ownership of the master. Proceeds from the record sales are shared according to a prearranged rate.

5.2.5. The Manufacturing and Distribution Deal

The manufacturing and distribution deal, as the name suggests, leaves everything to the artist except the manufacturing and distribution of the product. Typically, companies that offer these services offer other services as well, like press releases or marketing. Big record companies traditionally do not make manufacturing and distribution deals as the financial gain derived from these services are less than with other business models (e.g. the 360 deal or the standard distribution deal). With a manufacturing and distribution deal the artists retain absolute creative control but also risks more because they typically have less experience to produce and promote

their record. However, if the record sells successfully the artist will make more money than with any of the previous business models.

5.2.6. The Self-Distribution Model

The Self-distribution model is a business model where everything is done by the artist. The music is self-written, self-played, self-produced, self-marketed, and self-distributed. The music is sold at concerts and/or web sites, promotion is done via MySpace, a popular social networking website offering an interactive network of friends. Like with the manufacturing and distribution deal, the artist has complete creative control, limited only by her/his budget. For emerging artists the budgetary limitations used to be a problem, however, with the ever-decreasing prices of home studio equipment and software, this becomes less and less of an issue. Examples of the self-distribution model include bands like Radiohead⁷¹, Arctic Monkeys⁷², My Chemical Romance⁷³, or the Nine Inch Nails⁷⁴.

5.3. New Channels

The digital music sector is characterized by innovation, experimentation and a diversity of new business models. Traditional record labels are trying to keep up with these changes by moving away from the old way of doing business. Broader ranges of digital products as well as new platforms are being offered to adapt to the new business environment. In the following section I will detail some of the new platforms.

5.3.1. A la cart: Apple's iTunes and Others

Strictly speaking, the à la carte model or single-track downloads is not a new platform. Apple's iTunes, the first download service to offer single-track downloads, was launched in 2001. At the time single-track downloads were in stark contrast with the prevailing distribution modes, where only whole albums could be purchased. This rather simple change has been one of the defining features of the digital music market, significantly increasing the demand for digital downloads. Today, single-track downloads are the most popular digital music format. The IFPI estimates that 1.7 billion online tracks were downloaded in 2007, which present an increase of 53% when

⁷¹ Radiohead are an English alternative rock band that released in October 2007 their seventh album "In Rainbows" as a digital download for which customers chose their own price.

The Arctic Monkeys are a British Indie band from a suburb of Sheffield, UK. Formed in 2002.

 $^{^{73}}$ My Chemical Romance is an American alternative band New York. Formed in 2001.

Nine Inch Nails is an American industrial rock group founded in 1988 by Trent Reznor. In May 2008, Nine Inch Nails released their newest album "The Slip" via their website free of charge.

compared to 2006.

Even though Apple was not the first company to offer digital downloads, they gained quickly a dominant market share. At the time, there were many restrictions on the prevailing download services, like number of copies or time limits in addition to the limited music catalogues. Apple partly removed these copy restrictions, but promised to enforce copyright protection through technological means (DRM). In turn, they were able to negotiate a very large music catalog from the five major record labels at the time, consisting of Sony Music Entertainment and BMG (they would later merge to form Sony BMG), EMI, Universal, and Warner. Another big factor of Apple's success is their MP3 hardware, the iPod and its more recent incarnations⁷⁵. In July of 2007, Apple announced that more than three billion songs have been purchased and downloaded from their iTunes Store⁷⁶, making iTunes the world's most popular online music store. It is estimated that Apple holds about 70% of the US MP3 market. iTunes recently surpassed Amazon and Target to become the third largest music retailer (digital and CD sales combined) in the US⁷⁷ and offers approximately two million individual racks⁷⁸.

On the heel of Apple's success, other big companies entered the online music business. Among others, Amazon entered the download market in 2007 in partnership with all major and many independent labels. Unlike music purchased from many other online music stores, Amazon's MP3s can be played on any digital audio playback device, since it uses the DRM-free MP3-format. Walmart also entered the digital music download market in 2007. Although they first used Microsoft's DRM technology to protect their music files against copying (and at the same time prevented the tracks to be played on Apple's iPods), they switched in April 2008 completely to the MP3 music format. Oddly enough, the store can only be accessed by users of the Windows XP or 2000 operating systems, but not by using Apple's OS X operating system. Most recently, Universal announced in July 2008 a new digital music download service. The service, named Lost Tunes, offers rare music in high-quality MP3 format, dedicated to exclusives, rarities and overlooked classics. The service launched with only 134 albums however, they are available through Lost Tunes only.

