The Impact of New Technologies and the Internet on the Music Industry, 1997-2001

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Glossary

A&R:	Artist and Repertoire. The 'talent scouts' of the record companies.
AARC:	Alliance of Artists and Recording Companies.
ADSL:	Asymmetric Digital Subscriber's Line.
AHRA:	Audio Home Recording Act (1992).
AOL:	America Online. The largest ISP in the US.
Archived:	Files which are saved and stored on a server, where they are made available upon request.
ARPA:	Advanced Research Projects Association. Military research project which initiated Internet technology
ATM:	Asynchronous Transfer Mode. Communications system used by cash machines.
Bandwidth:	A measure of a network's capacity for data transfer per unit time (measured in bps [bits per second]).
BBS:	Bulletin Board System. A collaborative form of text-based group communication.
Caching:	A copying and storage mechanism which speeds up use of the Internet.
CD:	Compact Disc
CD-R:	Recordable Compact Disc
CEMA:	Consumer Electronics Manufacturing Association
CMS:	Copyright Management Systems
Compression:	Data reduction performed on a file using a mathematical algorithm, usually within a software package.
DAT:	Digital Audio Tape
DCC:	Digital Compact Cassette
DMCA:	Digital Millennium Copyright Act (1998).
Downloading:	The process of requesting and receiving a copy of a file from a remote computer to a local hard drive.
DRM:	Digital Rights Management. Technology to enforce usage rules on content.

DSL:	Digital Subscriber's Line. Means of high speed data transfer over telecom networks.
EFF:	Electronic Frontier Foundation
Encoding:	The process of converting digital data to a predetermined file format.
Encryption:	The process of scrambling data and restricting the ability to unscramble it.
FSF:	Free Software Foundation
FTP:	File Transfer Protocol. Protocol for sending and receiving data between home computer and remote server.
GII:	Global Information Infrastructure. A term to describe the communications network around the planet.
IFPI:	International Federation of the Phonographic Industry
IP:	Intellectual Property
IPR:	Intellectual Property Rights, which include copyright, patent, trademark, and design rights.
IRC:	Internet Relay Chat. Text-based networked chat system.
ISDN:	Integrated Services Digital Network. Standard for digital transmission over ordinary telephone copper wire.
ISP:	Internet Service Provider
IT:	Information Technology
ITI:	Information Technology Industry
ITV:	Interactive Television
JANet:	Joint Academic Network
kbps:	Kilobits Per Second. Data transfer rate.
LAN:	Local Area Network
Mbit:	Megabit
MCPS:	Mechanical Copyright Protection Society
MD:	Mini Disc
MIDI:	Musical Instrument Digital Interface. Protocol for sending and receiving musical note data between keyboards and sequencers.
MIT:	Massachusetts Institute of Technology
MPAA:	Motion Picture Association of America
MPEG:	Motion Picture Expert Group
MP3:	MPEG 1 Layer 3. The infamous and ubiquitous audio file format.

MS: Microsoft

MSP: Music Service Provider

NSFNet: National Science Foundation Network

Overdubbing: The recording of different instruments on a single piece of music at separate times, as if laying one performance on top of another so that they sound as if they were played at the same time

Playlist: A list of each track played by a DJ on a radio station.

P2P: Peer to Peer. Decentralized network technology.

PC: Personal Computer

PD: Portable Device

PPL: Phonographic Performance Ltd.

PRS: Performing Right Society

RIAA: Recording Industry Association of America

Ripping: The process of extracting data from an audio CD and encoding it to a predetermined file format.

SCMS: Serial Copy Management System. Restrictive mechanism implemented into DAT machines.

SDMI: Secure Digital Music Initiative

Streaming: The process of sending audio visual data from a remote computer to a home computer, which is played back continually as it is received at the user end.

TRIPS: Trade Related aspects of Intellectual Property

UMTS: Universal Mobile Telephone Services

Uploading: The process of sending a copy of a file from a local hard drive to a remote computer.

VCR: Video Cassette Recorder

VOD: Video On Demand

Watermarking: The addition of information to a file which permits identification at a later date.

WIPO: World Intellectual Property Organization

WWW: World Wide Web

Abstract

This dissertation analyses the controversial issues surrounding the rise of the online music space at the turn of the millennium.[1] The consumer-led online music revolution rode on the back of a new technology that enhanced connectivity but disregarded notions of copyright and intellectual property. This enabled artists to create, promote and disseminate their own music, but also allowed end users to share unauthorized music files, to the financial detriment of the music industry. It examines the major music corporations' attempts to halt what they considered to be undesirable behaviour, as well as the struggle over control of copyrights, and assesses the likely path of the development of viable online music services. The findings suggest that the music industry is capable of success within the online environment as long as it heeds the lessons of the consumer-driven market. Artists and end users have been empowered by the technology, and niches have emerged for new intermediaries to service new demands. The significance of this study is that it contextualizes and analyses the turmoil and flux which this period experienced; it identifies the underlying issues, and points the direction for the future of the industry. This has been an important juncture in the history of the recording industry, and the new network technology has engendered considerable changes in the relationship between the major corporations and the public. While existing studies of the music industry and copyright law have informed the work, this dissertation provides original research into how the online music space relates to and affects the major label- dominated offline music industry, weaving together the various strands in a multi-disciplinary approach.

Introduction

This dissertation presents an analytical critique of the ways in which the increasingly widespread consumer use of the Internet has affected the music industry. The rise of the Internet, and the popular use of the networked computer as a media device, changed the dynamic that had characterized the relationship between the major corporations and the public. Although the power to influence the market had traditionally rested with the major corporations, consumers became empowered through a technology which facilitated connectivity; the record companies lost control over the copying and distribution of their recordings in the online environment, while end users discovered new ways of consuming and interacting with music, and have increasingly been able to influence the criteria for successful online services.[1]

The research explores the tensions and conflicts which emerged and came to occupy centre stage as these two opposing pressures battled for supremacy. On the one hand, the major corporations exert a continual pressure towards ever-tightening oligopoly in a bid to dominate the market for sound recordings, to influence patterns of consumption and generate maximum revenue streams. This manifests itself through corporate mergers and acquisitions, and is a symptom of the tendency to increasingly centralize their operations while extending their reach globally. They operate a business based strictly on the centralized production and distribution of content, which is enforced by copyright. Recent developments within copyright reform have seen expansion of both the length and breadth of copyright, resulting in heightened control over the ways that their recordings are disseminated, as well as the ways that consumers are permitted to use and access those recordings.

On the other hand, the Internet user base exchanged information on a non-monetary, decentralized basis. A self-regulating culture had developed over the last 10 years which was proud to have set itself apart from the pressures of capitalism. It had defined its own rules which were generally inconsistent with the logic of the marketplace, and many users were defiant of any attempts to coerce their culture into submission to corporate capital. The ethos of free exchange of information came under attack as the corporations realized that users were copying and sharing copyrighted recordings, and the Internet users struggled to retain the freedoms they

had come to enjoy and expect within cyberspace. Therefore the stage was set as unauthorized copying and distribution became rife on a global scale, while the record companies responded as best they could to regain their footing as sole legitimate distributors of their own sound recordings.

On the whole, the research looks to the US unless otherwise specified, as this is generally considered the international centre of the music industry; it is the largest territory in industry terms. Internet use and infrastructure development are most advanced there, as are e-commerce and digitally-explicit legal reform, and most of the relevant events emerged and were resolved there.

Some of the debates which required clarification were: What are the threats and opportunities presented to the music industry by the development of an independent online music environment? What does the music industry hope to achieve by its litigation, and how does it intend to fit into the online music space? What are the implications of the corporations' investment in the Internet for the direction in which the online music space will develop? Can the music industry succeed in enforcing a secure delivery system since MP3 has become so popular? Is copyright still relevant in the online music world, and how does this relate to the spread of information and intellectual property? How will the interests of the major corporations and the online music users be resolved, since each party has adopted such extreme opposing positions? How has the Internet enabled new modes of production, dissemination and consumption, and what will the future hold for the online music space? The findings suggest that the music industry could benefit from a great many opportunities within the networked environment, but that essentially it must follow consumer demand rather than attempt to shape it. The control of technology which limits the user's ability to copy has traditionally been the most effective means of enforcing compliance with copyright, and this may continue to be the case in the network space, despite the intrinsic contradiction between the concept of intellectual property and the characteristics of networked information. However, the corporations' market dominance is pitted against the consumer's freedom of choice in a competitive market, and eventually this may determine the balance between the interests of the corporations and the public, more than technology or the law.

The research was undertaken between late 1997 and mid 2001. The bulk of the work was written up between late 1998 and late 2000, and these are the temporal

parameters which define the research. Accordingly, some of the latest developments during 2001 were not included (such as the final fate of Napster), although other events during this time were included as they fell easily into the existing body of work. This study of the online music space commenced before the 'MP3 revolution' really took off. As MP3 use grew rapidly, and subsequent effects took place, it seemed almost impossible to make sense of the continually changing pattern of events. The dissertation attempts to pull all those developments into some focus, in spite of the limited degree of hindsight.

The relevant literature has been taken from a diverse range of sources: academic essays, journalistic articles, Web sites and industry reports, and almost all sources have dealt with one or other small part of the subject area, rather than incorporating the broader overview that this dissertation provides. Those academics whose work relates to this study have examined music industry practice and structure (Negus, Burnett, Garofalo), and history (Gellatt, Lowe, Houlton), as well as music and copyright (Frith *et al*). Several US law experts have written quite extensively on the application of copyright in the digital realm, mostly pertaining to the maintenance of a fair balance between the interests of producers and consumers of intellectual property, as well as the practical and ethical considerations of such an endeavour (Boyle, Cohen, Dyson, Lessig, Litman). Other academics take a more sociological perspective of Internet culture and the political forces that influence it (Barbrook & HRC). There has been some academic work which mirrored the course of this research in some way, through analysis of the relationship between the music industry and the Internet (Brindley, Garofalo, Kretschmer, Sperlich), and these have provided some useful information and points of reference. However, they did not actually shape this research substantially, as they became available towards the end of the research period. The journalistic articles consulted usually dealt with specific issues relating to the development of the online music space and the music industry. While some provided a daily news angle on the proceedings (*Wired*), others gave a more inquisitive report into the developments (*Atlantic Monthly*), and still others aired personal opinions (Barlow, Chuck D, Griffin, to name only a few). Legal case files were a valuable source for understanding the issues surrounding copyright law and the litigation which marked this period (*Diamond, Napster*), and government and industry reports also provided an angle on various aspects of technological development and usage patterns. Finally, a countless number of Web sites were

visited and digested in an attempt to comprehend the different views and interests of all the parties involved in the development of the online music space. It has therefore been a continual struggle to separate fact from opinion, vision from rhetoric, and industry statistics from propaganda in an attempt to retain some objectivity, ascertain some truth, and play a mediating role in expounding the arguments on both sides.

Chapter One examines the structure and the working practices of the music industry, and outlines the central role of copyright within the industry's business model. This summarizes the basic constituent parts that make up a record company, and their respective functions in relation to the production, promotion, distribution and consumption of recordings. A brief history of the recording industry places current day working practices and industry structures in context, and the position of the record companies are then defined within the larger multimedia and hardware industries in the global marketplace. The chapter examines the ways in which, through control of the media channels, the corporations are able to stimulate musical markets and influence patterns of consumption. A brief history and theory of copyright sheds light on the significance which copyright plays within the industry's business model.

Chapter Two explores the effects that the digitization of audio in the 1980s had on the music industry. The ability to transfer digital audio from one sound carrier to another without degradation threatened the industry's business model, and the industry responded with a legislative strategy designed to implement technology which would fix digital data to its sound carrier. MP3 file exchange once again raised industry concerns, and also foreshadowed a 'soft' piracy epidemic that threatened to surpass the problem of hard carrier piracy. The legal concept of fair use is introduced as a means to demonstrate the way that private and public interests are balanced within copyright, and clarifies those unauthorized uses which are considered either legal or illegal. This informs more recent definitions of piracy which include online file exchange.

Chapter Three probes the potential market success or failure of new technologies for secure digital delivery. The ethics and values of the Internet user base are examined as a means of contextualizing current attitudes toward intellectual property and file sharing, and the likelihood of users complying with the demands of the industry is evaluated. The chapter investigates the industry's strategy to combat online piracy, taking in two legal case studies (*RIAA vs. Diamond Multimedia*, and *A*

& M Records et al vs. Napster) as illustrations of how the law attempts to balance the competing interests of corporations, the public, and small businesses. It also examines the initial attempts to develop systems for the secure delivery of online audio.[2] It then identifies the strategies pursued by the major corporations to maintain their dominance in the online market, and considers the ways in which digital rights management systems could be used to regain control over consumer usage patterns, discussing the implications of such a strategy for the balance of interests.

Chapter Four analyses the ways that existing practices are being enhanced, and new practices are emerging within the framework of the production, promotion, distribution and consumption of music. The emphasis is on independent musicians, intermediaries and developers since they, compared with the major labels, have thus far led creativity in these fields. It explores the capacity for new technology to enhance or re-invent music production, and includes a brief history of technological developments in order to contextualize advances in home computer and network technology. It looks at how independent artists can benefit from networked communities for the promotion of their work, with MP3.com as a case study by way of illustration. It then elucidates the potential that digital distribution holds for both the major and independent sectors of the music industry. The changes in patterns of consumption are also scrutinized; CD mail order, digital downloads and streaming on demand services all provide added value in some way over traditional modes of consumption.

Chapter Five explores the ways that independent artists have been harnessing the power of the Web for the promotion and dissemination of their own music. It clarifies the negative aspects of contracting to a major record company, and details the reasons why many artists prefer to remain independent. The chapter is constructed around two case studies – one of a lesser-known artist on MP3.com, Ripwrap, and the other of a well-known established artist, David Bowie. These two specific studies are also contextualized within their appropriate peer groups: the MP3.com artist community on one hand, and the independent 'stars' on the Web on the other. The chapter assesses the implications of being an independent artist, regardless of status, and how this relates to the artist's relationship with other new intermediaries in place of the major labels.

Chapter Six examines the future development of network infrastructure and electronic devices in order to speculate on the probable path of technological

development and the possible services and usage patterns that will develop as a result. The Internet is likely to be superseded by higher bandwidth networks, and instant access to music may initiate a shift within the music industry towards a broadcast-based model. Interactive services could provide new ways of discovering and consuming music, and music is likely to become more a service than a product. The implications of such changes within the industry are considered.

Chapter Seven summarizes issues explored throughout the dissertation into a concise and integrated whole.

Although the dissertation probes many diverse topics which bind the research together – such as the music industry, global capitalism, online culture and subculture, copyright, and DIY – certain boundaries had to be drawn which precluded more in-depth examinations of other equally important topics. Copyright is an enormous subject, and this study only touches on the issues surrounding fair use and the balance in copyright law. On the subject of piracy, the emphasis is firmly placed on 'soft' piracy, rather than hard carrier piracy which in fact currently poses a larger financial threat to the industry. The intention is not to blow online piracy out of proportion; it is simply the case that this study is more concerned with that aspect of music use. Another example is the role that offline independent labels play within the music industry. The research has focused mainly on major record companies, and looked at the ways that online independent intermediaries may benefit from network technology. Inevitably such a study cannot be a thorough and complete analysis of events; certain events were included (such as the Napster trial) while others were omitted (such as the MP3.com trial). However, those issues which are of most relevance and importance to the topic of research have been included and analysed.

Chapter One: The Workings of the Recording Industry and its Position Within the Global Market

The following chapter provides a basic understanding of the structure and the various working practices of the recording industry, and how it operates within the global market. The chapter therefore commences by outlining the working practices of record companies engaged in the process of production, promotion, distribution and consumption of recorded music. The modern recording industry is then placed within a historical context by a brief account of the development of the phonographic industry since the late 1880s. The major record companies are contextualized within their larger corporate environment in order to examine the degree of dominance and influence that they have over the market, and the consequent effects on the production, distribution and consumption of recorded music. Finally, the system of copyright is examined in order to ascertain its crucial position within the function of the industry.

The process of bringing music to the market is complex and capital-intensive, and is outlined below in order to give some insight into the processes involved. This is then referred to later as a point of comparison for the changing nature of these processes under the influence of new technologies.

Production of Music

The creation of musical works is a culmination of several different processes which usually involve many people, and often takes place over a long period of time.

While artists think of themselves as negotiating with record companies in order to bring their work before a market, record companies think of themselves as hiring artists to produce music for them, and this process is known as acquiring an artist. This is overseen by Artist & Repertoire (A&R) staff, who are continually engaged in seeking new artists and material.[1] Having identified an artist that they believe will be eminently marketable, A&R staff play a mediating role in negotiations between the artist and the record company with a view to signing a mutually binding contract between the artist and the company.

The basis of any recording contract is that the company loans the artist a specified amount of money to pay for living expenses, studio time and any other expenses incurred in the production of their music (this could be in the region of £200,000), in return for which the artist must produce a certain number of recordings in a fixed period of time. The company then recoups the advance out of royalties generated from sales of the artist's recordings. After the advance has been fully recouped, a percentage of any royalties from subsequent phonogram sales will go to the relevant performers.[2]

Having signed a contract with a record company the artist is in a position to commence recording. While the artist must come up with the raw creativity, the record company provides him or her with creative space and access to facilities in order to encourage the creative process, nurturing the production and development of ideas that can be turned into marketable commodities. Such facilities typically include:

1. Recording studio: this is the environment where the artist's work will be recorded. It is also an environment dedicated to the creation of recorded music, staffed by experienced specialist personnel whose job is to assist in the realization of ideas through the operation of recording equipment and technology. As such it is an ideal location for fostering creative ideas.

2. Equipment: various extra pieces of equipment or technology may be required to allow the realization of a particular sound or idea.

3. Personnel: session musicians of a high calibre may be hired to play required instruments.

4. Producer: he or she is responsible for bringing the creative product into tangible form (a recording).[3] This involves helping and guiding the artist to maximize the potential of his or her ideas.

The production of music usually involves a long and tiring process of writing and recording, usually centred around the studio, with different stages of recording, mixing and post-production involved to produce the end result of a finished set of

master recordings. Production is a particularly expensive element of the overall process involved in selling records. This is partially due to the length of time it takes to produce recorded material, resulting in huge bills incurred from hiring all of the above for prolonged periods of time. Once the production of the material has been completed, the album must be compiled and manufactured, and artwork must be produced for the album packaging.

Marketing

Ultimately, the job of the marketing department is to sell the record to as wide an audience as possible. This is achieved by creating a visual image for the artist (for example, through clothing and make-up, photo shoots, creation of short videos for singles) and a subsequent publicity campaign which involves placing the artist in the news and music press, on television and radio, billboards, shops and colleges.[4] Successful marketing manipulates the media to create a desirable image, a lifestyle, and a point of identification for consumers.[5]

Audiences for a particular product are conceived of as 'markets' which must be carefully constructed and maintained.[6] This involves monitoring and researching the purchase and use of recordings, and creating demographics about particular market segments – thus enabling effective promotion of a product geared towards the relevant market sector. The most important method of artist development is through gaining extensive play on national radio: this is vital in order to disseminate music to the public. Record companies and radio stations enjoy a symbiotic relationship whereby the record company can promote their products to a captive audience, and the radio stations obtain a cheap and reliable source of programming material.[7] It is extremely difficult to get a song added to the playlist[8] – for example, most popular music stations add only three or four new records to their playlist each week.[9]

Manufacture and Distribution

Once the album has been compiled it is despatched to a specialist industrial plant for manufacture, where thousands of copies of CDs and tapes are pressed and produced. The artwork is also reproduced here, and the final products are collated then transported to, and stored at, the distribution company's warehouses. The

distribution company then organize the sale and delivery of CDs to retail outlets throughout the country. Distribution is a lucrative process for the major companies; all the major record companies control their own massive distribution companies, and as such are able to enjoy revenue through wholesaling enormous amounts of product to retail outlets.[10] Many of the smaller independent labels also distribute their recordings through the major distributors.

Consumption

Once the CDs have been sold and transported to the retail outlets, they are displayed in the shops, ready for consumers to evaluate, select and purchase. Once purchase has occurred, the process of successfully bringing a work to the market is complete.

The preceding section has broadly outlined the way that music is developed from ideas into recorded works, and how marketing and promotion of a recording attempts to penetrate public consciousness through the media networks. This strives to build an audience for the phonograms, which are duplicated and distributed to retail outlets where the public is able to access them. It is necessary here to place the modern recording industry within an historical context in order to deduce how developments in the industry shaped current practices.

A Brief History of the Development of the Recording Industry

In 1877 Thomas Edison first publicly demonstrated his new invention, the cylindrical phonograph, which displayed the ability to record and reproduce sound. In 1888 the North American Phonograph Company was licensed to market both Edison's phonograph, and the Bell Telephone Company's 'cylindrical graphophone' as dictating devices. Although this intended use proved unpopular, the machines became successful as machine-operated entertainment devices at fairs and medicine shows on the Vaudeville circuit, for which 'entertaining' cylinders were required.[11] While an industry began to form around making these cylinders, Emile Berliner had already developed the flat disk gramophone which played on a turntable. This is generally considered to be *the* technological development which led to the modern recording industry.[12] Berliner foresaw the future use of the gramophone as a home entertainment medium and it was commercially released by his own United States

Gramophone Company in 1895. The manufacturers of the two different formats entered a period of intense competition against each other, but the flat disk gramophone slowly proved to be the more popular format. In 1912 Edison introduced the technically superior diamond disk phonograph, marking the death of the cylindrical phonograph as a commercial technology.[13] Negus notes that the disk gramophone was better suited to capitalist modes of production and distribution due to the fact that the manufacture of disks, unlike cylinders, required specialized pressing plants. With disks as the surviving format, therefore, it was difficult to infringe intellectual property rights by making pirate copies.[14]

The competition in the market place continued between makers of gramophones, but the British Gramophone Company and the American Victor Talking Machine Company agreed to pool patents and work together, enabling them to collectively dominate the American music industry for over half a century.[15] A map of the world was divided into two territories and each company was allocated one territory throughout which they were able to distribute recordings. Between them they dominated the distribution of recorded music throughout the world.[16]

By 1914, expiring patents on these machines enabled dozens of smaller firms to capitalize on the fast-expanding talking-machine market. In 1912 there had been three manufacturers in the business – Victor, Columbia and Edison. By 1916 there were forty-six companies,[17] whose record-making activities were a marketing strategy to showcase their record players.[18] While phonograph manufacturers competed for sales during the 1920s by improving the performance and design of their record players, they also experienced a boom in the sale of records. Although at first records were simply a means of showcasing the performance and ability of the record players, the popularity of records spawned a lucrative market in its own right. The companies involved in recorded music have always been involved in a) the manufacture of consumer devices to reproduce audio, b) industrial manufacturing equipment to produce and press recordings for the devices, and c) making both of the above available to consumers.[19] Such companies have therefore always exercised control over the production, distribution and consumption of both the hardware and software involved in the reproduction of musical recordings. Hardware is the equipment which enables a process to occur – in this case, it is the record player. Software is the product, or the process that the hardware enables – in this case, records.