⁷⁵ iPod Shuffle, iPod Nano, iPod Touch, and iPhone.

⁷⁶ Press release Apple Inc. (July 31 2007) iTunes Store Tops Three Billion Songs.

⁽http://www.apple.com/pr/library/2007/07/31itunes.html) (last accessed Sept., 25 2008).

see previous footnote.

⁷⁸ Press release Apple Inc. (Oct. 17 2007) iTunes Plus Now Offers Over Two Million Tracks at Just 99 Cents. (http://www.apple.com/pr/library/2007/10/17itunes.html) (last accessed Sept., 25 2008)

5.3.2. Subscription Models

In contrast to the à la cart model, various companies decided to implement a subscription model. Typically, consumers purchase a subscription fee, and in turn are allowed to listen and/or download music freely. The first subscription-based service was launched by eMusic in 2000. eMusic offers music and audio books downloads in a high-quality MP3 format without DRM. Another example of a subscription-based model is Napster. Once known as the online music file sharing service that allowed people to easily share MP3s, leading to massive copyright violations, was bought by a publicly traded adult entertainment site based in Spain⁷⁹ and converted into a legal subscription-based download service. In September of 2008, Napster was purchased by US electronics retailer Best Buy for \$121 million⁸⁰ including Napster's approx. 700'000 subscribers. Other subscription models are available through broadband subscriptions that deliver TV and other services. For example, Sony BMG, Warner, and EMI announced⁸¹ that they had concluded a deal with a Danish telecommunications company that will open their digital catalogues to broadband and mobile customers as part of their monthly contract. Customers would pay an additional fee on top of their usual package to get access to the music catalogue of Sony BMG, Warner, and EMI.

5.3.3. Mobile Music

Mobile music is music that can be downloaded directly to mobile phones. Although many modern phones have the capability to import and play audio files, the largest profits are made by providing downloads wirelessly from a content provider. The most popular mobile music format remains the mastertones, excerpts from an original sound recording that play when the phone rings. However, full track downloads to mobile phones are also increasing. In 2007, full track downloads accounted for 12% of all digital sales compared to 6% in 2006. This suggests that more and more consumer use their phones as primary digital audio playback device.

In the United States, mobile music downloads increased more than fourfold between 2006 and 2007. In the UK, mobile music is also very popular. In comparison with Europe, the UK market

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⁷⁹ The Private Media Group. CNET News.com (Sept. 12 2002) Porno company offers to buy Napster. (http://news.cnet.com/2100-1023-957784.html) (last accessed Sept., 25 2008).

Joseph Weisenthal (15 Sept. 2008) The Next Chapter: Best Buy To Acquire Napster For \$121 Million. (http://www.paidcontent.org/entry/419-breaking-best-buy-to-acquire-napster-for-121-million/) (last accessed Sept., 25 2008)

In Jonathan Richards (April 1, 2008) Warner Music seeks to offer 'all you can eat' digital music. Times Online Broad band (http://technology.timesonline.co.uk/tol/news/tech_and_web/article3661348.ece) (last accessed Sept., 25 2008).

has the most music phones (43% of mobile subscribers) and the highest percentages of consumers using their phones to play music. The BPI, formerly known as British Phonographic Industry, estimates that 10-12% of all chart sales are made through mobile channels in the UK. However, the most advanced mobile music market is Japan with full track mobile downloads making a whopping 40% of all digital music sales. The mobile phone is the preferred channel for entertainment and music in Japan among young Japanese. Accordingly, mobile phone penetration is widespread, with over 100 million mobile subscribers and 70 million 3G users. The success of the Japanese mobile music market is attributed to the fact that the mobile music retail services are jointly owned by record companies.

5.3.4. Social Networks and Other Self-Distribution Models

In the following section, I will limit myself mainly to the MySpace⁸² social network, as it has the most relevance in connection to the topics discussed in this paper. However, many features discussed are also applicable to other social networks.

The core idea of MySpace, or any other social networks for that matter, is to facilitate communication and information sharing among its members, either by e-mail or instant messages. In addition, MySpace allows the user to publish blogs, photos, music, and videos. The process of becoming a MySpace member simply entails to join MySpace, which is free of charge. Once a member, one can invite friends to join MySpace or search the MySpace pages for friends who are already members. All the people in ones friend's Friend Space become part of ones own friend network, making it easy to connect to numerous new people. Given that MySpace counted 117.6 million people in June 2008⁸³, the number of potential friends is large, very large by any account.

The exact reason for the phenomenal success of MySpace might never be known, but there is at least one identifiable reason why this might be so. Some of the first people to use MySpace were musicians and bands. Many bands used MySpace to establish a free online presence, including free downloads and posts of concert dates. The possibility to find music related information as well as to download music attracted more musicians and music lovers. Even well-known bands, such as Nine Inch Nails, REM, and the Black Eyed Peas have released tracks on MySpace even before the official release in stores.

⁸² http://www.myspace.com/ (last accessed Sept., 25 2008).

comScore Press Release (Aug., 12 2008) Social networking explodes worldwide as sites increase their focus on cultural relevance. (http://www.comscore.com/press/release.asp?press=2396) (last accessed Sept., 25 2008).

Today, nearly 5 million bands have profiles. For unknown artists MySpace brings a lot of advantages. They are easily able to access to potential fans outside their geographic region, even without having to give a single concert. The MySpace Music site also includes a built-in music player, user ratings and reviews, featured bands, show listings by location, and music videos, giving an unsigned band the most desired resource: exposure. Bands like Arctic Monkeys and My Chemical Romance ignited their careers with a MySpace page. Virtually unknown, they developed huge followings and received record label attention via MySpace. Simply by allowing music downloads through their MySpace page the Arctic Monkeys landed a No. 1 hit on the UK Music Chart even before their debut album was available in the stores. Interestingly both bands have now signed with a record label⁸⁴, but their MySpace fame certainly helped to negotiate more favorable contract terms. In April 2008⁸⁵ MySpace expanded the service of MySpace Music to include free streaming of music, unprotected MP3 downloads (from three of the four top labels), ringtones, merchandise, and tickets. The goal is, according to MySpace CEO and founder Chris DeWolfe, to "make MySpace Music a one-stop shop for everything related to music". With its 117.6 million users, combined with the 30 million active listeners of MySpace music and the 5 million bands with profiles, mySpace creates a an impressive potential to bite a serious chunk out of the digital download market.

Another interesting service is available trough a company named TuneCore ⁸⁶. TuneCore offers everything an aspiring artists needs in order to produce, promote and sell their music. Most and foremost they arrange the digital distribution of their clients' music through many of the major digital on-line stores (e.g. iTunes, Rhapsody, Amazon, eMusic, Napster, etc.). The advantage of using TuneCore is certainly its price, but also the ease of reaching customers using the major distribution channels. For a small charge, consisting of a song fee, a fee per digital distribution channel, and a yearly maintenance fee, the artist is able to make his or her song available on the major digital distribution channels. For example, if you have a ten-song album, and you intend to sell it on iTunes United States, iTunes Japan, as well as on Rhapsody, the costs will be a \$0.99 song fee (\$9.90 for ten songs), a \$0.99 digital distribution channel fee (\$2.97for iTunes United

⁸⁴ The Chemical Romance signed Reprise Records (founded in 1960 by Frank Sinatra, owned by Warner Music Group, and operated through Warner Bros. Records), the Arctic Monkeys with Domino Recording Company (Domino Records), an independent record label based in London.

⁸⁵ Greg Sandoval (April 3 2008) As expected, MySpace unveils new music service. Cnet.com. (www.cnet.com/8301-10784 3-9910344-7.html) (last accessed Sept., 25 2008)

http://www.tunecore.com/ (last accessed Sept., 25 2008).

States, iTunes Japan, and Rhapsody), and a yearly maintenance fee of \$19.98, amounting a an extraordinary price of only \$32.85 for a ten-song album. They offer also other services like making CDs using the artists' uploaded music, cover art, title, and liner notes. The cost of a physical CD (including jewel cases with cover art and shrink wrap) is only \$1. Further services include professional mixing, tour management services, copyright-your-music service, T-shirts, posters, and stickers.

6. SUMMARY AND CONCLUSIONS

As we have seen in the previous chapters, IP strategies in the music industry are complex. There are at least four interacting factors that result in a highly dynamic environment where IP strategies are changing constantly. The four factors are the recording industry, the consumers, the new emerging technologies, and the law. Looking at IP strategies from a historical perspective reveals that many issues did not arise only recently, but are phenomenon that trace back to the first sound recording devices.