The economic depression of the 1930s had the effect of re-establishing the record business as an oligopoly: a form of production dominated by a small number of 'major' companies. In Britain, EMI bought into Chappell's publishing company which owned the rights to a large repertoire of songs, and by the end of the 1930s EMI and Decca produced and distributed almost all of the records manufactured in Britain.[20] In America the oligopoly consisted of RCA, Decca and the American Recording Company. The development of the radio and national broadcasts in the 1920s reduced the sales of records which meant that record companies' source of revenue shifted from record sales to collecting royalties from broadcast and performance of copyrighted works.

Among the first companies to advertise and promote their records, Decca was perhaps the most aggressive, with the effect that it boosted record sales dramatically. The expensive elements of producing sound recordings ~~were~~ the actual recording and mastering processes, the making of the 'master' disc. Thereafter the duplication of discs bore minimal expense compared to this initial outlay. It followed therefore that large sales of one recording would financially far outweigh moderate sales of several recordings, and so any advertising that ensured large sales of one particular recording was favoured by the record industry. The huge expense involved in promotional campaigns restricted them to the large companies, who could only afford to support a few artists at any one time. The emphasis was placed on artists that were guaranteed to procure large sales, giving rise to a 'star' system whereby a relatively few big names were promoted in order to generate large sales, rather than several artists being supported for moderate sales.[21] This model of investment shaped the acquisition strategies of the industry from that period to the present, where economies of scale mean that the major companies rely on a core of a few star artists to sell a large number of units. Through the course of the 1930s the rise of recorded music sold on a disc had changed music performance from being a live experience to a commodity subject to laws of economics, and record companies began to manipulate demand for music through aggressive advertising campaigns.

The emergence of radio and the application of sound in the cinema were two further technological developments which influenced the way that music was experienced, and marked a reorganization of the recording industry. Companies that were initially organized around electrical technologies now began to reorganize themselves to become an integral part of a wider entertainment industry.[22] Although

the advent of radio initially had the effect of reducing the sales of records, recorded music was a cheap source of programming for radio stations, and for record companies it was an important means of promoting artists to the public. The cinema was also an opportunity for companies to get their songs heard by the public, and links became established between the music industry and the media of film and radio.[23] In the 1940s Bing Crosby became the first modern star to benefit from the synergy of the new media. According to Houlton, "the consumption of one Crosby-commodity while satisfying one particular demand would also have the effect of increasing the demand for the other two commodities. Thus, when Bing Crosby made a radio broadcast it stimulated the sales of his records and attracted an audience for his films."[24]

This is a development which has continued to this day, where companies which own several different types of media are keen to cross-promote star artists throughout the different media of film, TV, press and radio.[25] By 1945 the structure of the record industry had been established, and it existed as an entity in its own right. The record companies had created a profitable market for commodified music, the production of which was controlled by a small number of large companies. Such control relied on the ownership of the means of record production and distribution, and was organized around the marketing of stars and star performances.[26] Although subsequent technological changes and breakthroughs effected the methods of production, the basic industry structure has remained the same since that time with few major changes in strategies or ethics.

The development of electro-magnetic tape during the 1940s was taken up by the media industries and by 1950 it had completely replaced cumbersome disc recording.[27] The advantages of tape were that it could be used and re-used, it reproduced sound with better quality, had a longer play and record time, and could be edited by cutting and splicing the tape itself.[28] It also reduced the costs of production, thereby enabling independent producers to join the recording market. Technological breakthroughs and the subsequent decline in costs of production have continually allowed independent producers to enter the recording industry. The development of multi-track tape recording in the 1950s and 1960s, electronic recording in the 1970s, MIDI computer systems in the 1980s and computer-based digital recording systems in the 1990s have all had the effect of bringing down the costs of production while increasing the potential quality of sound reproduction.

The following points can be drawn out from the preceding historical account:

1. The beginnings of the recording industry were as a part of the mechanical goods industry: records were initially produced in order to stimulate the market for gramophones. Although the recording industry developed into an entity in its own right, the endemic relationship between music hardware and software is as strong during 2000 as it was in 1888.

2. The expense involved in developing, producing, manufacturing and distributing musical commodities has influenced the number of companies that have been able to compete in the popular market. Although smaller independent companies have proliferated and dwindled, the major labels have almost always constituted an oligopoly.

3. The synergy of the different media – radio, TV, cinema and print – has allowed the record companies to extend their reach and increase their audience through promotion of their artists across the different media on an international scale.

4. As these different media have become more deeply entrenched within contemporary society, forming an integral part of people's everyday life, the recording industry has had more opportunity to promote their products and, rather than merely responding to markets, has been able to stimulate and control them.

The following section expands on these points in relation to the current state of the recording industry, showing how the industry today is organized as it always has been: to exert control over the production, distribution and consumption of both the hardware and software involved in the reproduction of musical recordings in the contemporary marketplace.

The Position of the Modern Recording Industry Within the Global Market

The core of the recording industry now consists of just five major companies: Sony, BMG, Time Warner, Universal and EMI, who together account for around 80% of

world-wide phonogram sales.[29] Although it was noted above that an oligopoly has been prevalent throughout the history of the industry, the current oligopoly is the result of a series of acquisitions and mergers, many of which occurred in the 1980s. As a result, each major record company is comprised of several record labels in their own right, but which ultimately come under the umbrella of the parent organization. For example, between 1987 and 1993 Polygram Records acquired Go! Discs, Island, Big Life, A&M and Motown, and Polygram itself was acquired by Seagram in 1998.[30]

Sony Music Entertainment consists of Sony Music (formerly CBS Records), Epic, Columbia, and Sony Classical. Time Warner owns The Warner Music Group (consisting of WEA, a 1960s merger of Warner with the Elektra/Atlantic/Asylum labels, and Reprise Records). EMI Records includes United Artists, Virgin, Chrysalis and Capitol. Each company also owns several smaller labels; for example, BMG Entertainment claims to be home to over 200 record labels in 53 countries.[31]

Moreover, the recording industry (currently worth $38 billion[32]) became subsumed within the $300 billion entertainment industry (films, music, video, computer games, books, magazines etc.) which became, in part, a division of a larger global hardware and consumer electronics industry. Although the recording industry's origins were as an integral part of the mechanical goods industry, it had become a separate and fully functioning entity by the 1940s. However, various mergers and acquisitions over several decades reinstated much of the recording industry under the control of consumer electronics device manufacturers. For instance, in 1962 Polygram Records became part of Philips Electronics, and in 1979 EMI merged with Thorn Electric Industries. In 1988 CBS Records was acquired by the Sony Corporation, whose reputation for many years had been as an innovative hardware company. And in 1990 Matsushita, the world's largest hardware manufacturer, acquired MCA Records for $6.6 billion.[33] Take-overs such as these allowed electronics device manufacturers to increase control over their product lines, putting them in control of the software that would be used on their hardware. However, during the 1990s the pattern of control over the software/content industries tended towards domination by corporate conglomerates with divisions in many different, but often related, markets. For example, after Matsushita relinquished control over Universal Records in 1995, Universal was acquired by Seagram, the

Canadian bottled drinks manufacturer.[34] In 1999 Seagram was acquired by Vivendi, the French cable network operator, to form Vivendi-Universal.

Corporate acquisitions and mergers have been a predominant activity throughout the history of the industry, and they are the implementation of a corporate strategy which has become known as *integration.* Fuelling the rapid growth of the media conglomerates, integration helps to realize and maintain an industrial oligopoly, allowing the transnational conglomerates involved in the media and hardware industries to exert some degree of control over the production, distribution and consumption of popular music.

Integration

Within the recording industry, a process of acquisition has allowed the large record companies to achieve a state of *vertical integration.* This refers to situations where a company either partly or completely controls the channels of production and distribution of a particular media market.[35] The major record companies therefore own and control all parts of the chain that occur in the production and distribution of musical recordings, such as recording studios, publishing companies, promotion companies, CD and cassette manufacturing plants, printing works, distribution companies and retail outlets.

Within the larger entertainment industry, *horizontal integration* is a strategy which brings several similar types of media in different markets (such as newspapers, radio stations, television stations, etc.) under one parent organization.[36] The prospective media company enters into various new markets with a product which it has successfully managed in its original market. This often leads to *multimedia integration,* the control of various media by one company. An example of both these types of integration is the American-based AOL Time Warner organization, who claim to be the largest media organization in the world. The Time Warner organization owns the Time-Life book and magazine publishers (*Time, Life, Fortune, Sports Illustrated*), Warner Brothers film studio, Lorimar Telepictures (the world's largest TV production company), Warner Music Company, DC Comics, the Home Box Office Cable TV channel, CNN cable network (the second largest cable network in the US), and recently merged with America Online (AOL, the largest Internet service provider).

An effect of horizontal integration as described above leads to what is known as *synergy*. This refers to the economic gain caused by the control of various media by one parent company. Such a company may experience advantages in advertising, distribution, financing, cross-promotion and management, thereby increasing the profitability of each separate medium, as well as of the whole company.[37] A company such as AOL Time Warner, through the ownership of different media, has the ability to promote any of its media products through any of its media channels (books, magazines, radio, TV channels, Web portal sites). Synergy is a vital factor for companies wishing to build communications empires as it allows one organization to promote its products in an extremely effective way to the largest possible market. This therefore aids the ability to stimulate and exert some degree of control over the market.

In summary, an organization's desire to maintain or increase the control over the market leads to a process of integration through acquisition and merger. This results in a market which becomes dominated by a decreasing number of large-scale companies. This process is known as *concentration*,[38] the effect of which leads towards an oligopoly. In the recording industry a relatively small number of major record companies that existed in the 1970s and 1980s has, over two decades, been reduced further still to only five major corporations who control around 80% of the world-wide market for recorded music. These four corporations exist within the larger context of the multimedia, communications and electronics industries.

Globalization

The early international phonogram industry clearly aspired to global domination, as evidenced by the agreement between the Gramophone Company and the Victor Talking Machine Company in the 1910s which co-operatively divided the globe into two areas of distribution. During the early twentieth century the major record companies recorded their musical commodities and distributed them to foreign territories, and in 1909 the US was producing over 27 million disks and cylinders, while German production (including exports) was around 18 million copies, Russian sales at 20 million copies in 1915, and the British and French markets stood at 10 million units each.[39] The same practice exists during the early twenty-first century, but now the international aspect of the music industry is not confined to distribution,

but extends to ownership. In conjunction with the series of mergers in the 1980s, the music corporations became increasingly global in nature, to the point where they became *transnational* corporations, that is, that they originate from the developed world (US, Europe or Japan), they are oligarchic in nature, and have a large number of branches and subsidiaries located around the planet.[40] The geographic expansion of corporate operations in search of new markets is often termed *globalization,* and in relation to the major record companies Burnett defines this term as 'the organization of production, distribution and consumption of cultural goods on a world scale market'.[41] However, Robert Hassan frames the term in a wider perspective of the development of capitalism, defining globalization as the 'systematic and essentially self-reinforcing process of social-economic expansion into geographic space'.[42] The economic competition that emerges from the capitalist's need to accumulate, he says, ensures that capital must expand into fresh geographical space in order to seek new sources for raw materials, new markets and cheaper labour if economic crises are to be avoided.[43] Although he recognizes that the process has been in operation at least since the dawn of capitalism, globalization became a prominent issue after the late 1970s due to the combined breakdown of the productive-organizational system of Fordism, and a 'crisis of space' brought about by the lack of fresh geographical space able to be used profitably. Generally this situation informs the underlying motivation behind the corporate concentration and integration which started in the 1980s in a bid to expand into new markets.

The next section examines the effect that the strategies of integration and concentration, which lead to market domination, have had on the production of popular music.

The Effects of Dominance in the Marketplace

The growth of increasingly large scale transnational conglomerates which control the global production and distribution of popular music has had certain specific effects on the way that popular music is produced, marketed, distributed and consumed. These effects can be seen to stem from the size of the company and the economic policies they subsequently adopt.

One effect of mergers, take-overs and consolidation, as well as the quest to dominate the market, is the need to maximize profits.[44] Two ways in which this can be achieved are:

1. Create the largest possible market for a product: As the music industry realized in the 1930s, this can be achieved by producing music which offends the least number of people as possible in an attempt to please the most.[45] Record companies, musicians and radio stations who are painfully aware of this fact attempt to orient their product to appeal to the maximum possible number of consumers, thereby maximising the potential audience and market for that particular product.[46] The effect of this is to create a musical mainstream, within which falls music that has commercial potential on a mass scale.

2. Sell as many units of that product as possible: As already noted, the costs involved in producing a master tape, from which CDs and cassettes can be manufactured, tend to be extremely high. Artist advances, studio time, and the hiring of experienced personnel all conspire to make production a particularly expensive stage in the activities undertaken by a record company. Therefore economies of scale dictate that selling, for example, 10 million copies of one record is far more profitable than selling 1 million copies each of ten records. The effect of this is that record companies strive to produce records that sell massive amounts, known as 'mega' hit records. These shape and epitomize the musical mainstream. The increasing pressure that multimedia conglomerates put on record companies to maximize profits is further compounded by the fact that 85% of music released by record companies does not cover its costs. The companies therefore rely on the remaining 15% of successful music to recoup their investments on less profitable types of music, developing new artists, and keeping their businesses operational.[47] This pressure fuels the need to produce records that sell vast amounts of units globally.

The major record companies therefore favour and rely on artists that are able to deliver records that consistently meet these criteria. As already mentioned, a star system has been in place since the 1940s, but since the runaway success of Michael Jackson's *Thriller* in 1983 (which bolstered a flagging music industry), this trend has

intensified in recent years; the industry has relied on a relatively small number of international superstars to provide the huge hit records. In return, the stars receive massive investment and support from their record companies to further bolster their success.

The production of both mega hits and superstars are facilitated by the synergy of a company's horizontal integration into different media. For example, Bryan Adams' single "Everything I Do (I Do It For You)" became the biggest selling single in history (until this title was taken away by "Candle in the Wind" by Elton John) partially because it was the theme song for the film *Robin Hood: Prince of Thieves* starring Kevin Kostner, thus allowing for huge promotion across different media.[48] The success of the single also boosted Adams' artistic profile, who as a longstanding commercial artist was well positioned to cater for the mainstream audience.

The star system therefore widens the gap between the star artists and the lesser known acts through massive investment in the successful artists which generates further success. At the same time this leaves less resources available for the acquisition, development and promotion of less well known artists, making it less likely for them to achieve an adequate level of financial success, and may result in many less immediately commercial acts being dropped from the label altogether. The effect of this is to perpetuate the need for instantly commercial records to produce revenue. The above information implies that the major-label industry operates a self-perpetuating cycle whereby the quest for increased profits leads to a focus on hit records and a star system, which in turn stimulates a market for mainstream music and a demand for hit records from recognizable artists, or stars. Over a period of decades (since the 1930s) this self-feeding cycle of supply and demand has established itself in popular culture as the musical mainstream of the commercial charts.

While this may paint a culturally bleak picture, more innovative and groundbreaking music is produced by artists in association with smaller independent record labels. Being smaller, such companies are better positioned to respond to emerging music movements, and the independent sector accounts for a healthy 25–30% of the total UK market.[49] If any product released by these independent companies proves to be commercially successful, it is usually absorbed by the major companies and reworked for a mass audience.[50]

Consumption: under the influence?

Throughout the preceding section the implication has been that the major record companies, through their control of the mass media, are able to shape and stimulate demand for their products, effectively influencing patterns of consumption in their favour. However, this is not entirely accurate as there are many social factors which determine the musical preferences of record-buying youth, ranging from age, race, marital status and sex to geographic location.[51] The challenge for the record company is to influence these social factors as well as individual tastes, and sophisticated marketing techniques have been developed by the promotional and marketing departments of media companies for this very purpose; as noted above, successful marketing manipulates the media to create a desirable image, a lifestyle, and a point of identification for consumers.[52]

The dominance that the record companies enjoy is not automatically determined by their control of the media, but by providing the record-buying public with products that they are prepared to purchase. As an example of the majors' failure to dominate consumption, Denisoff recounts that from 1948 through 1955, four companies enjoyed over 75% of the US market, though by 1958 they had less than 36% of the market. The reason for this slump was that the majors were not producing what record-buying youth wanted, while black independent labels were responding to the demand.[53] The record company's bid for the consumer's money is constantly pitted against the demands of the record-buying public as ephemeral trends in popular music emerge, change, and fade. Garofalo notes that while the five major corporations may rule financially, this is not synonymous with controlling the form, content, and style of popular music; this they must follow, rather than lead. The overwhelming success of hip hop in the face of exclusion, suppression, and outright censorship, is testament to the fact that record companies have relinquished control over form and content in their relentless pursuit of higher profits.[54]

Successful mainstream popular music – or what has come to be known as 'chart' music – ultimately consists of those musical works which sell enough phonograms to qualify for entry in the official music charts.[55] Chart music is therefore a market defined by a record-buying public who select music they like from what they hear. The most widespread and accessible source for hearing new

music is radio; if record companies wish to achieve success with a record, then radio promotion is vital.[56] It was noted above that the mutually beneficial relationship between record companies and radio stations has existed since the 1930s; record companies have provided a cheap and constant source of programming for radio stations, and radio has provided a critical means of promotion for the record companies. The fact that the four major companies control the distribution of 80% of all recorded music indicates that much of what is played on the radio, as well as what is available for purchase in retail outlets, is owned by the major corporations. However, this alone is not sufficient to persuade the passive consumer to become an active record-buyer. Wicke argues that this process cannot be achieved through coercion or even persuasion. The vast amounts of capital invested in product presentation serve to decrease the number of competitors in the marketplace, thereby increasing the company's market share.[57] By ensuring the record's ubiquity in the media through this level of expenditure, the music and its associated image are made to seem important. This in itself does not ensure that the consumer will buy the record, but it ensures that out of the wealth of new music available only those new releases come to his attention which are made to seem important through vast capital outlay. In this way the major companies can, *to some extent*, influence the decisions, and therefore the patterns of consumption, of the record-buying public. The fact that a single organization such as AOL Time Warner can own and control many different media outlets, and is subsequently able to promote products across the various media, must increase the influence exerted over patterns of consumption.

To summarize the preceding section, the recording industry is subsumed within the multimedia and entertainment industry. Transnational conglomerates own the five major record companies, who enjoy close relations with the electronics industry. The transnationals are horizontally and vertically integrated in a way that allows them to control much of the market they belong to, thereby increasing their market share and enables them to form an oligopoly which controls 80% of the world market for recorded music. The effects of this dominance in the marketplace are that they rely on a relatively small number of stars who can repeatedly produce marketable music which constitutes a mainstream. Popular, or successful music is defined by that which sells enough phonograms to be deemed successful. The major corporations spend vast sums of money on product promotion, thereby ensuring its ubiquity in the media and its place in the forefront of the public's consciousness.

Music which has a high level of product presentation has much more chance of success than that which is poorly represented. The fact that the five major companies have this level of control over the distribution of recorded music indicates that their music constitutes the bulk of that which is available to the consumer.

Copyright

This chapter has thus far outlined the ways in which the music industry goes about bringing a work to the market and, through its prominence within the media complex, attempts to ensure the success of that work. It can be noted that the major record companies operate a vastly expensive business of music production and dissemination, which is simultaneously extremely profitable. Although it has been shown that the record companies' activities are geared towards selling their recordings, an operation of this scale would not be financially viable without a system of copyright protection. Copyright is such a crucial concept to the functioning of the industry that without the ability to rely on and enforce copyright, the industry's business model and revenue streams would collapse. Copyright is the legal protection which enables the corporations to control the distribution and consumption of their recordings and recoup their investments. But how has this concept, apparently designed to remunerate authors for the creation of intellectual works, become the cornerstone of a global culture industry? In order to answer this question adequately, it is necessary to examine briefly the development of copyright, and the ends to which it was designed.

The Development of Copyright in the UK

The first piece of copyright legislation in the world, the Statute of Anne, was enacted in 1710 in the UK. It gave publishers a legal monopoly over printing a book for a term of 14 years after publication, after which time the author was permitted to renew the term for another 14 years. The Act was a response to the power of the publishing industry which had developed a monopoly over printing, and the purpose of the Act was to protect the publishers' rights against piracy (illegal copying), while limiting their monopoly by defining the term (length) of protection. The establishment of copyright law defined this protection as a state granted right, as

opposed to what some saw as a natural common law right. The significance of this is that the state granted right restrains the publishers' monopoly by limiting the term of protection, while the interpretation of copyright as a common law natural right of authors favours publishers, as it assumes protection *in perpetuity*. The public was also mentioned in the Act; it was entitled "An Encouragement of Learning", thereby clarifying a goal of public education as a desirable outcome of book publishing.

In the US in 1790, the drafting of the Constitution included a copyright clause which was based on the Statute of Anne. This also understood copyright in terms of a state granted right and, much more so than in the UK, the public were to be the specific beneficiaries of copyright, through the promotion of learning. In the US then, the purpose of copyright was to benefit the public through access to ideas and inventions, by encouraging authors to create works and inventions.

Dr Lee Marshall points out that copyright is therefore a bargain which seeks to balance the interests of the three parties involved in bringing a work to the market: the author, the publisher, and the public. The author seeks to give expression to his ideas, to disseminate them, and to gain some financial benefit from them. The publisher's interest is to profit from bringing the works to the widest possible market, and the interest of the public is in access to information and ideas. All of these three interests appear to be served at the point of publication. The legal system may lend more weight to one or other of the interested parties by altering the length or breadth of protection in copyright, according to the ideals which it strives to fulfil; different nations have different emphases according to which party is considered to have priority within the copyright bargain.[58] For example, in the UK the statute was originally intended to limit the publishers' monopoly. In France, the author's rights took priority, while the US statute was intended to positively promote public intellectual advancement.