Typically, new technologies appear on the market that allow the exploitation of works, which strictly speaking should be copyright protected, but do not qualify for statutory protection because the new format is not explicitly covered by the law. The right holders usually file a lawsuit only to find out that the device or format is not covered in the statues. Eventually new legislation is passed that allows the work to be protected. Of course, by time the new legislation is signed into law, newer technologies are already on the market, initiating a new cycle of evolution.

A very good example of such a cycle is the development of the first digital recording device, the DAT. The DAT was available in Japan and Europe, but Sony delayed introducing the DAT into the US in the face of opposition from the recording industry. Sony felt they needed the recording industry's cooperation to induce the consumers to again embrace a new music format, as the consumers just changed from vinyl to CDs thereby spending a small fortune. Furthermore, Sony feared a potential lawsuit for contributory copyright infringement. Whether such a lawsuit would have had merit in front of the US courts was not clear, however, a delay to introduce the DAT into the US market would have been very expensive. Finally, the recording industry and Sony reached a compromise that allowed Sony to sell the DAT recorders in the United States under the condition that they include a copy protection into their devices. The recording industry independently

pursued legislation (AHRA) requiring royalties on digital audio recording devices and media, which eventually passed congress and was signed into law. Unfortunately, the AHRA's statutory definitions of "digital audio recording device" and "digital audio recording media" was defined with only the DAT in mind, the copying via personal computers was not covered under the Act. Later, in the Rio case, it was further established that MP3 players are also excluded. It is ironic that the AHRA was drafted to prevent digital recording, but due to unforeseen technological advances, the formulation of the law text did not allow to extend the protection to the new emerging digital formats, and the AHRA became essentially old law that was inapplicable to the intended purpose even before it was signed into law, giving rise to a new cycle of the arms race between the device makers, consumers and the content industry. Nevertheless, the AHRA is an important piece of legislation, establishing a number of important precedents in US copyright law (the first technology mandate to use SCMS, the first anti-circumvention provisions, the first government-imposed royalties).

The use of digital music has revolutionized the music business. The traditional business model based on sales of CDs in retails stores is faltering as CD sales have dropped by more than 30% since 2000. The music industry is blaming mainly illegal downloads for the decline in revenues, however independent research points to the changing economy in the digital age and the industries' lack of flexibility to adapt to the new economy. That is not to say that online music piracy is not an issue, estimated losses from illegal downloading to US record companies amount to \$3.7 billion (August 2007). However, the main reason for the decline in CD sales is that consumers prefer digital music. Another reason is that in the past the recording, manufacturing, sale, and promotion of music were prohibitively expensive, impossible to finance without the backing of the record labels. Today, producing and even promoting a record costs next to nothing. The ever-decreasing prices of home studio equipment and the free promotion via MySpace, offers a cheap and viable option to the similar services the record labels are offering. As might be expected, the traditional record labels are trying to keep up with these changes by moving away from the old way of doing business by offering broad ranges of digital products and platforms.

Where might the music business be heading in the future? Extrapolating from the current developments, the music industry will continue to expand their digital products and platforms. Whereas selling CDs was their main revenue in the past, downloads, ring tones, mobile music, Internet radio, and personalized subscription radio will become the bread and butter of the music industry in the future. Another possible direction is that downloads will be freely available, as

consumers will not change their behavior of downloading files without paying. However, the royalty payments will be financed through a flat rate consumers pay anyway to the ISP while accessing the networks. A similar possibility is to also provide the content for free, however in this model the royalties are paid entirely through advertising.

Regarding the future of the traditional record labels, I predict that they will shift their core business towards becoming venture capitalists where they employ business models similar to the model described under the heading "The Managing and Distribution Deal". They will still do what they have done in the past, however this time around not as an employer, but as a business partner offering such services.

In terms of the future consumer behavior, I predict that the consumer will rely increasingly on having wireless access to the vast information through the Internet. Already today, consumers expect to have access to what ever they want, whenever they want. Physical downloads will eventually be replaced by streaming any content, including music, video, documents and software. Of course until widespread high speed Internet access for devices of all shapes and sizes becomes common, there is still a lot of money to be made by selling trough conventional channels.