In the UK, the emphasis in copyright changed in 1814, when a new copyright bill was passed which associated the term of protection with the lifespan of the author. This was confirmed by the 1842 Act, which offered protection of the author's life plus seven years, unless the author died within seven years of publication, in which case it was 42 years. Marshall notes that:

> The 1842 Act placed UK copyright law at the service of art rather than education. UK copyright law was no longer an 'act for the encouragement of

> learning', it was now an 'act to afford greater encouragement to the production of literary works of lasting benefit to the world.' The author had moved to the centre of copyright by becoming the basis of the term of protection, and the paternal relationship between author and work was supported by *post mortem* term of protection.[59]

The *centralization* of the author within copyright – that is, the process whereby the author becomes the central figure and the basis upon which copyright protection is defined – relies on the *elevation* of the author or poet as one who, through his intellectual refinement, should educate the masses. Within this romantic idea of authorship, the artist is considered a superior being who has the elevated duty of uncovering Truth.[60] Importantly, also bound up within this idea of romantic authorship is the belief that copyright protection should extend beyond the life of the author in order to serve as a memorial to the immortality of the work and its author.

The significance of this shifting of interests within copyright law is that it allowed the balance between the three parties to change. Whereas the public benefit from a shorter term of protection, the author and especially the publisher benefit from longer protection, which is justified through the concept of honouring the rights of the romantic author.[61] Ironically though, although the author is now positioned as the central figure within the system of copyright, the publisher is in as strong a position as ever due to his indispensability in the process of disseminating an author's work.[62] The publisher is generally quick to argue on behalf of the rights of artists and authors, because once these rights have been recognized and upheld, his own position (in his relationship with the author) is strengthened due to his vital competence in bringing the author's work to the market. The continual expansion of copyright to its current term of the life of the author plus 70 years, has been achieved largely through lobbying by publishers in a bid to expand their own interests.

The Reality of Copyright

The significance of these developments to the recording industry should be clear: whereas in the 18th Century publishing equated to the printing of books; in the 21st Century publishing involves bringing any artistic or intellectual works to the market, including music and sound recordings. The corporate publisher's vital position in

the dissemination of the author's work endows him with considerable strength and negotiating power which is maximized by his global reach. The ability to exploit the increasingly diverse channels of distribution (CDs, film, books, magazines, radio, TV etc.) by making content as widely available as possible, appears to serve the interests of all three parties involved in copyright: the author, the publisher and the public. But it is the publisher who enjoys the dominant position within this relationship; the publisher's global distribution infrastructure gives him additional leverage in negotiating the assignation of rights within a work, giving him a stronger capacity to profit from its dissemination. Moreover, his success in strengthening the length and breadth of copyright has further enhanced his capacity to continue deriving revenue from more varied uses of the work over a longer period of time, often at the expense of the public.[63]

Today, copyright is most commonly defined in economic terms – as a means of ensuring that revenue is derived from the uses of a work – and the rights that subsist within a work are thus: authors and creators are automatically provided with a bundle of rights over any literary, artistic, and/or musical work which they produce. In the UK, copyright owners are given the exclusive right to do and authorize the doing of the following acts (subject to certain statutory exceptions):

1. To copy the work,
2. To issue copies of the work to the public,
3. To perform, show or play the work in public,
4. To broadcast the work or include it in a cable programme service, and
5. To make an adaptation of the work or to do any of the above in relation to an adaptation.[64]

Although copyright is initially vested in the individual creator (known as the 'Author' in perpetuity) it rarely remains there for long, for rights can be 'assigned' from one party to another.[65] In the process of bringing music to the market, the author trades these rights against resources s/he does not have, for example a specific promotional muscle, global distribution, and access to risk-finance.[66] Intermediaries which provide such services include publishers, record companies, and the collection societies:

1. Publishers: Composers assign a portion of the rights in their compositions (not more than 50% of their 'musical works') over to the publisher, whose job is traditionally to find users for the works, issue licenses, collect monies and pay the writer.[67] In this role the publisher adds value to the product through promotional competence, in return for the revenue it collects from the issuing of licenses. For international exploitation, the publisher may enter into sub-publishing agreements with publishers in other territories in order to exploit the 'musical works' in those territories/countries. Most major publishing companies exist as subsidiaries of major record companies, in which case their role is one of accounting.

2. Record Companies: invest time and money in the recording, promotion and distribution of musical works. Record companies own artists' 'recording rights' and 'sound recordings'.

3. Collection Societies: monitor duplication (of the recordings to tapes and CDs) and secondary usage (performances on the media and in public places). In the UK these are, respectively, the Mechanical Copyright Protection Society (MCPS), the Performing Right Society (PRS), who collect and redistribute royalties to the owners of the 'Musical Works', and the Phonographic Performance Limited (PPL) who represent the owners of the 'Sound Recordings' (i.e. the Record Companies).

The complexities of copyright management become clear when the various rights and their administration are examined. Different rights subsist in the different parts of a music commodity, which are in turn exploited by one or other of the intermediaries. Rights exist in the composition of a tune (usually attributed to the melody line and lyrics). These become 'Mechanical Rights' when the owners issue a license for the recording to be made into a phonogram and subsequently sold or otherwise exploited.[68] Rights also exist in the performance of a tune (by the performing musicians), and in the recording of a tune (by the record companies as 'Producers of Sound Recordings'). As such, there are at least three types of royalty which can be derived from phonograms:

1. Artist Royalties: a percentage of the retail price (normally around 10%) is paid by the record company to performers of the work, for each phonogram sold to retailers. This comes out of the copyright in the sound recording.

2. Performance Rights: royalties are generated from the exploitation of both the 'Musical Work' and its source, the 'Sound Recording'. For the performance or broadcast of the former in public places (for example, playing a song on radio, TV, in the supermarket, or on a jukebox), the royalty goes to the publisher and songwriter, and in the UK is collected by the PRS through a system of licensing and broadcast monitoring. It is then distributed to member publishers and composers. For the latter (performance or broadcast of the record company's 'Sound Recording'), royalties are payable by radio/TV stations etc to PPL. In turn, PPL pay the Record Companies their share (50% exactly), and the performers (through their own Performers Registration Centre) their share directly (also 50% -- the Artists have also agreed among themselves to further divide their 50% distribution as follows: 65% of their share goes to 'Featured Artists' and the remaining 35% goes to the 'Non-featured Artists').[69]

3. Mechanical rights: a royalty is paid by the record company to publishers and songwriters for every mechanical reproduction made of a recording (for example, the manufacture of CDs and tapes). In the UK this is collected by the MCPS, and is then redistributed to member publishers and composers.[70]

Copyright is therefore a means of establishing and enforcing legal ownership of a work, the privilege of which is the ability to exercise the *exclusive right* to make copies of the work, to disseminate it, and to alter or adapt it. Through the complex system of copyright definition and management, it also ensures that the usage of a work generates a flow of revenue back to the rights holder. For the record companies, their 100% ownership of the rights in the sound recording, and their 50% ownership of rights in the composition (through the publishing arm of a record company) firmly establishes them as legal rights holders of a work. Therefore the exclusive right to copy and distribute the work grants them a monopoly over distribution which positions the corporations as the only legitimate financial benefactors from the reproduction and dissemination of the recordings; the complex

system of royalty collection outlined above therefore guarantees this flow of revenue back to the corporations.

This system is vital for the record companies, and distribution in particular has special significance, as the means whereby they may recoup the massive investments involved in bringing a work to the market. On the supply side, the recording and release of an album can be extremely costly. It is also important to note that on the demand side, the ease with which consumers may copy such recordings potentially threatens the corporations' ability to extract payment for the uses of the work; if users copy a work rather than buy it, the corporations may not receive the payments required to recoup the costs involved in producing a work. Sound recordings therefore, as with most works of intellectual property, are expensive to produce and cheap to copy. The corporations' exclusive right to copy and distribute not only positions them as the sole financial benefactors of distribution, but also attempts to ensure that once a work has been released to the market, unauthorized uses of that work are kept to a minimum in order that the rights holders leverage the maximum revenue possible through the dissemination of that work.

During the last 20 years there has been a shift from the reliance on distribution as the key income-generating activity, towards increased administration of rights in the expanding media marketplace. This has been possible through the expansion of the broadcasting and multimedia industries (and their reliance upon music and associated content as sources of entertainment for use over the increasing number of distribution channels), which have generated a flow of revenue to the rights holders through the administration of performance rights. This shift towards administration of rights has been facilitated by the corporations' successful lobbying for extension of existing rights (such as the term of protection to the life of the author plus 70 years), the creation of new rights (such as translation rights), the control of existing rights (such as exclusive rights over broadcasting), as well as the attempt to control all uses of a work. The financial significance of physical distribution is therefore becoming less prominent as the administration of rights is moving to the fore, compounded by the increased scope and definition of copyright against the backdrop of expanding multimedia industries.

Without copyright as a means to establish legal ownership of the work, to grant a monopoly over distribution, to limit piracy, and to generate a flow of revenue

back to the rights holders, the entire system of the recording industry would not be able to function, for it relies on this revenue to recoup the investments involved in the production of sound recordings, and to cover the expenses involved in running their business. However, technological developments which enabled the expansion of the media industries also increased their vulnerability to unauthorized uses, and resulted in an unforeseen lack of control over an increasing piracy problem. The next chapter explores the development of audio and video technologies which enabled the transmission of digital audio data over limited bandwidth networks. This led to the development of community-based networks over which unauthorized sound recordings were transmitted, posing a threat of unchecked music piracy to the recording industry, and undermining the control of copyrights that are so central to the wellbeing of the industry.

Chapter Two: Music Becomes Fluid Information

Chapter One described and analysed the current industry structure, its position within the global market, and the strategies which have enabled the music companies to become competent at producing, promoting and distributing music in a particular way which enables them to become successful at influencing consumption within the market. It also explored the centrality of copyright to the music industry; this is vital as a means of protecting its monopoly on distribution, which then guarantees, as far as possible, a return on investment, while limiting unauthorized reproduction and distribution. The following chapter examines the benefits and drawbacks which accompanied the transition of analogue sound recordings into the era of digitization, the implications this had for the music industry, and how it has decreased the corporation's control over the reproduction and distribution of their recordings. The consumer's desire to copy and share recordings is examined, and the ways in which this conflicts with the industry's need to control such activity is assessed. The tensions between the two sides only increased as digital culture became connected via networks, rendering mass reproduction and distribution a distinct possibility.

Audio as Digital Data

When audio was recorded and stored in analogue form – that is, as representations of waveforms that produced vibrational sound – the only method of reproducing that audio faithfully was to make a copy from the original master recording. With the emergence of the Compact Disc (CD) format in 1982,[1] music came to exist in digital form – an event that had an enormous impact on the audio industry and the way that music was stored, played back and recorded. As the first digital mass market sound carrier, the CD revitalized a stagnating market for phonograms, and consumers paid higher prices for what they generally perceived to be an increase in quality, durability and convenience over black vinyl.[2] Electronics manufacturers such as Sony were continually striving to increase audio quality and storage capabilities of consumer formats as a competitive strategy, and by 1983 Sony had also developed a new digital tape format specifically designed for consumer use known as Rotary head Digital Audio Tape (RDAT), now universally abbreviated to DAT.[3] Although

this format had been approved by 83 companies, from consumer electronics manufacturers to blank tape manufacturers, trade organizations from the US music industry put enough pressure on the government to bring a halt to commercial development of DAT recorders. Their concern was that digital audio could be perfectly 'cloned' – it could be transferred an unlimited number of times from one carrier to another without any degradation of quality, and this meant that individual users could borrow the source material and make perfect copies causing a drop in sales of pre-recorded CDs and DATs. This fear was founded on the significant concern at the time that home taping from records to cassettes had generated a substantial loss in profits for the recording industry during the 1970s.[4] Home taping had taken the blame (alongside a depressed economy and a stagnant musical climate) for a slump in record sales, and the music industry's response was to claim that home taping infringed copyrights – it violated the author's exclusive right to make and issue copies. They reasoned that every blank tape purchased equated to a lost sale and publicized home taping as theft, and in 1985 pursued Congress (unsuccessfully) to amend copyright laws.[5] In the light of home taping, then, the unlimited potential for home copying that DAT presented raised serious cause for concern.

The conflict of interests which emanated from certain characteristics of digital audio – that it provides an increase in sound quality, while also allowing unlimited unauthorized duplication – forced the industry to use its economic strength and lobbying power to halt the undesirable effects of digital serial copying.[6] Once again the US music industry lobbied Congress to introduce legislation (this time successfully), which led to the passing of the 1992 Audio Home Recording Act (AHRA). This specified that all manufacturers of digital audio recording devices were legally required to implement restrictive mechanisms into their machines which rendered potentially uncontrollable digital formats controllable. The solution employed was a specification called Serial Copy Management System (SCMS) which was built into every DAT recorder made.[7] SCMS restricted the number of digital copies that could be made from a source, to one copy. The intended effect of this was to protect the corporations' monopoly on distribution by preventing serial digital copying of CDs which could result in a loss of revenue through a lack of pre-recorded DAT sales. The purported benefit to the consumer was that they could not be liable for copyright infringement if copying using a device conforming to the

AHRA.[8] Although SCMS did what it was intended to do, DAT machines never became consumer items; instead they were adopted by the semi-professional recording industry, where the SCMS specification was only a nuisance that hampered the ability to create multiple master copies of a recorded piece.

One of the underlying issues in this case is the recording industry's desire to nullify the 'undesirable' effects of new technologies (the consumer's ability to serial copy), in order to economically empower themselves with the 'desirable' effects (increased audio quality, creating new markets for new formats). They used their monopoly on reproduction, granted through copyright, as a tool to minimize unauthorized use, thereby protecting their business model of selling music recordings on sound carriers. Such lobbying by the music industry for the introduction of legislation to protect their own interests has been an effective strategy pursued by publishers since the beginning of copyright, and this strategy is covered more fully in Chapter Three.

During the period of time since the development in 1982 of the read-only CD until the early 1990s there had been no perceived need to protect or encrypt the audio data carried on the CD format, since the SCMS requirement on DAT machines halted the unauthorized copying of the audio data by users and consumers. However, the recent development of the recordable CD (CD-R) in the mid to late 1990s allowed the transfer of digital audio from one CD to another without restriction. For although any format intended specifically as a "digital audio recording device"[9] (such as DAT) was required by the AHRA to implement SCMS, computer equipment did not fall under this legislation. The AHRA, through Sony's desire to import consumer DAT machines, had resulted from discussions between the Consumer Electronics Manufacturing Association (CEMA), the Information Technology Industry Council (ITI), and the Recording Industry Association of America (RIAA).[10] The ITI was concerned that any legislation which fixed the way that copy protection should be incorporated into computer devices would drastically affect the architecture and functions of computer devices and their peripherals. They were also concerned that as computer technology was in its infancy, any static government regulation would inhibit innovation. The rapid advance of information technology is exactly the reason the computer industry opposed government regulation of technology. Therefore, in drafting the AHRA a clause was included which specifically exempted computer devices and their peripherals from

incorporating copy protection. Under subsection 1001 (5) (b) (ii) of the AHRA, once a music file was fixed on a computer's hard drive or semi-permanent memory of any kind, it was no longer a digital musical recording covered by the Act. Neither a personal computer, nor a machine which cannot accept audio input from a consumer electronics device would be covered by the AHRA; nor would there be any legal requirement to implement SCMS or its equivalent to any computer-based audio equipment.[11]

Therefore certain technological developments – the digitization of audio, in conjunction with computer-based semi-permanent memory (such as computer hard drives, re-writable CDs, or Zip drives) – enabled the transfer of digital musical data from one carrier to another without restriction, where previously it had been technology which restricted this activity. To the detriment of the recording industry, the popularity of formats such as CD-R has re-established the concern that it voiced in 1983 with the arrival of DAT machines: that with widespread recordable CD, sales of pre-recorded phonograms would drop due to the consumer's ability to make digital copies of music from borrowed source material. The extent to which this is true in the late 1990s, and to which it has contributed to widespread piracy, could not have been foreseen when audio moved from analogue wave to digital data in 1983. Additionally, the ability for digital music files to exist on a computer hard drive did not pose a substantial threat of piracy until it converged with compression technologies in 1997. An overview of software-based compression, as well as the implications of this marriage of technology, are discussed below.

Compression Technologies

The term 'compression', when used in relation to a digital audio file, refers to a software algorithm which performs data reduction on that file.[12] Its function is to reduce the bit-rate[13] of a particular file by a user-determined amount, thereby reducing the size of the audio file, while ideally leaving the dynamics of the signal unchanged.[14] Compression algorithms are performed in two categories: *Lossless* compression, where there is actually no degradation of the audio quality; and *Lossy* compression, where data that is considered irrelevant is discarded by the compression algorithm.[15] Lossless compression is generally restricted to

compression factors of around 2:1, but lossy compression (also known as perceptive coding) allows for much greater compression ratios, such as 22:1 or even more.[16]

In the late 1980s various technology companies were investigating compression techniques in order to facilitate certain digital broadcasting solutions as well as for adding digital audio to films.[17] The Munich-based Fraunhofer Institute for Integrated Circuits[18] were also developing data reduction techniques in order to reduce the bit-rate of moving video to the extent that it could be reproduced on a compact disc, where it would normally require much greater storage space.[19] In 1989 they developed one of the most effective algorithms for audio compression which led to a compression standard issued by the Motion Picture Experts Group in 1991 called MPEG 1 Layer 3 (now almost universally known as MP3).[20] The primary audio principle that MP3 relies on is known as perceptive coding, which attempts to ensure that the output signal from the encoder sounds the same as the input signal, to a human listener. This extremely complex process utilizes various techniques to achieve this, the principle one being an effect known as 'auditory masking': a model of human psycho-acoustics defines which parts of the signal are not audible to the listener due to the functions of the human auditory system, and then discards the data that is irrelevant according to this model.[21] Another method of data reduction used by MP3 is the Minimum Audition Threshold, which discards data that falls below the audio threshold that can be perceived by the human ear.[22]

When encoding audio to MP3, the user-defined bit-rate dictates how much compression is applied to the file; for example, encoding at a high bit-rate (265kbps) yields less compression (5:1), while encoding at a low bit-rate (64kbps) yields more compression (22:1).[23] The less compression applied to the file, the higher quality the resulting audio. The popularity of MP3 among computer music enthusiasts has been due to a combination of good audio fidelity coupled with small file size, allowing typically very large files to be reduced to a fraction of their size. For example, a three-minute song in fully uncompressed digital audio would be 252 Mbits in size, while the same track compressed at a bit-rate of 128 kbps (11:1) would render a file size of 23 Mbits, with good quality resulting audio. Although this does not produce CD quality audio, it is generally considered to be *near*-CD quality. Although MP3 was standardized in 1991, it was not until 1996 that the speed of microprocessors in home computers had developed to the extent that the complex MP3 decompression

algorithm could run in real time, and it was then that Fraunhofer released their MP3 encoder and decoder as shareware on the Internet.[24]

Home Taping with New Technology

The small size associated with MP3 files increased the ability for users to store music on computer hard drives at a time when storage capacity was expensive and limited by current standards. MP3 encoders and players also allowed individuals to use computers as devices for encoding, storing and playing back audio in the same way that one would with a cassette deck. This use of the computer as a media device encouraged user behaviour that was reminiscent of home taping which, as noted above, was a significant concern for the music industry from the late 1970s onwards. The following brief outline of the social and cultural aspects of home taping is informative to the analysis of MP3 file exchange.

There are two aspects of home taping which raised concern within the music industry: the making of unauthorized copies from the 'authorized' copy, and then sharing those copies socially.

1. Making copies: Industry representatives argue that unauthorized copying clearly violates the author's basic right to authorize the copies made of a work. Additionally, they argue that those who make copies will not buy the authorized copy, thereby having a detrimental impact on the market for their recordings. A survey of the literature on home taping suggests that those who partake in this activity are music *enthusiasts*, active music consumers who still purchase music even though they make copies.[25] The Mintel market survey report found that while 15% of the UK population copy music, only 2% copied music without buying it.[26] Both Kapp *et al* and Brown *et al* also found that authorized, pre-recorded music maintained significant value within the taping culture, indicating that copies are not used primarily as a substitute for pre-recorded music. Therefore the relationship between home taping and loss of sales may not be quite so easily defined.

2. Sharing copies: Among young music enthusiasts, music is often the central focus around which social activity takes place. These social music listening

> environments promote the exchange of information and taste about new music; sharing copies of music is a way of discovering new music, as well as recommending and filtering music for each other based on one person's knowledge of another's preferences.[27] Although this sharing activity violates the author's right to issue copies of his work to the public, it would appear to promote the discovery of new music, and if, as point (1) above suggests, such enthusiasts are willing to actively purchase music, such activity may in fact encourage sales.

Home taping can therefore be used to make copies of music for personal use – for instance, for use in an in-car hi-fi system, or a personal stereo. It can also be used as a 'collaborative filtering mechanism' for discovering and recommending music.[28] It can also be used to experiment with music, to try either music that one is unfamiliar with before buying it, or music that one would not buy anyway.

Many of these social and practical characteristics of home taping continued as the technological means for copying and sharing music changed. The aspect of home taping for personal use began to extend from conventional playback media to computers and MP3 files in 1996. The more social aspects of discovering, recommending and experimenting with new music were enabled as people used computers to connect to the Internet. Music enthusiasts began chatting through Internet Relay Chat (IRC), formed communities, shared opinions, recommendations, discussed common interests, and much of the initial unauthorized MP3 activity occurred through IRC. Large communities of young people from around the world shared their musical enthusiasm, and the openness of the MP3 format suited the medium – it could be copied, downloaded, transferred, and sent to friends for them to enjoy. The open format also allowed musicians and enthusiasts to encode their own music into MP3 format and reap the benefits of being able to make it available for download, sending it to friends, copying it and transferring it from one location to another. These freedoms came to exist integrally within the music itself, giving Internet-based music a life of its own, as well as adding value over conventional methods of discovering, purchasing and experiencing music. By 1999 the idea of MP3 file exchange had become extremely popular, and 'MP3' overtook 'sex' as the most frequently used search term on the Internet.[29] In November of the same year a program known as *Napster* was developed which provided a central service through

which millions of users could exchange music files, pushing MP3 exchange out into the open (see *A & M Records inc., et al. vs. Napster inc.* below). File exchange had come to rely less on the major corporations as a source for music as it had on a decentralized network of individuals, who felt empowered in their ability to consume and share music in ways which suited them and the music they listened to, rather than in ways which had been passed down throughout the last century. A democratization of the consumption of music was occurring and it was not in the interests of the music corporations to let it develop.

Although many of the uses which characterized MP3 file exchange directly continued from the activity of home taping, the significance of this shift in technology should not be underestimated. Both activities violated the rights holder's authority to reproduce a work, and to issue copies to the public, although both operated on a non-commercial basis. However, the industry's overreaction to home taping in the 1970s was belied by the fact that continued serial copying with magnetic cassette tape resulted in such degradation of audio quality that by the 3rd or 4th generation copy, the audio quality had become generally unacceptable. Additionally, sharing or distributing copies was restricted to a local social network which was strictly defined by geography.

MP3 file exchange caused no such audio degradation; the first copy was the same as the 1000th copy, which meant that one unauthorized copy could potentially flood the illegal market to the extent that it had a direct detrimental impact on the legal market. Moreover, sharing was not limited by geography; the global network allowed exchange between countries, continents and nations. So although both home taping and MP3 file exchange were conceptually similar, the latter's comprehensive potential for unauthorized reproduction and distribution posed far more of a threat than the former, to the wellbeing of the industry's exclusive rights on which they wholly relied. File exchange embodied the worst aspects of a fusion between home taping and digitization: unlimited potential for both unauthorized serial copying as well as distribution, combined with no loss of audio quality, resulting in the threat of decreased sales of conventional phonograms. Moreover, the MP3 format contained no restrictive mechanism, copy protection or tagging information, and as such was a technology which the industry was unable to control.

The legality of both home taping and file exchange seems blurred if not utterly dubious, indeed they appear to violate the 'first and second amendments' of

the copyright clause – the authority to copy the work, and to issue copies to the public. The perceived threat of such activities was that such unauthorized copying and distribution could result in diminished sales of authorized copies, thereby having a detrimental impact on the industry's profits – in effect, it violated the corporations' monopoly on distribution. However, the definitive legal position of these activities has not thus far been clarified, and a further examination of copyright and what has come to be known as 'fair use' will provide a context within which it is possible to identify both legal and illegal unauthorized uses of copyrighted works. This will then inform a discussion of the industry's backlash reaction to file exchange under the banner of a global anti-piracy campaign.

Fair or Unfair?: Authorized and Unauthorized Uses of Copyrighted Works

Chapter One emphasized the importance of copyright to the music industry's business model in the way that it provides a monopoly over the reproduction and distribution of a work. However, this is only a limited monopoly and is subject to certain statutory exceptions, and it is these exceptions which are crucial to enable and fulfil the public's side of the copyright bargain, allowing them to utilize works of intellectual property to their fullest extent. The following discussion examines US copyright rather than the UK, as all activity in digital distribution, music e-commerce, legal reform and subsequent litigation has been US-based, and has generally overshadowed the lack of development and activity in the UK.

As already noted, copyright was a means of achieving a balance between the author's desire to create, disseminate, and gain reward for his work, with the publisher's interest in profit from dissemination, as well as the public's need for the unfettered exchange of information and ideas, and in the US especially the public was nominated as the number one beneficiary of works of authorship. The 1787 Patent and Copyright Clause of the US Constitution declared that the first consideration of copyright was to "promote the Progress of Science and useful Arts"[30] through the free exchange of ideas, with reward to the owner a secondary consideration.[31] Justice Sandra Day O'Connor stated, in the case *Feist Publications Inc. v. Rural Telephone Service Co.*, that:

> The primary objective of copyright is not to reward the labour of authors, but "[t]o promote the Progress of Science and useful Arts." To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work. This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art.[32]

Copyright therefore offers creators the incentive of profit from their work in order that they create new works, ideas and inventions from which society may benefit. To this end the copyright holder is granted his exclusive rights while the public are granted their exceptions from those rights; this gives the author protection against piracy (thereby allowing a return on the commercial dissemination of the work) while limiting the rights holder's monopoly (so allowing full and creative use of the works by society at large). Regarding the division of the benefits derived from a work, Professor Jessica Litman notes that "in economic terms, neither the author nor the public was entitled to appropriate the entire surplus generated by a new work of authorship. Rather, they shared the proceeds, each entitled to claim that portion of them that would best encourage the promiscuous creation of still newer works of authorship."[33] Copyright was seen to provide only limited protection and exception-ridden control over intellectual property, and the maintenance of the balance of interests was the crucial ideal to which copyright law should strive.

Those uses of a work which were therefore not explicitly authorized by the rights holder, but were nevertheless legal, came to be know as "fair use". Prior to the 1976 Copyright Act, fair use had not specifically been codified into the statute, and fair use became accepted as the domain beyond the scope of the author's limited monopoly. The 1976 Act gave fair use statutory recognition for the very first time, and listed several illustrative exceptions which would be considered a fair use, such as reproducing copyrighted works for purposes such as criticism, comment, news reporting, teaching, scholarship or research.[34] In addition to those activities specifically exempt by the copyright statute, case law continued to define the parameters of fair use as new situations arose over time. The measure by which a use is deemed by a court of law to be a fair or unfair use is a four factor test. These factors are:

1. the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit 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.[35]

A specific example of a case which determined the fair use status of a legally dubious activity is *Sony Corp. of America v. Universal City Studios* in 1982, the outcome of which has been extremely influential concerning subsequent issues of fair use. This case concerned copyright holders of certain programmes which were broadcast on public TV, and Sony as a manufacturer of Video Cassette Recorders (VCRs). It was alleged that copyrighted works broadcast on TV had been recorded by VCR consumers who had thereby infringed copyrights, and further that Sony was liable for such copyright infringement because of their marketing of the VCRs. A lower court's decision for Sony was overturned by a higher court's finding for Universal. This ruling was set aside by a split Supreme Court, which recommended the issue be considered by Congress. It was there that consumer and small business interests were favoured over those of the film industry.[36] The court ruled that non-commercial home use recording of material broadcast over the public airwaves was a fair use of copyrighted works and did not constitute copyright infringement. The District Court held that the consumer should be able to *time-shift* broadcasts (i.e. record them at a time when the VCR owner cannot view the broadcast so that it can be watched at a later time), and that as long as a technology was merely *capable* of substantial non-infringing uses then it would be protected.[37] The US Supreme Court held that "all reproductions of the workÉare not within the exclusive domain of the copyright owner; some are in the public domain. Any individual may reproduce a copyrighted work for a 'fair use'; the copyright owner does not possess the exclusive right to such a use."[38] This legal precedent defined both the technology (the VCR) and the accompanying activity (home taping) to be legally defended by the fair use doctrine.

Also within this case lay the implied status of audio home recording (in the US), for the examination of the relevant statutes by the Judge within the District

Court found that the Sound Recording Amendment of 1971 implied an exemption from copyright liability for audio home recording where the home recording is for private and non-commercial use. [39] This view was codified into the 1992 Audio Home Recording Act, which confirmed that no copyright infringement lawsuit may be brought based on consumers' non-commercial use of digital or analogue recording devices to copy pre-recorded music.[40]

Litman notes that the metaphors used to describe what copyright attempts to achieve have changed and continue to do so, prompted by the persuasive arguments put forward by rights holders trying to increase their share of the value in a work. She argues that in the last 30 years the idea of a balance between the author, publisher and the public, has been superseded by an economic model of copyright law, which provides an economic incentive for the creation of new works.[41] This model identifies a direct relationship between the length and breadth of protection, and the effect this has on production; it assumes that stronger and longer protection would compel more authors to create more new works. Under this model, fair use and exceptions to the author's limited monopoly can only be justified if they compel authors to create. The trend has been a narrowing of the fair use provisions; prior to the 1976 Act, fair use was generally thought to be any non-commercial unauthorized activity. The 1976 Act, which gave rights holders broad protection with only narrow and specific exceptions, while legally codifying fair use, actually served to diminish the public's rights.

Moreover, Litman argues, copyright today is less about incentives or compensation than it is about control. Recently, the content industries have begun to characterize copyright as an international trade issue, in a bid to persuade Congress that the US could generate national wealth by increasing the ability to control the uses of works by cutting back on limitations and exceptions. Through a 1995 White Paper drafted for Congress, and later through the enactment of the 1998 Digital Millennium Copyright Act (DMCA), content owners were granted almost exclusive ability to protect the ways that their works could be accessed in the digital environment. The DMCA endorsed the use of technological protection for digital works, which would dictate the ways in which consumers could use them. It also forbade any device which would circumvent those protection mechanisms. The implications of these developments will be examined in Chapter Three, but they are mentioned here in order to illustrate the expansion of owners' rights at the expense

of the public's rights. Where copyright had always regulated reproduction and distribution, it has now begun to regulate consumption – it is beginning to define and restrict the ways that users are permitted to consume works they have legally purchased. Such developments in copyright, particularly since the 1976 Act, illuminate the changing definition of what is permitted under copyright law; what is a legal unauthorized use, and what use is illegal if it has not been explicitly authorized by the rights holder. The implications are now that if a use is not authorized then it is illegal, and this is the rhetorical weight that the RIAA use to back up their arguments surrounding unauthorized copying, including private non-commercial home copying. What was at one time considered fair use is now deemed illegal, and such activity now comes under the general term of piracy.

Piracy: Old as the Barbary Coast, New as the Internet[42]

> No black flags with skull and crossbones, no cutlasses, cannons, or daggers identify today's piratesÉtoday's pirates operate not on the high seas but on the Internet, in illegal CD factories, distribution centres, and on the street. The pirate's credo is still the same – why pay for it when it's so easy to steal? The credo is as wrong as it ever was. Stealing is still illegal, unethical, and all too frequent in today's digital age.[43]

The RIAA defines music piracy as the "illegal duplication and distribution of sound recordings, comprised of four specific forms: bootleg recordings, counterfeit recordings, pirate recordings and online piracy."[44] Bootleg recordings incorporate previously unavailable material (such as live performances and outtakes), counterfeit recordings are imitations of official releases (the intention of which is to deceive the public into believing it is the genuine article), and pirate recordings present already released material in a new format (such as a compilation of greatest hits).[45] From the RIAA's point of view, then, the industry currently faces two main strands of piracy:

1. Hard carrier commercial piracy: the commercial production and distribution of large numbers of unauthorized CDs and tapes. This is the activity which has always, until now, been associated with the term 'piracy'. This is a growing international problem and appears to be difficult to keep under control.

2. Online piracy: defined by the RIAA as the 'unauthorized uploading of a copyrighted sound recording and making it available to the public, or downloading a sound recording from an Internet site, even if the recording isn't resold. Online piracy may now also include certain uses of "streaming" technologies from the Internet'.[46] This is also international in its nature, but is a non-commercial activity, and looks set to be an increasing problem for the industry to cope with.

Hard Carrier Piracy

The global market for pirated music is officially estimated by the International Federation of the Phonographic industry (IFPI) to have topped 1.9 billion units in 1999, at a value of $4.1 billion, representing 36% of overall global music sales. Underlying these figures is the excess manufacturing capacity of CD pressing plants, particularly in Asia and Eastern Europe; over the past five years, supply has outstripped demand with manufacturing capacity increased by 340%, and in 1999 the number of plants increased by 75 to 660 with the result that an estimated 450 million illegally pressed CDs were in circulation. Additionally, sales of blank CD-Rs world-wide more than doubled to 1.5 billion units, with at least 60 million used for music piracy.[47] Brindley notes that the rise of CD-R sales in Western Europe and the US seems to correlate with a decline in the legitimate market for music in these territories. For example, in France CD-R piracy forms around 12% of the market, while in Germany research suggests that half of all CD-Rs sold in 1999 were used for unauthorized copying of music.[48] There are now 19 territories in the world where over 50% of the market is supplied by illegal sources, the highest priority for the IFPI being China, with a 90% piracy level.[49]

According to the RIAA, the infringement of the owner's rights through piracy has the following effects:

1. Piracy drives up the price of legitimate recordings, thereby affecting consumers.

2. Artists, musicians, songwriters and producers do not receive the royalty payments that they rely on from sales of legitimate CDs and cassettes.

3. Retailers and distributors cannot compete with illegal vendors' prices, leading to less business and fewer jobs.

4. 85% of music released by record companies does not cover its costs. The companies therefore rely on the remaining 15% of successful music to recoup their investments on less profitable types of music, developing new artists, and keeping their businesses operational. The companies therefore lose out as a result of piracy.[50]

Regarding the discourse surrounding piracy, Dr Martin Kretschmer notes that in the field of music and entertainment, the rhetoric of plagiarism, theft and piracy has taken on a particular moral certainty, and that it is a considerable rhetorical achievement for the music industry to have occupied this complex economic ground with such moral language.[51] Lee Marshall also notes that the industry must appeal to the public by couching their piracy rhetoric in moral terms in order to avoid the underlying economic issue, which would garner no public sympathy.[52] It is unclear whether the above points purported by the RIAA refer to the effects of commercial hard carrier piracy or online piracy, or both.

There is no doubt that commercial piracy would appear to have a seriously detrimental impact on the market for the corporations' sound recordings, but the points listed above may be misleading. The first point implies that consumers bear the brunt of piracy through increased CD prices, thereby attempting to turn the consumer's resentment at high CD prices toward the 'pirates'. However, in August 2000 in the US, the Federal Trade Commission found that the five major record companies had used illegal marketing agreements to artificially inflate the prices of CDs and restrict the ability for retailers to offer discounts. It was estimated that consumers had been overcharged by $500 million over the previous four years.[53] High CD prices, therefore, seem to be a result of a pure profit motive on the part of the major companies, rather than attempts to offset revenue losses due to piracy. By maintaining high CD prices in a climate where high prices are resented, the record companies may even be expanding the market for cheap/free illegal recordings. In this light, their attempts to influence public opinion with hollow rhetoric is largely thought to expose them as deceptive and greedy. The second point appeals to the

public's conscience that the creators, who should benefit most from the sale of recordings, lose out as a result of piracy. This disguises the fact that artists receive very little money from copyright. As discussed in Chapter One, revenue from IPR royalties can generate large incomes for those artists who write hit songs, but that excludes most musicians. A 1999 Soundscan survey revealed that just 88 recordings in the US (0.03% of CDs on the market) accounted for a quarter of all record sales, indicating that the remaining 99.97% of artists and musicians earn less than they would have if they had received a fee from the record company.[54] Kretschmer also found that a review of existing data showed that 80% of composers earn less than £1000 per year from performance royalties.[55] Therefore to say that the creators lose out as a result of piracy is again embroidering the truth for the vast majority of artists. The fourth point is an inherent effect of relying on a star system to deliver hit records aimed at the widest possible market, as discussed in Chapter One. It is not an effect of piracy, and despite trying to elicit sympathy for the recording industry's struggle to make ends meet, the major companies are thriving and the industry continues to grow. So although commercial hard carrier piracy is a serious and ongoing problem that the industry faces, the points articulated above seem to appeal to the consumer's conscience in an attempt to camouflage the real effects of piracy: denying the major record companies of additional revenue and profits. In reality it seems that both artists and consumers are continually being disadvantaged by the practices of the record companies, rather than through any effects of piracy.

Online Piracy

The inclusion of MP3 file exchange into the RIAA's anti-piracy efforts is significant because for the very first time, non-commercial consumer activity has been classed in the same category as commercial piracy; individuals, as well as commercial distributors, are now lawbreakers and are liable for copyright infringement suits. The industry's reaction against file exchange criminalized what most individuals considered to be a harmless activity, and it cast into sharp relief the difference in attitudes towards the same activity held by the industry on the one hand, and consumers on the other. While the RIAA used the terminology of 'piracy', 'theft' and 'abuse' ("the Internet culture of unlicensed use means that theft of intellectual property is rampant, and the music business and its artists are the biggest

victims."[56]), consumer rights groups such as the Electronic Frontier Foundation (EFF) invoked the fair use doctrine and used terms such as 'sharing' and 'exchange' which conjured up images of community and reciprocity.

For the music industry, this reciprocity could come at a high price; the popular Napster file trading software, with 51 million registered users, allows individuals to transmit compressed audio files to each other on a personal basis, and in January 2001 alone 3 billion MP3 files were exchanged through the Napster service.[57] The global network has facilitated an unprecedented ease of unauthorized copying and distribution of digital data, making it a high priority concern for the major corporations. For the public though, the stakes are also high, because the moral rhetoric used to justify enforcement of copyright means that the user's side of the copyright bargain rarely gets represented. The expansion of the owner's control over the public's uses of a work means that *any* unathorized use becomes termed as piracy, even if it used to be a legitimate activity. The increasing tendency to control those non-commercial aspects of how consumers use and interact with music recordings is a marked expansion of the rights holder's side of the copyright bargain.

The tension between these two opposing attitudes towards file exchange became apparent in 1998 and grew to a head in 1999 and 2000 as high profile litigation became commonplace in the online music space. For the online music enthusiasts, file exchange gave music consumption a vibrancy, flexibility and excitement that had been non-existent prior to digital transmission. For the industry, it represented a loss of control over their limited exclusive monopoly over reproduction and distribution. The boundary between fair and unfair use was in debate, and would be defined in 2000 when Napster was taken to court.

However, while the allegedly illegal activity was raising significant concern, it appeared certain that online distribution signalled the way forward to the future of the music industry. Therefore the additional anxiety was that rapid acceptance of the MP3 format as a standard for Internet music was establishing a music market on a format which they could not control. MP3 could be easily copied and distributed by members of the public, with no reference to copyrights or royalty administration or distribution. Therefore if it became a dominant format, the corporations would be unable to enter the market due to their inability to enforce their limited monopoly, resulting in an inability to derive revenue. For the limited monopoly enjoyed by the rights owner is granted by copyright, but is often enforced by the *architecture* of the

technology. Up until 1999, for example, CDs were difficult to reproduce and distribute, so the rights owner's monopoly on these activities was upheld, largely by technology. When it became easy to duplicate the digital recordings of CDs by using DAT tape, the industry's employment of the SCMS specification on DAT machines restricted the user's ability to reproduce and distribute copies. Therefore it became imperative that with the emergence of the online market, a format should be developed which would enable the restriction of user reproduction and distribution, which would then enable their entry into the market. Until that time, however, their best efforts were directed towards stifling the growth of the MP3 market in order to buy themselves time to develop their own copyright-enabled, or *secure* format with which they could dominate the online music space. This became a major objective in their anti-piracy campaign, and the techniques that they used to attain this goal are outlined in the next chapter.

Chapter Three: Strategic Responses and the Conflict of Interests

Assessing the Outcome of the Warring Factions

Chapter Two examined how the development of digital technology endowed the music industry with some strategic benefits (such as increased musical fidelity), while the ease of copying and distribution associated with digital audio in conjunction with network technology compromised their ability to control the looming spectre of online file exchange. It also touched upon some issues regarding home taping and the ways in which users perceived their copying activities as being legitimate within their social context. While the legal status of online exchange was in question by both parties, the tensions that became apparent over file sharing illustrate and define the two opposing forces that are bound together yet pull in opposite directions: the supply and the demand for online services. The music industry's business model relied on centralized control and oligopoly, while the Internet facilitated decentralized user access to music and disintermediation. The music industry sought control over their recordings while the Internet users sought ubiquitous access based on the architectural design of the Internet itself.

The concepts of free acquisition and exchange of music easily adapted from the activity of non-commercial home taping to digital file exchange, and also conformed with the Internet culture of free access to information and free acquisition and distribution of goods and services. It also reinforced the building of communities that early Internet pioneers espoused. Although digital distribution points the way to the future for the music industry, the music corporations face the challenge of turning existing music use from a social activity into a commodity or service that consumers will pay for. The flexibility and openness currently associated with MP3 files is something that a technophile community would be unwilling to relinquish; especially a culture that has come to be thought of as anti-authoritarian and anti-capitalist, characterized by the now famous axiom "information wants to be free."[1] The Internet community has come to be thought of by the major corporations as anarchic and lawless, constituted of students, hackers and criminals,[2] while such people thought of themselves as operating in a landscape comparable to the nineteenth-century American West, where "ethics were more important than rules.

Understandings were preferred over laws, which were, in any event, largely unenforceable."[3]

This chapter examines the positions on both sides of the fence. On the one hand there is the Internet culture who are armed with a vast decentralized network of consumers and programmers, and who are native to this landscape; they have evolved alongside, and shaped, the technology, and their culture is rooted within it. Their advantage lies in their ability to work with the technology of the Internet rather than against it. On the other hand there are the major corporations who operate global businesses, and who have come to view the Internet as a new and unexploited market waiting to be tapped. They are investing heavily in the Internet in order to realize the future of the multimedia industries, but have some unresolved problems to overcome in order to ensure the viability of their online operations.

The question is this: will there be a winner in the conflict between the Internet user base and the major corporations, or will a continual struggle of differing interests shape the outcome of online music services over time? The next section examines the cultural background of those people that developed the Internet, and how this influenced the resulting architecture of the Internet itself, both of which inform the ethical background of the Internet user base. This will contextualize the ethical concepts of free access to information, and give some insight into why there is a resistance to corporate dominance on a user level.

The Technical and Cultural Development of the Internet

The basis of what became the Internet was a small computer network built for the US Department of Defence called ARPANET which, by 1969, had four computers connected to it. It was developed by hundreds of computer science researchers funded by the Advanced Research Projects Association (ARPA).[4] They constituted a subculture of unconventional programming experts who wanted to reinvent computing, and were funded by ARPA to develop the technology that would enable different aspects of interactive computing to be realized.[5] The programmers worked as a close-knit community whose skills and resources were pooled, enabling standard network protocols and programming standards to be adopted, and loose structures of control around the network continued to encourage experimentation and further

development;[6] for example, in 1972 electronic mail was developed, motivated by the need of the ARPANET developers for an easy co-ordination mechanism.[7]

In the mid-1970s, computer networks came into existence wherever funding could be found. These early networks (including ARPANET) were purpose-built – that is, they were intended for, and largely restricted to, closed communities of scholars.[8] It took around ten years for the network technology to mature sufficiently for the different networks to be joined together with standard networking protocols, to form the Internet in 1983.[9] Widespread development of Local Area Networks (LANs), PCs and workstations in the 1980s allowed the nascent Internet to flourish, and by 1986 the network was being used by the general academic and research community.[10] Indeed, programs such as JANet in the UK (1984) and NSFNet in the US (1985), were specifically intended to serve the higher education community.[11]

Until this time the networks were being maintained and upgraded with public money, but commercial organizations such as IBM, Merit and MCI began to upgrade these specific networks to higher bandwidth status.[12] In 1989 the World Wide Web (the Web) was initiated at the CERN particle physics laboratory in Geneva, and in 1990 the first Web browser software, Nexus, was developed.[13] Whereas the Internet is the hardware which constitutes the joined-up networks (the cables and switches), the Web is the abstract information space, and browser software are programs which people use on their computers to access information hosted on Web pages using text, hyperlinks and graphics. The Internet was growing so large that it began to outgrow its government sponsors and between 1993 and 1995 networks began to be privatized with traffic being routed through Internet Service Providers (ISPs).[14] In 1995 Netscape was formed, and in 1996 Microsoft directed massive efforts into launching their browsing software, Internet Explorer, marking the entrance of corporate capital investment in the World Wide Web. The network had at first been used by the ARPA researchers, then for military use, then by the scientific community, then by the academic community; now it was the turn of the business community.

In order to contextualize the culture surrounding these developments, Howard Rheingold explains that the personal computer revolutionaries

> *were* the counterculture - they came out of the zeitgeist of the 1960s and embraced many of the ideas of personal liberation and iconoclasm

> championed by their slightly older brothers and sisters. Personal computers and the PC industry were created by young iconoclasts who had seen the LSD revolution fizzle and the political revolution fail. Computers for the people was the latest battle in the same campaign.[15]

The basic elements of what became the Internet were developed by a few specific people who believed that computers could be used to amplify human thinking and communication, and invented ways of utilizing them to this end. These people also wanted to provide this service to as many people as possible, at the lowest feasible cost. They developed the different aspects of the technology outside of their normal working life: computer networks were initiated by a former MIT professor working in a small technical funding office in the Pentagon;[16] Usenet was created by students who decided it was possible for computer communities to communicate with each other without the benefit of an expensive Internet connection; enthusiasts devised Bulletin Board Systems because they wished to transfer files from one PC to another without having to drive from one location to another.[17] The collaborative scientific and academic environment behind the advancement of these technologies allowed them to develop in a way which facilitated collaborative progress – something which can only be effectively achieved with equal and open access to resources and information. Dr Richard Barbrook defines this as the 'academic gift economy'; funded by the state or donations, scientists and academics do not have to turn their intellectual work directly into marketable commodities. Their research and their careers are advanced by collaborating openly, publishing papers and sharing findings, and the network technology was built to maximize the efficiency of the concept that information should be able to flow freely throughout the network without impediment, in order to aid collaboration.[18]

From its earliest days, the free exchange of information has therefore been firmly embedded within the architecture and the social mores of the Internet. Just as the ARPA researchers pooled their knowledge, skills and resources to create the first networks, the Internet continues to grow because of intellectual work that skilled programmers have given to the Net community. The model of the academic gift economy is still used as a basis for the collaborative development of Internet technology; programmers have continued to create powerful tools and to give them to the Net, in an effort to expand its availability and increase its functionality.[19] For

instance, Unix is an operating system developed by a community of professional programmers who built Unix tools for other programmers to use. The source code is freely available for software developers, and has evolved as a result of a pooling of expert knowledge by professionals who have improved and added functionality over time, to the benefit of the overall programming community. Apache, too, is a free server software built on the Unix platform, developed in the same way, and is the most widespread server software in operation today.[20] The Free Software Foundation (FSF) are idealists who advocate this model of software development. On their Web site the author states, "My work on free software is motivated by an idealistic goal: spreading freedom and co-operation. I want to encourage free software to spread, replacing proprietary software which forbids co-operation, and thus make our society better."[21]

With reference to free software, they state their philosophy as being the user's freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

Freedom 0: The freedom to run the program, for any purpose.
Freedom 1: The freedom to study how the program works, and adapt it to your needs.
Freedom 2: The freedom to redistribute copies so you can help your neighbour.
Freedom 3: The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.[22]

The architecture of the Internet which, through the cultural background and the professional environment of those who created it, was built to maximize the freedom of access to information, has continued to nourish an ethic of community tool building and knowledge sharing. Through the architecture and the social mores of cyberspace, the academic gift economy has been updated into a modern high-tech gift economy, nurturing a culture which operates independently of the self-serving interests of capitalist corporations, of proprietary software and market competition; a culture which advocates the free exchange of work, and which demands freedom of expression, freedom of access to information, and the obliteration of censorship of any kind. Barbrook notes that although many users may not politically align themselves with any such ideals, most contemporary users of the Internet participate

in acts of 'anarcho-communism' for purely practical (as opposed to strictly ethical) reasons; the giving and receiving of information without payment is almost never questioned, and people contribute to the vast collective knowledge accessible on the Internet even for selfish reasons such as self-promotion. The high-tech gift economy is the best and most practical way to collaborate, as well as to achieve recognition for one's work.[23]

In musical terms, the gift economy informs the massive rise of sites such as MP3.com and Peoplesound, where thousands of musicians allow public free access to their music. The gift economy, in conjunction with the freedoms associated with the popular MP3 format (such as the ability to download, copy, transfer and send files) also informs us as to why services such as Napster became so popular. The culture of free access to information had voiced an active demand for online music (proven by the popularity of the MP3 search term), which the record companies had not been able to fulfil, and so programmers from within the Internet culture itself produced services which supplied an obvious demand, enabling free access to music.

From Intellectual to Economic Investment on the Net

Whereas the developers of the network technology and the Internet's early user base had a primarily intellectual investment in the network, the success of the Internet attracted an increasing number of stakeholders who have an economic investment in it.[24] In the private sector, telecommunication companies, television networks, computer companies, cable companies, and media companies in the United States, Europe and Japan are bidding for a position in the nascent 'home interactive information services industry'. Corporations are investing billions of dollars in the infrastructure for new media they hope will make them hundreds of billions of dollars.[25] The emphasis on the Net has shifted from merely an information, knowledge and community based medium, to a commercial one as well. Since developments in computer and network technology enabled the delivery of audio and video over computer networks, the Internet is changing not only the practices and strategies of media corporations as they try to grapple with the future of the entertainment industries, but it is challenging existing power relations between content producers and consumers. As corporations merge and acquire one another in a bid to control the changing media space, individual users have become empowered

by new technologies in the ways in which they interact with content and with each other. How will this conflict of interests between corporate capital and the user's freedom of access to information be resolved? The prevalent culture of the gift economy in conjunction with the network architecture have several implications for the future market for music online:

1. They encourage information/content sharing, which has resulted in the large scale exchange of unauthorized music files.

2. They assume that the owner's limited monopoly on reproduction and distribution of a work is obsolete; the notion of controlling how many copies of a work are made becomes irrelevant as technically every act on a network involves copying material from one computer to another for reasons of technical efficiency and reliability (such as caching and browsing).[26]

3. They make enforcement of copyrights and payment for content problematic due to the ease of copying and redistributing unauthorized music files, as well as the ability to acquire either similar or identical content elsewhere for free. Enforcing copyright on an open network represents the imposition of scarcity on a technical system designed to maximize the dissemination of information.[27]

It appears to be extremely difficult to operate a successful commodity-based business model for fluid content in the online environment. In the music market, Scour.com, Atomic Pop, SpinRecords.com, iCast.com and Riffage.com all folded in 2000. Even Emusic's resolute attempt to build a legitimate system for the sale of digital downloads has proved to be difficult to maintain, and this may in part stem from the fact that free music has been so easy and convenient to share and copy through Napster-style services that fewer people are prepared to pay for it. Will the corporations succeed in implementing their commodity-based business model in the online environment where the start-ups failed, or will the Internet favour the gift economy? The implications of the above information seem to suggest that there are some major barriers to success for copyright-compliant content. These include: network architecture, the prevalent culture of free access to content, MP3's almost ubiquitous market penetration, and the lack of restrictions and IP control associated

with the MP3 format. Nonetheless, although the music industry may seem to be compromised in the online environment due to the architecture and culture of the Internet, they have several powerful tools at their disposal with which they intend to implement their business strategies. The most visible of these has been the industry's anti-piracy campaign aimed at the online 'pirates'.

Strategic Responses to Counter Piracy

The ability to regulate online file exchange seemed an impossible task, but the industry had to adopt strategies to quash it against all odds if they wished to try and impede its growth. Both the IFPI and the RIAA responded to the threat of piracy by creating a global anti-piracy structure, and the strategies adopted consisted of education, enforcement, litigation, and developing new technologies.[28]

1. Education:

This took the form of a campaign called *Soundbyting*, which attempted to provide students, schools and colleges with the core materials for promoting discussion and awareness of the issues surrounding copyright and music on the Internet.[29] It was hoped that the information provided to students would decrease the number of students using their college servers to store illegal files, and the RIAA Web site claims that it has resulted in a 40% drop in the number of music sites on University servers offering illegal downloads.[30] However, subsequent to the campaign's inception in 1999, several college campuses became the focus of illegal Napster activity as large numbers of students used high bandwidth networks to exchange files, with the result that litigation was brought against three US college campuses. This suggests that the campaign has met with mixed success to date. Additionally in 2001 the Motion Picture Association of America (MPAA) focused a campaign on college networks to combat the trading of illegal movies using the Gnutella file trading service.[31] The ongoing illegal activity over college networks signifies that the attempt to educate young people to abandon their usage patterns and abide by copyright laws which serve corporate interests is a formidable task indeed.

2. Enforcement:

The initial reaction to the growth of online piracy in 1998 and 1999 was to close down sites hosting the unauthorized content. In a pilot project intended to carry out this objective, the IFPI and the RIAA used high tech automated web crawlers to find infringing sites wherever they existed, and then co-ordinated action throughout the world to eliminate sites containing infringing files. The IFPI alerted the National Groups (such as the Performing Rights Society [PRS] in the UK) in the countries where illegal sites were located, who then contacted the service providers to notify them of their hosting illegal music files, and to inform them about the legal implications of their activities. During this pilot project, the results proved to be positive: in many cases, the service providers either contacted the Web site operators and asked them to close down the site, or they blocked access to that site. Where this approach was unsuccessful, cease and desist letters were issued; within several weeks most of the above mentioned sites were down. The problem, however, was that as soon as one site was closed down, another one appeared in another location. Despite the fact that during this project sites containing tens of thousands of illegal MP3 files were shut down, the number of *locations* where these files exist increased by 50%.[32] Although the IFPI stated that their aim was to reduce the problem by 80% by the end of 1999, action of this kind will never achieve the desired objective simply due to the fact that it is so easy to transmit fluid information from one country to another, to copy it, or still have control over it, without actually possessing it.

3. Litigation:

Litigation has proved problematic. The RIAA state that since 1998 they have settled five lawsuits against Internet music pirates that violated federal copyright laws by reproducing and distributing copyrighted sound recordings without authorization.[33] However, this is not the major coup that they require to reduce the problem by their target of 80%. In a situation where it is so easy for defendants to exchange their personal music files in anonymity, through decentralized services such as Gnutella and Freenet, this kind of coercion becomes very difficult to maintain, and compliance almost impossible to enforce. However, the RIAA have engaged in

several high profile lawsuits with varying success, including Diamond Multimedia, FAST Search and Transfer, MP3.com, Scour and perhaps most notoriously to date, Napster. It is crucial to investigate and analyse such cases, as decisions made by the legal system often provide precedent decisions as to how technology may be allowed to interface with the law.

RIAA vs. Diamond Multimedia Systems Inc.

In October 1998 the RIAA and the Alliance of Artists and Recording Companies (AARC) filed a complaint against Diamond Multimedia, a consumer electronics company who produced the 'Rio', the first portable device capable of MP3 playback. The Rio was a hand-held MP3 player smaller than the size of a cassette that stored up to 60 minutes of 'digital quality' sound in solid state flash memory.[34] It was designed to transfer music in MP3 format from a computer's hard drive to the Rio's internal memory cards, and thereafter to play the music through attached headphones.[35] The Rio itself did not convert CDs into MP3 format – this function required separate software, such as the Music Match Jukebox, which was bundled with the Rio; the consumer could install the Music Match software on their computer, which they could use to convert their CDs and audio files to MP3 files.[36] They could then transfer those files to the Rio's internal memory card for mobile playback. The plaintiff's lawsuit stated that because the overwhelming majority of MP3 music files on the Internet were unauthorized and infringing, the Rio would facilitate and encourage the unlawful trafficking of infringing MP3 music files, resulting in irreparable and incalculable damage.[37] The RIAA also argued that the device should be governed by the 1992 Audio Home Recording Act (AHRA) and as such it should incorporate Serial Copy Management System (SCMS) or its functional equivalent. As it did not incorporate SCMS, it violated the AHRA.[38] Moreover, under the AHRA, AARC's members are liable to certain royalty payments pursuant to the AHRA. As Diamond were not paying any royalties they did not comply with the AHRA. Nor had Diamond registered with the Copyright Office.[39]

As discussed above, the AHRA was enacted to restrict the transfer of digital audio from one digital recording device to another, through imposing certain conditions on the manufacture of such devices: that the manufacturer files notice

with the Register of Copyrights, pays royalties on each such device, and incorporates SCMS into the specifications for the device.[40] It does not, however, govern computer-based audio products. Clearly the responsibility of the courts was to decide whether the Rio could be defined within the AHRA.

Diamond's response was to clarify the purpose and capabilities of the Rio. They stated that it was a computer peripheral device designed to store and play back audio files transferred from the computer's hard drive. The Rio was not a duplicating device. It was not capable of facilitating the serial copying of recordings. It was not capable of 'uploading' files to a computer or the Internet. It was not an archiving device. It had no audio content output capability whatsoever, except for an analogue signal sent by the Player to the headphones to generate the sound that the user hears. The Rio did not itself perform any recording function. It was incapable of receiving audio files from a digital audio recording device or from a transmission. It merely stored the files and played them back.[41] Due to the price tag of $199 and added memory at $100 per hour it would not be used as a means of archiving audio files, rather for temporary storage and playback in a mobile setting. Diamond also specifically advertised its relationships with legitimate Internet music distributors, such as MP3.com, Emusic, and MusicMatch. They argued that armed with these facts it would be unreasonable to claim that the Rio encouraged the unlawful trafficking of infringing MP3 music files.[42]

In order to examine the technical legal issues involved in the case the judge set another hearing for ten days' time, granting a temporary injunction halting production of the Rio during that period. At the second hearing, however, the judge ruled in favour of Diamond. Judge Audrey Collins distributed a 19 page tentative ruling expressing her rationale for denying the RIAA's request for a preliminary injunction. Some of the main points were:

Factual background: "The material facts of this case are undisputed.... Notably, the Rio has no digital audio output capability, and therefore is incapable of passing on digital musical files to other Rio devices, or to other manufacturers' devices." (Page 1) [43]

Digital Audio Recording Device: The Judge examined the legislative history, the purpose and intent of the AHRA, whether music files stored on a hard drive are exempt, and whether independent recording capability was required. The Judge

concluded (no single quote) that the Rio probably would be categorized as a Digital Audio Recording device (pages 7-14).

SCMS Requirement: "Incorporating SCMS into the Rio, however, accomplishes nothing.... Similarly, it is undisputed that the Rio does not permit downstream copying because the Rio itself has no digital output capability, and the removable flash memory cards cannot be copied by another Rio device. In summary, incorporating SCMS into the Rio appears an exercise in futility. Because a Rio with SCMS would not violate Section 1002 [of the AHRA], and because a Rio without SCMS is functionally equivalent to a Rio with SCMS, the Court is convinced...that the Rio adequately 'prohibits unauthorized serial copying' for purposes of subsection (a)(3)." (page 15-16)

Irreparable Injury: "Plaintiffs contend that distribution of the Rio in its current configuration 'will harm plaintiffs and the public interest by dramatically stimulating the traffic in illegal MP3 files'....the Court concludes that Plaintiffs have failed to establish any irreparable or incalculable injury." (page 18)

This decision clarified and defined the way in which computer-based audio hardware and software fall outside of the AHRA. The legislation which had been designed to regain control over digital recordings had been rendered obsolete in controlling digital audio files and therefore was useless in the fight against online piracy. However the Rio had seemed an odd target in the industry's attempts to curb piracy, as the connection between a computer audio hardware device and the facilitation of trafficking in unauthorized audio files was a tenuous one; the Rio was only a playback device and as such could only encourage piracy as much as a conventional cassette "Walkman" encourages home taping. By proceeding with litigation pursuant to the AHRA without entering into discussions with Diamond, they proved their technical ignorance as well as their arrogance. Hilary Rosen, president of the RIAA said, "The only reason for the action against Diamond is they are jumping the gun to exploit the pirate market instead of waiting and working toward the legitimate market."[44] Cary Sherman, senior executive vice president and general counsel for the RIAA said:

> What we think will really be damaged and perhaps be killed is the nation's market for a digital distribution infrastructure...We can't have a digital distribution that's commercially legitimate coincide with an illegal market

> where the same material is available for free. We're very concerned [Diamond is] going to kill off digital distribution before it's been born.[45]

It seems that the RIAA accurately assessed the problems that their lack of control over the redistribution of unauthorized files would pose, but that they wrongly assessed Diamond's role in the proceedings. Diamond's counterclaim in response to the RIAA stated:

> Diamond Multimedia responded to the RIAA's concerns and incorporated SCMS into the Rio, even though it was not required to do so. The RIAA's continued pursuit of this lawsuit, in light of Diamond's incorporation of SCMS into the Rio, makes clear that RIAA's real goal is stopping the legitimate MP3 market...MP3 is an open industry standard for legitimate distribution of music and the RIAA's efforts to brand everyone associated with this new open technology as pirates, is intended to preserve the RIAA members' control over music distribution.[46]

Here Diamond made a distinction that the RIAA had not: that a legitimate market for MP3 files existed in the thousands of authorized files available from sites such as MP3.com, RioPort,[47] Emusic,[48] and Peoplesound,[49] but that it did not serve the interests of the established recording industry. Diamond also identify the industry's strategy to impede the development of the legitimate market for MP3 media and maintain its control over distribution. This raised several questions: was the music industry concerned that a market for independent music might flourish over which they had no control? Would musicians be able to create and distribute their music without the need for record companies? Did the new distribution medium challenge the control that the five major companies currently enjoyed over traditional distribution? And perhaps most significantly, was the music industry opposed to the MP3 format because they feared it would quickly become a popular and established format for online music when it was impossible to regulate its use?

It is unlikely that the music corporations were concerned that they might become redundant in a thriving future independent music market; the Internet and the libertarian ethics of its users were unsettling for the capitalist record companies in 1998, and the rhetoric of new online music labels like Atomic Pop was aggressive

and bold, threatening to dismantle the traditional music industry in favour of a more just and equitable one.[50] However, speculation that artists could be united with their audiences without the need for traditional intermediaries, while true of thousands of artists on the Web, did not immediately threaten the dominance of the major record companies – they still controlled the rights to 80% of the global commercial music market, and as far as they were concerned, the 'legitimate' MP3 market consisted only of amateur recordings anyway.

The over-hyped possibilities of an artist's label-free utopia may have borne some fear through ignorance on the part of the record companies, but the real threat lay in the unexpected rise in popularity of the MP3 format. It became immensely popular very quickly, and at a time when the major companies were only just beginning to take notice. If this file format became the established standard for the online delivery of music, then digital distribution could hold no financial reward for them; they were unable to control its use, and unlimited and unauthorized copying and redistribution threatened the market for major label music, in the same way that the legitimate market for phonograms had been supplanted in territories such as China. Additionally, once MP3 had become so popular, it could prove very difficult to introduce and establish a secure and controllable format in the future.

Another concern for the industry may have been that their dominant position as publisher in the copyright triumvirate of artist, publisher and the public had traditionally relied on the corporations' exclusive access to and ownership of a global distribution infrastructure. For artists wishing to disseminate their work, the only realistic option would be to employ a publisher who had access to this infrastructure, and so the publisher enjoyed a strong negotiating position allowing him to acquire a substantial portion of the IPR in a work, from which he could subsequently derive revenue. However, once online distribution became viable using MP3 files, artists could become more empowered, thereby weakening the labels' bargaining position. Traditional distribution could therefore became less crucial, and the label's ability to derive revenue through IPRs may also have suffered.

Since the case against Diamond in 1998 the representatives of the recording industry have been actively seeking out and taking legal action against any companies which appear to infringe the rights of their member companies. In January 2000, MP3.com developed two services which came under threat from the RIAA. Firstly, the 'Instant Listening Service' allowed customers to listen

immediately to streaming MP3 versions of CDs they had newly purchased from online retail partners, and secondly, the 'Beam-It' service allowed a user to insert a CD from his home music collection into the CD drive on his home computer; the user was then able to listen to an MP3 copy of that CD via the Web, from any location.[51] MP3.com purchased around 45,000 CDs which they used to make copies of in order to provide both these services, and the RIAA successfully alleged that MP3.com violated the rights of the copyright holders under Section 106 of the U.S. Copyright Act of 1976 by making and distributing unauthorized and unlicensed copies of the works.[52] MP3.com settled disputes with the major record companies through a licensing agreement which permitted MP3.com to continue the service; four of the major record companies received around $20 million each for such a license, while Universal demanded around $118 million but settled for $53 million.[53]

A & M Records inc., et al. vs. Napster inc.

As briefly alluded to earlier in the chapter, a collaborative file-sharing program called Napster became available on the Internet in November 1999, which enabled users to log on to the Napster network and search for and download files which reside on other users' computer hard drives. Its use was aimed squarely at sharing MP3 music files: the site claimed that "Napster is the simplest way to find the MP3s you want, whenever you want, and share them with the world's largest community of music lovers... ever"[54] also claiming that it was trying to promote unknown bands in a similar manner to MP3.com. However once users had downloaded the Napster software and logged onto the company's servers, their personal MP3 collections – which could include copyrighted material – became available for download by any other users simultaneously logged on. The RIAA quickly became concerned that the software facilitated piracy through the trading of unauthorized music files, and in December 1999 filed a suit against Napster for 'contributory and vicarious copyright infringement',[55] adding that the site was 'operating a haven for music piracy on an unprecedented scale'.[56]

The RIAA contended that Napster was well aware that virtually all of the reproductions and distributions it enabled and encouraged were infringing copyright, and that Napster's conduct had caused and continued to cause the plaintiffs grave and irreparable harm.[57] The suit claimed damages of up to $100,000 per copyright

infringement, with expected damages to reach over $100 million.[58] The RIAA's concern was the same as that expressed against Diamond a year earlier: that, following their experience of hard carrier piracy where in some countries the legitimate market had been supplanted in its entirety, Internet piracy posed risks to the development of a legitimate *online* market for digitally distributed music, which was just beginning to emerge. If left unchecked, they said, Internet piracy of sound recordings would mushroom, and could hinder the legitimate market for digital distribution before it had a chance to be successful.[59] In addition, the rock band Metallica filed suit against Napster in April 2000 after finding that recordings of unfinished and unreleased works were available on Napster. They also filed suit against three college campuses for allowing large amounts of students to use the Napster service over their networks. Rap artist Dr Dre also filed suit against the service.

Napster's first line of defence against the RIAA was that it should be given 'safe harbour', citing a provision under section 512(d) of the 1998 Digital Millennium Copyright Act (DMCA) which excludes Internet Service Providers from liability for illegal activity occurring on the site. However, this was overturned on the basis that service providers must implement a policy providing for termination of the accounts of users who violate copyright laws, a policy which had not been adopted by Napster.[60] The next line of defence was to plead fair use by quoting the case of *Sony Corp. of America v. Universal City Studios* (1982), where copyright owners had sought to halt the sale of VCRs because consumers used them to engage in unauthorized copying of copyright-protected programming. The Supreme Court had ruled that where a technology functioned as a tool for infringement but was capable of significant non-infringing uses, supplying the technology to consumers did not violate the law. Allowing an injunction to issue in such a case, it continued, would not serve the public interest in access to the technology.[61] The Napster defence implied that since there were substantial non-infringing uses for the technology (such as promotion of independent artists and space-shifting[62]), the service should not be shut down. However, the court found that any potential non-infringing use of the Napster service was minimal or connected to the infringing activity, or both. In addition, when Napster use was weighed against the four-factor test for fair use, the court found in favour of the music industry.[63] Nor could the defendants adequately defend themselves on issues of piracy. The defendants also

attempted to argue that under Section 1008 of the Audio Home Recording Act (AHRA) the actions of its users were immunized from litigation for copyright infringement, thereby protecting the file-sharing network. This argument was thrown out on the basis that the AHRA was implemented to protect non-commercial consumer use of digital audio recording devices such as DAT tape decks, to perform 'home taping' of musical works.[64] As found in the Diamond hearing a year earlier, the AHRA excludes software-based systems.

The court also found that the effect of Napster on the market for the Plaintiff's copyrighted works was detrimental and caused irreparable harm. In support of this claim they relied heavily on a report prepared for the Plaintiff by the Field Research Corporation, which found that 41% of Napster users indicated that its use displaced CD sales, while 22% said that they used Napster *in order to purchase* fewer CDs. It also stated that 46% of Napster users purchased less than 10% of the songs they downloaded which they did not previously own.[65] They also relied on a report produced by Soundscan which presented retail data indicating that online file-sharing resulted in a loss of album sales within the college markets where Napster use had been most prevalent.[66] A report prepared for the Napster defence by Peter S. Fader was deemed unconvincing in its conclusion that Napster use stimulated more CD sales than it displaced, and during the hearing other evidence to support Dr Fader's report was unavailable for review. Nevertheless there have been several research studies undertaken by independent analysts which indicate that the link between Napster use and displaced CD sales is less clear cut. For example, Jupiter Communications found that Napster users are 45% more likely to increase their music spending,[67] while a study by the Yankelovich Partners surveyed 16,000 Americans, of which 59% who said they heard a certain piece of music for the first time while online ended up purchasing that music as a CD.[68] A Cyber Dialogue report found that the number of people accessing music-related content increased by 48% in three months, and are on average spending annually $100 more than the average online consumer.[69] And Pew Internet & American Life produced a report which found that although Napster use is popular with students, 42% of respondents were between the ages of 30 and 49,[70] bringing into question the validity of the plaintiff's focus on students as the key demographic. Additionally, when using the Soundscan report to account for decreased sales at shops near college campuses, figures for online CD sales at retailers such as Amazon and CDNow had not been

taken into account, even though revenues of both sites had increased by around 100% over the previous year's earnings.[71]

Given the large body of research conducted on the topic, the court may have relied on a disproportionately small research sample to conclude their findings, in an area where conclusive findings are fraught with contradictions and inconsistencies. Additionally, a report prepared for the defence by Robert Hall concluded that shutting Napster down would have no effect on plaintiff's revenues due to the evidence that Napster use promoted CD sales, as well as that users would simply go elsewhere to share MP3 files – both Gnutella and Freenet provide services similar to Napster with the added attraction that, due to the nature of their architecture, they would be almost impossible to shut down and users would be anonymous.[72] The validity of many of the reports are difficult to assess as they attempt to map consumer behaviour which is rather vague in its translation into economic impact. Even solid statistics (such as the Soundscan report) are not as clear cut as they may seem, and neither Plaintiff's nor Defendant's position on the realistic effect of such file exchange can yet be verified; the RIAA's view that every file exchanged is a lost sale is a largely unfounded theory, while the idea that file exchange promotes experimentation and stimulates sales has not been statistically proven either. These debates return to the same issues surrounding home taping, which themselves have not been settled after over twenty years. However, as noted above, and as the reports by Jupiter, the Yankelovich Partners, CyberDialogue and Pew Internet & American Life appear to confirm, file sharers are music enthusiasts who actively consume and purchase pre-recorded music alongside their copying activities. Although the judge ruled in favour of the music industry by granting an injunction, appeals judges said that "having raised substantial questions of first impression going to both the merits and the form of the injunction, the emergency motions for stay and to expedite the appeal are granted."[73]

Cases such as *Napster*, *Diamond*, as well as *Sony* demonstrate the conflicts of interest that continually exist between IPR holders, technology companies and consumers; differing economic and social interests are mediated by technology, and balanced by the law. Legislation has been continually updated in attempts to balance these interests – the AHRA balances the right of consumers to perform home taping with those of copyright holders to protect the serial copying of their work through the SCMS and royalty system. The fair use doctrine in the Copyright Act balances

the monopoly that IPR holders exercise over their works, against, for example, the consumer's right to use their VCRs in a certain way as demonstrated in *Sony*. As technologies emerge the wranglings in the courts define how technology is legally allowed to advance and how its intended and unintended uses relate to the rights of IPR holders. However, the application of copyright law to online services is becoming an extremely complex issue. Copyright law protects the rights in *physical* expressions and products, and the application of software, services and digital information to such a law is problematic. For example, the AHRA applies to physical products (such as DAT machines and tapes), not software products. Furthermore, when Napster lawyers pleaded fair use by quoting the *Sony* case, the RIAA's lawyers countered by saying that the *Sony* case differed from this one in that VCRs are physical products, not an online service. Napster lawyers countered this by saying that the service and the hardware are inseparable; without the company servers, the service could not exist.[74] Moreover, it is difficult to enforce the exclusive right to reproduce and distribute, when both of these activities are necessary functions of a communications network. The US Digital Millennium Copyright Act of 1998 (DMCA) was brought in to cope with some of the problems that the Internet was catalysing, imbuing IPR holders with increased rights and technical controls to protect their works.

The judge felt that the case against Napster was valid – that they facilitated copyright infringement, that Napster could not invoke the fair use doctrine as it did not engage in sufficient substantial non-infringing uses, that the effect of Napster on the market for Plaintiff's copyrighted music caused irreparable harm, and that Napster was not protected under the Audio Home Recording Act (AHRA). The conflicting body of evidence suggests that it may simply be too early to tell whether the market is hindered or helped by file sharing, and whether the growth of the music industry is despite or because of such activity. However, of particular significance to the arguments put forward so far is the issue of how fair use is defined within an online global network.

The Napster defence implied that the system was being used for substantial non-infringing uses, such as promotion of independent artists, space-shifting,[75] as well as 'private non-commercial sharing of music by consumers'.[76] The court, though, found that any potential non-infringing use of.the Napster service was minimal or connected to the infringing activity, or both. In addition, when Napster

use was weighed against the four-factor test, the court found in favour of the RIAA.[77]

The significance of this opinion is that it dismissed the relevance of such an important case as *Sony*, which provided a strong case for fair use by specifying that as long as a technology was *capable* of non-infringing uses then it should not be outlawed. The decision to outlaw such a new, promising and innovative technology was met with quite some controversy. In response to the Napster court's failure to uphold the strong constitutional ethics which had been displayed in *Sony*, a consortium of 18 copyright law professors filed a brief supporting reversal of the injunction, stating that:

> Outlawing a useful technology merely because many people use it as a tool for infringement will rarely promote the progress of science and the useful arts. Only when the technology is not capable of legitimate uses does it make sense to outlaw it...Copyright owners' interests in maintaining control over their works are very important, but not so important that society must forego useful technology *capable* of substantial non-infringing uses in order to protect those interests. That is the lesson of the Supreme Court's decision in *Sony*...The decentralized model of peer-to-peer networking poses a significant challenge to sectors of the entertainment and information businesses that follow a model of centralized control over content distribution. However, this is not the sort of challenge that copyright law is designed to redress. The district court's ruling would ban a new technology in order to protect existing business models, and would invoke copyright to stifle innovation, not to promote it.[78]

Napster only really consists of technology which enables users to search and log onto one another's hard drives – what has come to be known as Peer-to-Peer (P2P) technology.[79] P2P networks are considered by many to herald a major advance in Internet technologies; Patrick Gelsinger, chief technology officer of Intel's architecture group, said Napster and other peer-to-peer networking technologies are "a revolution that will change computing as we know it"[80] likening its development to that of early Web browsers which revolutionized the ways that people used the Internet. Several service sectors can envisage substantial uses for this technology,

including relief of network congestion, improved searching on the Web, as well as the sharing of useful and legitimate information.[81] Therefore, although Napster itself has been used for illegal activity, the technology is *capable* of non-infringing uses.

Lawrence Lessig, Law professor at Harvard, prepared a report in order to assess the feasibility and effectiveness of regulating the Internet through an injunction banning Napster-like technologies. Again, he counsels the Court to be wary of banning such a promising technology;

> What mix of law and technology will best protect the legitimate state interests at stake, without undermining the free speech and creativity that the Internet makes possible? It would be a mistake...to judge an Internet technology based on its current use, or to ban a technology based on its initial use, even if significant violations of copyright were enabled. If that had been the test, then many of the early Internet technologies would have been banned. Likewise would the VCR have been banned, and possibly even the Xerox machine. Instead, as the Supreme Court has indicated both in *Sony* and in *Reno*, important constitutional values counsel a much more balanced and informed response. An early use of an Internet technology often has very little relation to its ultimate use.[82]

The consortium of copyright law professors contended that the court had applied an inappropriately narrow view of fair use to the case, and as such had made a crucial and far-reaching definition of piracy and fair use in the online environment. Not only was the technology's ability to perform non-infringing functions in question, but also the very nature of the Napster-mediated exchange. Although (offline) non-commercial personal use has traditionally been thought to fall within fair use, as made explicit in the *Sony* case and later codified in the AHRA, this was not so here. The Ninth Circuit Court had held that consumers were legally permitted to *make* MP3 files, in consistency with the privilege to *time-shift* programs with a VCR; it was the act of *sharing* those files that was under scrutiny here. The aspect which makes online sharing problematic is that it involves multiple reproduction as well as transmission. If that one-to-one Napster-mediated transmission was considered a public performance then it would violate the owner's rights to control public performances. If it was a private performance then it would be more difficult to

define as an infringing activity.[83] The final decision by the courts upheld the claims by the recording industry that Napster-mediated online exchange was illegal, and that the activity was not permissible under either fair use or non-commercial, personal use.

Reaching a balanced decision regarding fair use in the online environment is extremely problematic due to the fact that the potential for instantaneous global transmission of information actually extends the barriers of what users can do with copyrighted information. In a climate where control by the copyright owner to determine every use of his work is expanding, an increase in unaccounted consumer usage appears to violate the owner's rights all the more. There is therefore a discrepancy in the perceived border which defines the parameters of the owner's limited monopoly, and the consumer's statutory rights. Consumers perceive this border to be expanding to their benefit with the new technology, while content owners consider that their own interests should be protected all the more due to the increased ease of copying and distribution.

There is no doubt that the widespread availability of information on a personal basis over a global network has some substantial implications for the supply and demand of online music services. But the significance of this decision is that it officially defined online exchange as piracy, formally marking the point at which the consumer's statutory rights infringe upon the owner's limited monopoly. The decision to criminalize what was once a legitimate activity is a crucial legal precedent that weighed heavily in favour of the music industry, and clarified the legal status of millions of ordinary people who enjoyed engaging in such an activity. What is also of significance is that this legal precedent is likely to have practically no effect on the file sharing activities of those millions of users, who will probably just go elsewhere for their free music.

What are the implications of this for the struggle between the opposing forces of the centralized music industry and the decentralized Internet community? The industry has had its legal position strengthened by this decision, but it is difficult to determine whether it will actually have any effect. The game of cat-and-mouse (while being a necessity in that the industry cannot adopt a *laissez-faire* attitude towards what they see as piracy) begins to look like a Tom and Jerry script where the aggressor tries to enforce his dominance through sheer strength, while the hunted is perpetually able to outwit the former through cunning and agility. Industry now has

the law on its side (in the form of the DMCA as well as Napster-style legal decisions), while consumers have the advantage of the technology which permits anonymous, decentralized and unenforceable transmission and reception of information. However, the development and introduction of new technology which increases the copyright holder's ability to control usage is another strategy pursued by the music industry in a bid to control unauthorized uses of their works.

4. Develop New Technologies: The Secure Digital Music Initiative

As well as being part of an anti-piracy strategy, the SDMI was a positive step forward for the industry. With the goal of creating their idea of a legitimate market for digital distribution, in February 1999 the recording industry formed alliances with several different business sectors to form the Secure Digital Music Initiative (SDMI).[84] It incorporated more than 180 companies and organizations representing a broad spectrum of information technology and consumer electronics businesses, Internet service providers, security technology companies and members of the world-wide recording industry. Its purpose was to act as a forum for these industries to develop the voluntary, open framework for playing, storing and distributing digital music necessary to enable a new market to emerge.[85] Their first goal was to develop a portable device (PD) specification that would enable SDMI-compliant devices to play any file that was legitimately SDMI-encoded, but reject a file that had been illegally copied or distributed.[86] This could be achieved through watermarking technology within the audio file, and screening technology within the playing device. 'Watermarking' is a cryptographic technique that encodes information into the file itself about the source and owner of that file, which can be read by the playing device. 'Screening' provides a mechanism within the device to detect whether an audio file has been legitimately or illegitimately copied or distributed. Also the transfer of content between devices (for example, from personal computer to PD) would be done in a manner that maintained the protection afforded by the SDMI specification.[87] Once the PD specification had been achieved and implemented, the longer-term effort was working toward completion of an overall architecture for delivery of digital music in all forms.[88]

As the *Diamond* case established that the PD specification would not be covered by the AHRA, participants became involved on a voluntary basis through a

mutual desire for a coherent model for digital distribution. Manufacturers of PDs such as Diamond, Creative Labs, Sony and Thomson became part of the initiative and agreed to implement SDMI into their devices as and when it became available, *if* it proved to be a consumer-friendly format; if the specification proved to be complicated for consumers to use then they would reject it, as consumers, not record companies, were the device manufacturers' most important clients.[89]

The PD specification outline was announced on the 28th June 1999.[90] This was the latest possible date which would allow participating manufacturers to produce first generation SDMI-compliant devices in time for the Christmas season. This may indicate that, as noted above regarding the *Diamond* case, the music industry felt that the insecure MP3 format may penetrate the online music market to such an extent that it could hinder the ability for the industry to successfully introduce a secure format. The sooner the secure format was introduced to devices and the public, the better chance it had of achieving popularity. Jeff Scott of Thomson consumer electronics said of their SDMI-compliant portable device, the Lyra, "There's no way we were going to miss Christmas to have this ready," even though the SDMI specification had been changed at the last minute.[91] However, Leonardo Chiariglioni, executive director of SDMI, said that the Christmas holiday deadline was "more symbolic. I don't think it's really an issue," and Mark Hardie from Forrester Research stated in October 1999 that the MP3 player market was still in its infancy.[92]

It is necessary here to analyse the proposed SDMI specifications in order to assess the benefits of current SDMI technology and what it intends to offer consumers in the future.[93] This may provide some insight as to whether consumers will consider secure audio worthwhile or not. The screening technology incorporated into PDs is specified in two phases to expedite the time to market of SDMI-compliant components.[94] The Phase One screen is only capable of detecting the *"upgrade to phase two"* trigger that is embedded into the SDMI-compliant audio file. This trigger will be activated at a particular time by compliant audio files. The devices incorporating Phase One will play both compliant and non-compliant audio files. Once the trigger is activated, compliant audio will be rejected until the user upgrades the device to Phase Two.

The Phase 2 screen has not yet been defined, but it is expected that at minimum it will determine whether content has the SDMI phase 2 mark embedded

in it and if so, whether it has been previously compressed. This will enable content providers to mark such content with a message to the player not to play the file if the content has been previously compressed. If content does not have the Phase 2 mark then it will be accepted by the player. This means that unprotected audio such as MP3 files will still play under the Phase 2 screen. It is also expected that some degree of copy protection will be incorporated into Phase 2. SDMI protected content will not be accessible outside the Local SDMI environment (the equipment used in order to play the content, such as a software-based player installed on a computer) and it will also restrict the number of times a CD can be copied (ripped) to the hard drive or portable device to four copies per session. It will also be possible to check in/check out protected content from a computer to a portable device and back again, without being allowed to actually copy the audio.[95]

The successful implementation of these specifications would once again allow the recording industry to regain control over the ways in which consumers use major label music, facilitating the transgression of the industry's established business model to the arena of digital distribution. Under SDMI, digital music files and audio players would take on the same characteristics as their traditional physical counterparts; music could be copied a limited number of times for personal, non-commercial use, files could be transferred (rather than copied) from one device to another in the same way that a CD or tape can be transferred from a standalone player to a portable device. Additionally, files could be tracked and royalties distributed to IPR holders. SDMI could solve the problems that unprotected MP3 files pose: the threat of mass serial copying leading to an uncontrollable piracy epidemic in which users would freely exchange unauthorized files rather than purchasing them, denying the industry of revenues from phonogram sales. The ability to regulate usage behaviour through software is a possibility that did not exist in the debates surrounding home taping, and its appeal is obvious: it promises to control currently uncontrollable behaviour, to reduce the alleged revenue losses attributable to piracy, while at the same time giving the industry a platform from which they can create a viable digital download market which is consistent in both the online and offline environment.

However, since its inception SDMI has faced major difficulties in its organizational structure; consensus is required in the choosing and approval of technologies, and the competing interests of members has made unanimous

agreement almost impossible. If a technology is vetoed by one group – for example, the consumer electronics industry – then discussions are unable to move forward.[96] This has meant that while Phase One has been implemented, Phase Two is still currently under development with no impending technological solution to achieving the group's collective goal. It has not been divulged whether any particular party has been using its veto power to gridlock discussions, but since the 1980s the electronics device manufacturers have aligned their interests with the record companies; as outlined in Chapter One, Philips' ownership of Polygram Records, Sony's acquisition of CBS Records in 1987, and Matsushita's acquisition of MCA Records in 1990 cemented the role of the transnational conglomerate with interests in both electronics hardware *and* IP software.[97]

In contrast, the IT industry has developed independently of such transnational corporate influence; for example the AHRA, as discussed above, exempted the IT industry from implementing mechanisms designed to commercially empower the major music and electronics conglomerates. The IT industry, with interests in the development and innovation of software and hardware which will transform computing and the architecture of the Internet (such as peer-to-peer [P2P] software), opposes the restrictive mechanisms that the major record companies wish to see introduced. Such mechanisms, they say, will only hamper innovation and slow technological progress. It may be, then, that device manufacturers and record companies are using their power to veto certain technologies (such as P2P) to maintain their own business models, while the IT industry objects. Even if SDMI arrived at a technological solution to control the digital distribution of authorized music files, there would still be huge social obstacles to overcome; at the turn of the millennium, the Internet is still a volatile and fairly unregulable media space in which corporate influence is not perceived to be particularly effective, while certain cultural and ethical values are upheld.

This overall anti-piracy campaign is quite broad-ranging, but still limited in its success. As far as specific online piracy is concerned, the music industry is struggling to cut down on unauthorized uses, even though Napster is finally being beaten into submission. However, this campaign is a smaller part of a more comprehensive strategy aimed at gaining dominance over the changing media landscape. This is discussed in the next section.

Corporate Strategies for Control

The anti-piracy strategy examined above consisted of education, enforcement, litigation, and developing new technologies. The intended effect of these activities was to stop individuals and groups of people from exchanging and making available unauthorized and uncontrollable copies of copyrighted material. This anti-piracy initiative is part of a wider strategy which the corporations hope will allow them to maintain their dominance within a long term digital marketplace. This strategy consists of tightening control of IPRs, litigation, strategic alliances, and developing new technologies. Often these are enabled through skilful lobbying, by the music industry trade bodies such as the IFPI, for legislative reform as mentioned above.

1. Tightening Control of IPRs

As noted in Chapter Two, there has been a tendency over the last twenty years to expand the owner's rights over works of intellectual property. In general this has taken the form of extending the length of time that copyright protects a work, and also expanding the breadth of copyright so that it encompasses a wider range of privileges.

a) Extending the length of the copyright term: Both the US and the European Community extended the term of copyright to a point which effectively eliminates the public domain for music written in the twentieth century. In 1998 the Sonny Bono Copyright Term Extension Act extended the term of US copyrights owned by corporations from 75 to 95 years, and individually held copyrights to the life of the author plus 70 years; the move obviously benefits corporate capital, and was spearheaded by Disney because, under existing law, Mickey Mouse was about to enter the public domain.[98] Additionally, in 1999 the music corporations succeeded in pushing an amendment to copyright law through Congress which allowed corporate-owned IPRs to reside permanently under control of the record company, where they previously reverted back to the author after 35 years. However, after much protest, the amendment was reversed (see Chapter Five).

b) Extending the breadth of copyright: This has been achieved in part through the creation of brand new intellectual property rights which afford greater control over more diverse uses of a work. Many states in the US have provided greater protection over pseudo-literary works; the TRIPS agreement now allows the extension of IP protection to works such as compilations (which are not universally protected), computer programs as literary works, and databases (if the way in which the data is selected or arranged constitutes an intellectual creation), none of which had previously been eligible for inclusion in the provisions for 'artistic or literary works'.[99] Within extant literary or artistic works, additional rights also grant more substantial protection over those works; the film rights to a book, and translation rights are examples of uses which are being more tightly controlled by the rights holder. The breadth of copyright is also being expanded through a move toward exclusivity over the full copyright term in the online environment. For example, compulsory licenses have traditionally dictated that once a work has been released by a record company, the company cannot stop that work from being broadcast. Kretschmer describes how the president of a multinational record company argued:

> WIPO [the 1996 Internet Treaties of the World Intellectual Property Organization] is so important because it allows the industry to say 'No' in the on-line environment. We need this for broadcasting... It is not that we want to forbid broadcasting, but having the right to say 'No' would result in higher margins.[100]

The effect of increasing the length and breadth of copyright protection is to extend the control that rights owners have over their works, which accordingly diminishes the public domain and the public's rights to fair use. Joseph Lavigne convincingly argues that the extension of copyright term in no way encourages an increase in production of new works, as the works which are being extensively protected have already been created. Increased *post mortem* protection is unlikely to encourage the creation of more works; rather it benefits those works which have already been created and delays their entry into the public domain.[101] If the objective of copyright is to encourage the progress of Science and the useful Arts, it will not be achieved by diminishing the public domain. Indeed, stronger copyright protection may actually

stifle the creation of new works, as it provides more hurdles and obstacles for other authors to negotiate and overcome when using such works for purposes such as criticism or research. The effect is to deter such works from ever coming to fruition. The pragmatic policies of the original proponents of copyright have therefore been hijacked by investors to afford themselves protection far beyond that necessary to promote the progress of science and the useful arts.[102] Dr Paul Theberge considers that "for all its rhetoric concerning the importance of individual creative activity, copyright legislation remains, above all, an economic regime – a regime organized as much for the benefit of large-scale corporate cultural enterprises as for struggling poets and composers."[103] Additionally, he accurately identifies the shift in outlook on the function of copyright:

> The original intention of offering incentive to create while not limiting public access to cultural goods has virtually been abandoned...the cultural industries are so fully developed today that the need for incentives is obsolete. The role of copyright [is] to recognise and sustain success through further economic reward...Thus the primary function of copyright today is to reinforce and legitimate the status quo of the market-place.[104]

Copyright reform which serves the interests of corporate rights holders has been permitted to pass into law through skilful lobbying of Congress by industry representatives (such as the RIAA and the IFPI), who also involve themselves in the process of drafting such legislation. When the interests of the music industry became aligned with those of the electronics industry at the end of the 1980s, the two industries became much more adept at drafting agreements and proposals which, through unanimity, were able to be passed as law.[105] This proved successful with the 1992 Audio Home Recording Act, and more recently with the 1997 No Electronic Theft Act, and the 1998 DMCA which, as mentioned in Chapter Two, prohibits the circumvention of security mechanisms which restrict access to copyrighted material. Such mechanisms are often referred to as copyright management systems, trusted systems, or Digital Rights Management (DRM) systems. The technologies and their implications are discussed more fully below as their implementation in conjunction with updated copyright legislation is one of the major strategies pursued by the

media corporations in a bid to tighten control over their works in the digital environment.

2. Litigation

As discussed above, the music industry has engaged in high profile litigation as a means of asserting control over their rights with the intention of regulating the ways that people interact with their sound recordings. Using legislation in this way can be a strategic tool to stifle competition:[106] as seen with the cases against *Diamond*, *MP3.com*, *Scour*, and *Napster*, corporations are quick to invoke rigorous interpretation of copyright law in order to halt a competitive service or product. As long as they win the litigation (and this is by no means guaranteed – see *Diamond*), then they gain the advantage in the fight to dominate the new media space; the successful outcome for the music industry in the *Napster* case bolstered their position and allowed them to gain ground in their anti-piracy campaign. Within such cases, copyright law is often interpreted in a way which incriminates the defence. For example the DMCA, which laid out a framework for licensing agreements, royalty payments and anti-piracy laws, was intended to encourage major content companies to begin releasing their catalogues over the Internet, thereby spurring on the new economy.[107] However, the corporations have been particularly reluctant to license their content to third party music services and have been slow to initiate any of their own services. By keeping their music out of the online environment they attempted to keep their competitive edge to themselves, as well as using strict interpretations of the DMCA against innovative companies such as Napster and Scour. The additional, and intended, effect of long term, high profile litigation against small companies is that it drains that company's limited funds with a view to putting them out of business. This intimidation and uncertainty over the market's future also has the effect of deterring investment by venture capitalists in such start-up companies, leaving them without additional funding.[108]

3. Strategic Alliances

As discussed in Chapter One, during the 1980s and 1990s media corporations engaged in a sizeable amount of merger/acquisition activity with other content

providers. The parent transnational of such media corporations also partnered with hardware companies – network operators and cable corporations – in a bid to obtain competencies in the delivery of digital content. In the early 1990s Time Warner Entertainment (TWE) undertook strategic alliances with telecommunications giant US West, Japanese electronics firm Toshiba, and trading company Itochu, and TWE also operate the second largest cable network in the US.[109] In January 2000 they announced a partnership with America Online (AOL), the largest Internet Service Provider in a $182 billion deal, while in December 2000 Vivendi (the French cable company) acquired Seagram, the parent of Universal Music Group.[110] Such integration between giant corporations serves to increase the potential control that a single corporate entity has over its market, and allows the media corporations to move into the new markets of digital delivery. By acquiring cable network operators and ISPs they are increasing their ability to compete favourably against other industries in the digital market. Additionally, successful start-up companies which want to survive the turbulent landscape of digital music have little choice but to sell a part of their company to the major labels.[111] In May 2001 Vivendi-Universal acquired MP3.com, whose technological base will enable Vivendi to develop their subscription service, as well as acquiring online music retailer Emusic.com with the intention of integrating it with its Farmclub.com label to develop a single distribution platform.[112] As well as the acquisition of transnational entities, the major corporations have begun to consolidate technology properties by acquiring those Internet businesses which have built successful streaming and download technology platforms within their niche markets. For example, in 2001, Vivendi-Universal acquired Emusic and MP3.com, while BMG acquired MyPlay, CDNow, and has a stake in Napster.

4. Develop New Technologies

This strategy was discussed above, as the Secure Digital Music Initiative formed part of the industry's anti-piracy campaign. However, the development of new technologies goes beyond an anti-piracy strategy. The ability to control usage patterns not only restricts the user's ability to make unlimited copies (thereby reducing the threat of rampant piracy), but also imposes commodity behaviour on fluid information, thereby reinstating the industry's commodity-based business

model in the online environment. Although the current network architecture as well as the prevalent culture of free use creates significant barriers to growth for secure music, proprietary technologies which impose a degree of control over how a person interacts with digital data are currently being developed and are the premise on which future digital markets are founded. The details of the proposed SDMI architecture and how they intend to regulate user behaviour were examined above, but technologies of control are being developed and adopted by commerce in general in order to enable the promise of online digital markets. Technologies which control user access to content are variously known as 'trusted systems', 'copyright management systems' (CMS), or 'digital rights management' systems (DRM), and the current state of their development, as well as the implications for the future, are discussed below.

Digital Rights Management Systems

DRM systems are code-based technologies which enable copyright owners to regulate reliably and charge automatically for consumer access to digital works. A commercial example of DRM comes from InterTrust Technologies Corporation in the form of their *SuperDigiBox*, which is a file structure which enables the packaging and delivery of other files types. Publishers and other content providers can package and deliver, within a single container and in a secure manner, complementary digital products such as music, software, video and other published materials such as articles, pictures, and graphics.[113] Each product within the SuperDigiBox can have different business rules associated with it, dictated by the content owner, which regulate the pricing and the ways that that product may be used. Once the consumer has the DigiBox they will be required to obtain permission to unlock the file, which could be provided by either a financial or non-financial transaction.[114] As a hypothetical example, the rules associated with a file could dictate that the file can be accessed five times free of charge upon provision of a valid email address, after which a transaction of £1 must be made for continued access. While this may be an attractive package from the content owner's point of view, the practical considerations of initiating download and playback of secure music are, as of June 2001, far from convenient, due in part to a lack of commonly agreed standards and

protocols, lack of bandwidth required to conveniently download software and audio files, and the immaturity of the DRM technology.

For example, Amplified is a licensee of InterTrust Technologies, who run a Web site devoted to providing the DRM service to bands and retailers.[115] The currently supported DRM-enabled file formats are Microsoft Audio files and Liquid Audio files. In order to *preview* Liquid Audio files on the Amplified Web site, a user is required to download the Liquid Music Player and install it on her computer. She must then follow a link on the Amplified Web page and fill out a form, then follow another link which will launch the set up program. The user is warned that this may take some time depending on the user's modem speed. She must then follow the instructions within the set up program, then open a browser window and visit the Amplified Web site and follow links to preview each track.

In order to *download* music for the Liquid Player, the user is also required to fill out another form, download a Liquid Music Passport, and enter a password. Consumers are then able to purchase downloadable music which may only be played on the registered user's software.[116] This arrangement presents a considerable inconvenience to the user in both time and effort, especially when compared to a convenient and intuitive service such as Napster. The incentive to continue the process of downloading secure audio is the vast back catalogues from the major record companies, authorized files from a secure source guaranteed to arrive in pristine condition, improved audio quality over MP3, non-eligibility for copyright infringement and, purportedly, convenience of downloading from a trusty and authorized source. However, none of these incentives (apart from being eligible for copyright infringement) has yet been adequately delivered in a way which surpasses the service that Napster has provided. Bearing in mind that DRM of this kind will be integrated into the SDMI architecture, the technology will have to mature somewhat before it presents incentive to the consumer to go down the long and obstacle-ridden road of secure music. Nevertheless DRM is almost certain to improve rapidly, and as such provides record companies, and other interested commercial parties, with a possible means to overcome those barriers to growth which are dictated by the current network architecture mentioned above, namely that the network encourages the free flow of information, it assumes that conventional notions of copyright are obsolete, and it makes copyright unenforceable. DRM systems, on the other hand, offer the following advantages:

1. They discourage free sharing of information/content through watermarking and encryption, potentially controlling the widespread exchange of unauthorized music files.

2. They maintain the accepted notion of copyright through enforcing copy restrictions, re-establishing the IPR holder's ability to authorize the making of copies of the work.

3. They make enforcement of copyrights and payment for content a pre-requisite for access. Additionally the ease of copying and redistribution could offer opportunities for super-distribution (passing the file to a friend who pays to open it).

DRM systems are designed so that the IPR owner can control the way that a person uses that work. Although the InterTrust example given above does not imply much of a threat, the potential for control that they offer commerce is a massive incentive to develop and adopt them. In conjunction with government's approval of them libertarians should be more cautious than many currently are in their celebration of the freedoms that the Net currently allows. The concern voiced by academics, scientists and lay people, including the legal scholar Julie Cohen, is once again that the balance between the IPR owner's right to remuneration from their work, and the public's right to the free flow of ideas, will increasingly tip in favour of copyright holders as they lock up their work in a pay-per-view model.[117] It has been reiterated throughout the thesis that the objective of copyright has been to grant rights holders only a limited monopoly over the copying and dissemination of their works, while consumers have been granted certain statutory freedoms in order to counterbalance the power of the rights holder. Nevertheless, the provision under section 1201 of the DMCA which prohibits the circumvention of DRM systems essentially gives corporations the freedom to determine the framework within which legitimate and illegitimate uses are defined. Although the DMCA provides some narrow and specific exemptions from anti-circumvention provisions for non-profit libraries, archives, and educational institutions under certain circumstances, any other uses currently provided for under fair use in the offline environment, such as non-

commercial personal copying and space-shifting, are likely to be dictated by the DRM system in the online environment.[118] Even if circumvention of DRM technologies was used to provide such legitimate privileges currently permitted under fair use, the act of circumvention itself is now criminalized regardless of the underlying motive. Regardless of such concerns, copyright owners and other content providers are in favour of DRM systems precisely because of their capacity to define and enforce 'usage rights' in digital works, with only vague and favourable guidelines provided by legislation.

Theoretically then, the development of technologies such as DRM systems promises to be one of the most effective strategies to counter piracy and to provide the basis of a model for commercial digital distribution. However, this restates the question put forward earlier in this chapter: will SDMI/DRM systems penetrate the market, or will the freedoms that the network architecture allow negate the possibility of DRM take-up? Just because the technologies exist, this does not necessarily mean that they will be adopted by the general public. In order to assess these factors it is necessary to examine developments that are taking place within security technologies, the benefits they may provide, and the subsequent implications for the wellbeing of society. Although SDMI seems to have produced little of substance yet, and hopes for its success seem limited, it is necessary to take a look at the developments of 'trusted systems' in order to try and assess the possibility of their successful take-up.

The Implications of Trusted Systems

Where the technologies of control have thus far been referred to as DRM systems, the following discussion will refer to them as trusted systems. This is due to the fact that whereas 'DRM' is specifically aimed at protecting copyrighted content, the term 'trusted systems' refers more generally to any system which regulates user behaviour. DRM is one particular example of the application of a trusted system, and it is necessary here to consider the development of security technologies in general in order to provide a better perspective on DRM systems.

Harvard law expert Lawrence Lessig's message is quite clear in his book *Code and Other Laws of Cyberspace* (2000). He puts forward a convincing argument which states that certain values are embedded in a network's *architecture* (the

software and hardware which make cyberspace what it is), which determine user behaviour.[119] Until recently, the architecture of the Internet, which was built to maximize the dissemination of information, has determined that user behaviour was largely unenforceable. However, the investment by major corporations in the network architecture is changing in ways which will allow the control of user behaviour. He argues that network architecture *can* effectively regulate user behaviour; this already exists on proprietary networks such as ATM networks, where a user may only access the network and the relevant user account with the proper identification (credit/debit card, combined with the correct PIN number). Such regulating technologies are now being developed for and introduced on the open network of the Internet, which may permit or deny access depending on the user's ability to identify him/herself.

At present this identification procedure may take the form of typing in a user name and password to gain access to one's email or bank account. In the near future, identification technologies may rely on 'digital certificates' which verify with complete authority one's personal details, and developing biometric technologies could allow identification based on one's thumbprint.[120] Although such technologies may allow such benefits as easy and convenient access to personal accounts and information from any networked location, they also come at a cost: the relinquishing of relative anonymity through identification and tracking. Trusted systems are therefore tools which can be used to identify who someone is, to collect personal information, to determine where they come from, to track behaviour, and to control the content that they use. Such technologies could be used to control user access to information, rather than allowing freedom of access. They could disable free speech instead of enabling it; they could change the Internet from being an "unregulable space to...the most regulable space imaginable."[121] They could provide commerce and, in the future, governments, with the ability to identify and regulate personal behaviour, culminating in the Net as a structure of international control. This is not a vision of the Net that the advocates of the gift economy would espouse.

The law has responded to the perceived threat of unenforceable copyrights by granting industry the ability to regulate user access to information through code, or trusted systems. The government's legal and financial support for the development of copyright management schemes is likely to encourage a scenario where code will displace the law as the primary defence of intellectual property in cyberspace, and

the commercial interests which determine the code of trusted systems will create a kind of privatized law which may not seek to balance any interests except its own.[122] The rules which were once fixed through legislation will become fluid and dictated by corporate interests. As technology has progressively increased the ease, and decreased the cost of copying, the legal protection of copyright has increased to accommodate these technological changes. However, increased legal protection in conjunction with such powerful tools of perfect control may provide protection for IPR holders which oversteps any Constitutional provisions. The result of this will be that fair use will only exist if it is in the IPR holder's interests to provide it; fair use will be subject to private gain.

The significance of these provisions in the DMCA, which advocate the use of trusted systems, as well as outlawing circumvention devices, is that they have essentially granted rights holders exclusive control over their works in the online environment. Where rights holders used to enjoy a monopoly on reproduction and distribution which was limited in term and scope, they now enjoy broad and expansive protection on their own terms. Fair use has been defined extremely narrowly, and under the scenario outlined above, the public would only be permitted access to works under explicit authority from the rights holder. The significance of this step is that the rights holder could not only control reproduction and distribution, but also patterns of consumption.

With offline commodities such as CDs, the author's or publisher's rights are largely expended after the first sale has occurred. The consumer who buys the CD is able to listen to it when he wishes, as many times as he wishes. He can lend it to a friend, and use it in his CD player, computer, or in-car stereo. He can tape it for his own personal use, or he can sell it under the First Sale Doctrine. In a trusted system-dominated online environment, all of these activities could be criminalized unless explicitly authorized by the rights holder. The ability to control *access* to a work has never previously been granted within copyright.

Assessing the Potential Success of Trusted Systems

In attempting to answer the question of whether architectures for the delivery of secure content can be successful given the architecture and culture of the Internet, this chapter has so far examined the developments leading to the current architecture

of the Internet and the values and behaviours that this has encouraged. These were based around the scientific, academic and cultural realms which were largely inconsistent with, and often hostile to, the logic of the market. However, the investment by the market in the Internet has begun to change its architecture, and the implications are that they could enable the secure delivery of content on a scale never realized before.

The question of whether trusted systems will penetrate the market relies upon the extent to which proprietary technologies will govern the hardware and software that the majority of consumers will use to access the goods and services that they want. For example, regarding Internet access, the user transition from open network protocols to closed, or proprietary ones, may come as people begin to access the broadband Internet through cable services. The providers of access to broadband cable networks are those corporations which, through strategic alliances as noted above and in Chapter One, have substantial interests in content delivery, and therefore in trusted systems. Network owners such as AT&T and AOL Time Warner may be able to impose controlled network conditions on the ways that users interact with their services and content, through the application of trusted systems. As Lessig relates, the head of AT&T's Internet services said of allowing streamed video content through their cable networks to non-paying, unregulated computer connections, "We didn't spend 56 billion on a cable network to have the blood sucked from our veins."[123]

The open architecture which shaped the free flow of information through the Internet may eventually be superseded as high bandwidth cable networks deliver the speed and convenience that consumers would wish for; the clumsy processes which characterize the DRM experience in 2000 could be replaced by super-fast and seamless transaction and streaming/download processes, presenting the user with vast catalogues of music and video, combined with negligible inconvenience. As such, although the narrowband Internet may remain uncensored, unregulated and unrestricted in its content, the sheer speed which broadband will deploy, as well as the glut of corporate content, could make it a much more enticing prospect for many people. However, this speed could come at the price of transforming the Internet from a celebrated medium of free speech into a gated and branded medium of consumption.

Regarding the consumption of music, it is likely that access to music services may increasingly be provided through networked hardware devices, such as hi-fi modules specifically manufactured to access and play digital music file formats, with the ability to write files to removable storage formats such as CD. If such devices are adopted, and they fit into the category of 'digital audio recording devices' then they would be covered by the Audio Home Recording Act, and as such would be required to incorporate mechanisms which restrict unlimited serial copying, just as SCMS was mandated into DAT machines (as covered in Chapter Two). Even if such devices were not covered by the AHRA (and this would require definition by a court of law) then the audio format into which popular commercial music is encoded will be DRM-enabled anyway, again negating the ability to serial copy. If the music and electronics industries succeed in removing the personal computer from the process of accessing, storing and playing back music, then they will have removed many of the problems which they have recently faced.

The struggle between the media corporations and the Internet community is ongoing as their interests seem to continue to conflict: while consumers want free and convenient access to music, the corporations have been unwilling to oblige due to an inability to enforce copyright and derive an adequate revenue stream. The longer they stay out of the online market, the more difficult it may be to enter it, and the corporate intention of developing music that restricts user behaviour would not seem an attractive proposition when users have become accustomed to the freedoms enjoyed with an open format such as MP3. Moreover, corporate hostility to those services (such as Napster) which do offer the public what they want only serves to alienate those corporations from their consumers. It is still too early to assess the specific success of SDMI – two years on from its inception, nothing of substance has emerged from the initiative, and it does not currently hold out much promise of delivering any goods in the near future. However, the development of trusted systems is forging ahead regardless of any industry coalition, and it may be that the music industry's success will happen outside of the SDMI through a broader application of trusted systems to broadband Internet service provision.

The ability of the Internet community to continue their anonymous and decentralized services may depend on either the corporate ability to change the nature of the network, or to entice consumers to a faster and more secure network. At present, the Internet continues to be an open network and as such the content

industries continue to face the problems that this has caused them. Whether the DMCA will grant them adequate protection through DRM technologies remains to be seen. In theory the DMCA oversteps any provisions hitherto granted by copyright law, but still the corporations have neither gained a significant foothold in the online market, nor succeeded in eradicating online piracy.

The issues at stake are wider than just the success or otherwise of secure music, they strike at the very heart of what the Electronic Frontier Foundation have been vociferous about all along: that access to the Internet and to new technologies should continue to be democratically available, and that these technologies should operate in a way which is beneficial to the widest possible community of Internet users, rather than serving the narrow but growing self-interest of commercial organizations. The prospect of the transformation of the Internet from open narrowband network to a closed broadband network is an issue which concerns giving up freedom of expression in favour of compulsory commodification, of relinquishing the gift economy as an alternative to the dominance of monopoly capitalism and state regulation. It is therefore a political choice that this should be allowed to happen.

Chapter Four: The Effects of New Technologies on the Established Practices of Production, Promotion, Distribution and Consumption of Recorded Music

The previous three chapters examined the working practices and strategies of the music industry, and the problems it has faced as recorded music became first digitized and then networked. The last chapter explored the conflict of interests between the music industry and the Internet user base, and the way that both sides co-exist in a continual tension. It is now time to pause and to provide an overview of some of the ways that new technologies are shaping and changing the way that music is produced, promoted, distributed and consumed at the turn of the millennium. This will help to highlight the changes that are taking place within the music industry at the individual, collective, small business and corporate levels – in some instances new patterns have emerged, and in other instances existing patterns have been applied to the World Wide Web, with resulting increased efficiency and scope.

Production

Throughout the history of recorded music, advances in recording technology have had a dramatic impact on the practices of production that musicians and artists have employed. Recent developments in computer technology continue to alter the dynamics of music production, but in order to contextualize these changes it is necessary to provide a brief synopsis of developments in recording technology over the last sixty years.

Prior to the introduction of electro-magnetic tape into recording studios in the 1940s, only one recording of a performance could be made per wax disc. Magnetic tape allowed recording and re-recording, as well as editing and splicing operations performed by recording engineers, enabling greater flexibility over the final recording.[1] Two- and four-track tape recording was developed in the 1950s, enabling musicians to accompany themselves on tape and add to their own recordings at a later date using the technique of 'overdubbing'.[2] This freed performers from the single ensemble performance that had been required to capture a recording, allowing a recording to be built up over a period of time. During the 1970s studios increased

the number of tape tracks available, from eight to as many as forty-eight, allowing technologically sophisticated recordings to be produced. Special effects were also developed such as delay, echo, artificial reverberation and flanging, allowing musicians to experiment with timbre and tonal variations.[3]

The development of microprocessor technology introduced digital audio recording into studios in the late 1970s. This allowed increased flexibility and ease of editing, such as altering the sound and length of audio files, as well as triggering audio 'samples' at will. During the 1980s the MIDI (Musical Instrument Digital Interface) computer system allowed compatible synthesizer modules to be inter-connected and controlled by a sequencer. This allowed the musician to create ensemble compositions using only computer technology. In the 1990s, the decrease in price and increase in performance of computer technology fuelled a growth in the home market for software-based digital audio and multi-tracking applications. This has allowed many musicians affordable access to sophisticated music tools in the comfort of their own homes; as of June 2001, most audio-editing software enables audio processing that would, a decade ago, have been limited to the most sophisticated audio equipment, utilized in the most expensive recording studios. For many people this technological development has changed the *location* of production from the commercial recording studio to the computer-based home set-up. The additional advantage of this is also the decrease in the *cost* of production. In Chapter One it was noted that for record companies, production is a particularly expensive element of the overall process involved in selling records, due in part to the expense of hiring recording studio time, equipment and personnel for prolonged periods of time. For a modest investment in a home studio set-up (for example, £5,000-£10,000), the ability to develop ideas and even produce finished works on a home computer-based studio set-up is extremely valuable in its cost-effectiveness when weighed against the cost of producing a typical major label-released album-length recording (often in the region of £500,000). The home studio is not even relegated to hobbyists: singer/songwriter David Gray's album, *White Ladder* was produced in a small house in London "with the windows open and the traffic going by. It owes as much to the sampler as the acoustic guitar, more to the computer than the tape machine."[4] It was released commercially on Gray's own label and went triple platinum in the UK. Computer technology has therefore reduced the cost of production, and in many cases changed the location of production. In addition, the

recent ability to connect computer-based composition tools to a communications network has led to the development of software which takes advantage of the ability to collaboratively access a single file from different locations via network technology.

One such software product is the Rocket Network's *Rocket Control.* This is software which can be integrated with existing audio multi-track/MIDI sequencing software, such as Steinberg's *Cubase VST* or Emagic's *Logic Audio.* The above audio/sequencing applications allow digital audio multi-tracking, synchronized with MIDI sequencing facilities. Additionally, *Rocket Control* software may also be integrated into the above audio applications. This enables the artist to record and create music on his/her computer-based studio, while collaborating on the same piece of music in real time, with other users of the same system via the Internet.[5] By using this system of production it is possible for geographically disparate people to collaborate simultaneously to create a single piece of music. This has altered the nature of production from a traditionally centralized activity restricted by location, to a de-centralized activity which can accommodate people in different locations at either the same or at different times. Clearly the restrictions of time and space which once dictated the methods of production have now been surmounted through developments in recording and network technology.

Another example of the changing nature of production is provided by Generative music which, through the tandem development of computer and network technologies, has allowed a process of musical composition which would otherwise have been impossible. SSEYO are a company which have developed the *Koan* software, a 'generative music composition engine'[6] which creates musical information from a series of user-defined parameters. This means that through the software interface, the user can determine the value of certain parameters which dictate the outcome of the composition – for example, the user may define what key, tempo, scale, tones and samples are to be used in the composition. There are 250 such parameters, all of which have a range of values. The user defines the values within the software, which then generates music based on this information. The result is the creation of a computer-generated piece of music which, when replayed on the Generative system, will always be similar in characteristics, but never identically duplicated. It is also possible to connect the software to the Internet, thereby permitting collaboration on pieces of music via communications networks.

Established figures within the Koan community such as Brian Eno have also helped to raise awareness and credibility for this software.

On a more commercial level, communications technologies have enabled connection and transmission from a remote location to a central one. This has affected the way performers interact with recording studios: voice-over professionals now often transmit their performances from a small home studio set-up to a recording studio via ISDN lines. As more bandwidth becomes available, such methods of remote, decentralized and/or collaborative production are likely to become more common. Throughout the history of recorded music, developments and innovations in recording technology have increasingly freed musicians from constraints of time and space imposed upon the process of musical production. Recent developments in both computer hardware and software have continued this developmental thread by allowing recording technology to spread from the recording studio to the home, changing the nature of production from a centralized to a decentralized activity, and allowing musicians greater flexibility in their methods of production. Additionally, the ability to connect such home-based studios to communications networks has increased the potential for collaborative work between these geographically disparate nodes of production.

Until recently then, the technology for recording music has been expensive and therefore owned by record companies or recording studios. Access to the means of production has subsequently been restricted by a lack of access to capital. The ubiquity of home computers and their rapidly falling price tag has meant that the technology for recording has become more readily accessible to a larger number of producers. Therefore the process of producing music has not only been freed from the restraints of time and space by technological development, but the home location as recording studio has freed many musicians from the necessity of seeking record company contracts as a means of gaining access to the means of production.

Promotion

The basic practices that record companies undertake in the promotion of a band have been discussed in Chapter One, but will be recapped here in order to highlight the differences between existing and new approaches to promotion as a result of communications technologies.

For musicians signed to a record company, promotion is handled by the company's marketing department, who create a visual identity which can be successfully conveyed by the media; this entails producing publicity photographs and promotional videos as well as organizing appearances and publicity campaigns in the press, on the radio and TV, billboard poster campaigns, interviews for local and national broadsheet and music press, and through any other available media. A full-blown media publicity campaign involves vast capital expenditure which is justified on the basis that if the artist and their music is successful then the returns will more than cover the costs. For example, a promotional video for a single can often cost in the region of £75,000 which, if targeted correctly at the appropriate market, has the potential to increase sales by an enormous amount.[7] It can cost over £1 million to promote a single throughout the entire media complex to the point where it has the best possible chance of being successful.[8] The stakes are high for the companies involved in this level of promotion.

At the other end of the promotional spectrum, musicians who do not rely on a record company for promotion have traditionally had to rely on live performances, self-produced promotional material, local radio and press, and word-of-mouth to procure an audience and allow the public to hear their music. They may start performing locally in front of a regional audience, while gradually attaining more geographically widespread performances, thereby increasing their audience. Live work is an essential means of finding an interested market for their product (the product being recorded music on CDs and cassettes), to whom they can target publicity and promote merchandise. If an act aspires to attract the attention of record company A&R personnel with a view to procuring a recording contract, live performance is crucial as A&R personnel place considerable emphasis on an act's live performance potentials and abilities.[9] A&R also require some indication that a market for a band's music exists in order to assess the potential commercial viability of that act; if, through live performances, a band has attained a regional or national following, this can indicate to the A&R staff the extent to which a viable market for that music exists.

The World Wide Web allows independent and unsigned artists to take advantage of traditional methods of promotion such as mailing lists and word-of-mouth, and adapt them to the more efficient and extensive medium of the Web, as well as creating completely new marketing techniques specific to the Internet. These

will be dealt with below. At a basic level the Internet provides artists with a publishing space that allows them to supply information about themselves and their music to a prospective audience, in a variety of media (sound, image, video, and text) within the same overall context of a Web page. The implications of this are that it is now possible to promote one's music on the Web without the need to rely on live performances as a means of musical transmission from creator to consumer. The listener is therefore freed from the strict geographical and temporal boundaries that a live performance demands, and the producer is able to promote himself in a cost- and time-effective manner on the World Wide Web.

Several sites have emerged to service the consumer demand for a diverse repertoire of popular music by amassing and delivering content to consumers. These sites act as intermediaries between producers and consumers, essentially fulfilling a similar function to that of a traditional music retail outlet – representing a large repertoire of music from which a large audience may select music they like. Here, it is necessary to illustrate the service that these music sites can offer with a brief description of the services offered by the first and largest independent music site, MP3.com.

MP3.com

Classed as a Music Service Provider (MSP), at the time of writing (June 2001) this is one of the largest music sites of its kind on the Web.[10] Its function is to provide the public with a diverse array of independent music, which they are able to stream or download as MP3 files free of charge. Although geared towards servicing the demands of consumers, sites such as MP3.com are vital places for artists to expose and disseminate their music to a potential audience.

The artist is required to upload MP3 files of their music to the site's storage servers, whereupon they are allocated a dedicated Web page which includes all the music they have available on the site, as well as extra information such as photos, graphics, reviews, descriptions of their music, influences, performance details, and links to other artists on the site. The entire repertoire of music on the site is categorized into sixteen main genre sections, each of which have various sub-categories from which a visitor to the site may narrow his search for a specific type of music. From the relevant genre section, a visitor can search the related artist pages

until some satisfactory music is found. From an artist's page, the visitor may *preview* an artist's music via streaming MP3, or they may *download* the MP3 file to their own computer. If consumers are adequately pleased by the music they hear, they have the option of purchasing a CD, which is manufactured and shipped by the company, and who divide the net profit between the company and the artist.

Figures for May 2000 show that more than 1 million people were visiting this site daily,[11] allowing artists the potential to build their audience and customers from this traffic. However, there are over 250,000 tracks on the site from over 50,000 artists, indicating that competition for the consumer's attention is fierce, making it a difficult task for an artist to generate an adequate audience amid such a large amount of music. Nevertheless, this site has made particularly good use of strategies and techniques, which are specific to networks, in order to increase traffic for both the site and for the artists it represents. For example, the ability for an artist to feature links on his Web page to 'music we like' allows one artist to refer a visitor to another artist's Web page. Although sending a visitor away from one's page may seem to defeat the object of generating sales from traffic, it is in fact building up small networks of artists who link to each other. A network's value increases with membership,[12] and by building up a network of artists who link to each other, the individual traffic that is generated by each member is shared by the whole of that network. This is compounded by the fact that on a site as large as MP3.com it can be difficult for a visitor to find music that they actually enjoy among the thousands of artists vying for attention. However, once such music has been found, these links from one artist's page to another can act as filtering agents, picking out specific music that is more likely to be of interest to that listener than if they had just listened to any artist's music without prior knowledge or recommendation. This concept of increasing the value of a network with membership is the basis for many of the features that have established this site as the largest of its kind.

The size of the artist community influences the size of the listening community. The size of the listener network which visit and return to the site influences the company revenue and perceived value of the site. In order to maintain and increase listener numbers it is imperative that the company draw consumers back to the site and encourage them to become part of an active community which shares a common interest in new music, and who communicate with one another on relevant topics. Visitors may return to the site to read the topical daily news articles

which detail the latest developments in the Internet music industry. They are then encouraged to peruse other readers' comments on the article and to post an opinion or comment themselves, thereby engaging in a form of conversation with other members of the site's community. This is known as a Bulletin Board System (BBS), a collaborative form of text-based group communication, and by encouraging people to interact with the site and each other, the site becomes valuable not only as a place of consumption, but as a place to meet and communicate with people who share a similar interest. Although access to free music may be the initial reason for a visitor to access the site, his ability to interact with it, become part of a community, and to personalize his experience and listening choices while there make him more likely to return to continue the relationship that is constantly being built and strengthened between the visitor and the site.

Many of the techniques that the site utilizes to gain membership can be brought under the term *Viral Marketing*. This can be defined as any form of marketing that propagates itself like a virus,[13] or additionally, online marketing which builds self-propagating visitor streams, propelling one's site to extremely fast growth-rates.[14] Some of the key concepts behind this form of promotion are to:

1. Locate communities with specific interests and/or requirements.
2. Supply relevant information to a potentially unlimited number of interested recipients.
3. Give the recipients the ability to pass that information on to others either intentionally or inadvertently.
4. Build a relationship with people who are interested in that product.[15]

There are no set rules or strategies by which to obtain these objectives, but it is clear that MP3.com understand the way that network growth can be effectively achieved. They have built a community of artists and consumers, to whom they can provide relevant information on new music and services through email newsletters. These aim to bring visitors back to interact with the site, thereby maintaining the existing active consumer network. Various features of the site take advantage of the open format of the MP3 file, as well as the ability to collect and send bulk emails, facilitating the passage of information throughout the network of consumers, as well as through the entire global network, allowing different networks to connect, expand

and grow. This has the effect of allowing information to achieve a state of ubiquity, which drives up the value of that information in a networked environment. This is the case with information, advertising or music related to a company such as MP3.com, where the value of the information, the company, and the site, increases with ubiquity. It is therefore important that an artist promotes himself in the best possible way within the site in order to gain an audience from the visitors to the site, as well as that the site itself continues to draw in visitors and convert them into active participants.

It is possible for an artist to promote himself through a dedicated Web site without being affiliated to a site such as MP3.com, but it may prove to be more difficult to accrue visitor counts, or 'traffic'. The concepts and techniques outlined above are essential in this task, and again, the most important idea is that the value of a network increases with membership. This is the motive behind *webrings*; communities of people who display each other's promotional banner adverts on their Web sites. This has the effect of referring a visitor to another artist's site in the hope that that artist will refer another visitor back.

Collecting names and addresses in order to compile a mailing list is not a new concept, but the ability to easily collect and send bulk emails from a Web site has made this a more efficient and comprehensive promotional tool. It is usually easy enough to obtain a visitor's email address through small incentives such as entering the names into a prize draw. This information may then be used at a later date to inform a potential market of relevant news or activities relating to that artist; for example, the recording or release of a new song, or performances. If, as stated above, the value of information increases with ubiquity, then it is important to collect as much information about an artist's potential audience as possible, and then spread promotional information far and wide. It is also important for an artist to build a relationship with his audience, and to encourage his audience to communicate with one another, thereby building a community around that artist. These ideas have all been applied to the above example of MP3.com, but it is important to stress that techniques such as this can be adopted to great effect by individuals for minimal cost if adequate time is applied to these tasks.

As well as helping independent bands and artists gather an audience, online viral marketing can be added to a record company's list of promotional tools to greatly enhance sales. For example, Interscope Records used various techniques to

build up anticipation for their release of rap artist Eminem's album, with the result that it sold 1.76 million copies in the first week of release.[16] The record company posted downloadable clips of the album tracks on the Farmclub site[17] before the album was available for purchase, as well as gathering email addresses to inform large groups of fans about upcoming events such as Eminem's appearance on MTV. They also gave away other promotional material such as digital postcards, screensavers, browser add-ons, as well as releasing a new level for the video game Quake, featuring Eminem fighting another rap artist Dr Dre. Elektra Records used similar online promotions for sixteen of the label's releases in late 1999.[18]

Online promotion can therefore be effectively used by any artist, site, record label or management company to help build anticipation and desire for a product before it is commercially released, or to generally build traffic to generate an online audience and potential market. It is most effective when used in conjunction with offline promotion;[19] this is amply demonstrated by large Internet companies who invest large sums of money in offline promotion such as billboard and television advertising.

Distribution

This is the process of getting music from the producer to the consumer. As described in Chapter One, the term is traditionally used to describe the manufacture of CDs and cassettes, the shipment to distribution centres and subsequent delivery of those items to the entire network of retail outlets, both domestically and internationally.[20] This is a huge task to co-ordinate, and is fraught with many difficulties such as forecasting sales figures, getting the right number of phonograms to the retail outlet at the right time: if too many CDs are delivered then they become useless stock – if they are not delivered at exactly the right time, then demand cannot be supplied. The scale of expenditure to manufacture and distribute product to the retail outlets is enormous. This is an area of the music industry where the Internet has the potential to completely change current practice.

As discussed in Chapter Two, developments in digital compression formats such as MP3, as well as Liquid Audio, Microsoft Audio and Real Audio, have enabled files which combine high quality audio with small file size. This facilitates the transmission of such audio files over digital networks, allowing both download

and upload of audio files to and from a user's local hard drive. Although this has encouraged many people to experiment with new ways of consuming and sharing music, it contains the kernel of a model for audio distribution which, if harnessed correctly, has the ability to completely alter the way in which record companies disseminate their product. The implication is that if a digital audio file can be electronically purchased and transmitted over a network, then stored and played back on a compliant consumer electronics device, then distribution could change from a resource-, labour-, and cost-intensive process of manufacture and delivery of physical goods, to a more efficient and cost-effective system of electronic delivery on demand. This distribution model requires only one electronic copy of a song to be encoded from the master tape, to be stored on a company server and made available for streaming or download, bypassing the need for physical sound carriers (such as CDs and cassettes), as well as the entire costly industrial manufacturing process. It would eliminate the need to forecast sales figures in order to decide how many CDs to manufacture, and subsequently the wasteful over-production of a product which did not meet expected sales figures. If adopted outright, this model of electronic distribution and purchase would also render obsolete the process of transport and delivery from manufacturing plants to warehouses, and subsequently to retail outlets. This system is potentially extremely efficient and cost-effective in comparison with the traditional manufacture-distribution-retail chain which claims 70% of CD retail prices,[21] leaving the remaining 30% to cover all other record company and artist costs, including personnel wages, production and promotion expenses, legal fees, membership of relevant institutions, and any other expenses incurred in the running of a record company.

As noted in the previous chapters, the major labels have been reluctant to release their catalogue in digital format until adequate systems for protection of digital copyrighted works become universally available. The first company to provide such a solution was California-based Liquid Audio,[22] who provide an end-to-end software service for mastering, serving, distributing and playing copyright-protected, professional-quality music over the Internet.[23] As of June 2001, the major labels have been unable to further delay the move towards online delivery, as the success of Napster has forced them to take introductory steps to releasing their catalogues in digital formats. BMG tried to turn Napster into a *bona fide* distribution service, but such plans now seem unlikely. AOL Time Warner, EMI and BMG have

now partnered with Real Networks to form MusicNet, while Vivendi-Universal and Sony are using Microsoft Audio as a platform for their PressPlay service. Both services plan to release record company back catalogues for streaming access and download, though both are still in the planning stages. Additionally the major labels have access to a proprietary high speed network through which they can electronically deliver their music to retail outlets on demand, whereupon the music is written to CD with in-store CD burners.[24]

Regardless of major label hesitation and their slowness to adopt the new technologies, many people have embraced digital distribution despite the lack of security associated with open file formats such as MP3 files. Many sites, such as MP3.com, are founded on the ability of musicians and artists to distribute their music electronically, and many online record companies and retailers have tested various business models with varying success. Independent musicians, or those who are not under contract to a record company, are among those to benefit greatly from the ability to distribute music electronically; it provides them with access to a global distribution network, as well as a potentially global audience, both previously inaccessible to self-managed artists on a budget. They are not required to undergo the costly activity of CD manufacture – if a consumer requires a CD then it can be manufactured and delivered to order by a site such as MP3.com, which then divides the CD retail price between the artist and the company. Alternatively, the proliferation of affordable consumer CD writing devices lays the option of CD manufacture at the foot of the consumer, who may compile a CD from his download collection on his computer.

In summary, the current position is one of transition, where established practices continue and emerging practices evolve. Although the long term model of secure digital distribution may not yet be fully developed and implemented, the major labels are working towards it. In the meantime, a market for 'insecure' music files has emerged and prospered, demonstrating a huge consumer demand for digital music as well as providing independent artists with previously unavailable tools for efficient global distribution of their music.

Consumption

Computers and network technologies have also begun to change the ways that people select and consume music. In the established model of product consumption, the record-buying public select music they like from that which they hear, see or read about in the media complex (radio, TV, magazines etc.).[25] They must then visit a music retail outlet in order to purchase a CD or cassette of that music. However, the media presents only a small percentage of existing new music to the public, the selection of which is largely influenced by a major company's market share and their control over the processes of promotion and distribution, as well as over retail outlets.[26] A consumer's purchase decision is therefore directly affected by a record company's economic power and dominance in the media complex. In contrast, the world of online music is currently almost completely lacking in corporate power and influence, instead being comprised largely of independent producers promoting and disseminating their own music. The means by which a consumer may consume music through the Internet can be roughly divided into four main categories: CD mail order sites, streaming audio sites, audio file download sites, and file sharing applications.

1. CD Mail Order Sites

Sites such as CDNow[27] act as online music retail outlets where the consumer may browse or search music by artist, title, genre or record label, with the ability to preview tracks via streaming audio. The facility is then available to purchase the CD via electronic transaction, which is then sent to the consumer's home address. This allows the consumer to listen to and purchase music from the comfort of his own home rather than visiting a brick-and-mortar retail store where it may prove difficult to find desired music. The benefits to the consumer are:

a) The ability to preview tracks in streaming audio at the click of a mouse allows the consumer to conveniently listen to music out of sheer curiosity with only a little investment of time and attention. This puts the consumer in a position to

hear a more diverse range of music than would traditionally be presented to him through the 'established' media complex and high street retail outlets.

b) The consumer's potential to discover favourable new music is heightened by a site's ability to recommend music based on a consumer's musical preferences. The consumer can therefore use the above convenience of audio clips in conjunction with recommendation facilities to search for and listen to more specific styles of music, making his browsing time more productive and efficient, and his purchase decisions more informed.

Jupiter Communications estimated that by 2003, online sales of traditional recording media will account for $2.6 billion, capturing 14% of the total US retail music market and representing a major threat for brick-and-mortar music retailers.[28] This also represents a consumer recognition that online retail sites such as this offer a more convenient and productive method of music selection and purchase than offline outlets.

2. Streaming Audio Sites:

The development of streaming audio technology has fuelled a boom in online broadcasting of all types of media content. Since Real Networks[29] developed their streaming Real Audio format, thousands of online 'radio' stations have emerged, specialising in every conceivable musical genre and sub-genre, as well as spoken word channels including political comment, news, sport and entertainment.[30] The ability to stream video has placed the Internet in the arena of digital multimedia entertainment, giving consumers the opportunity to watch programmes, films, video footage, interviews and a vast variety of content from their desktop, and over 350,000 hours of live sport, music, news and entertainment are broadcast over the Internet per week using Real Technology.[31] However, the world of online media content differs from the traditional broadcasting media in that it is not yet controlled and dominated by multinational conglomerates or government regulation. The effect of this is twofold:

a) Independent producers are able to expose their work to the public without requiring the financial backing of a large corporation to position their work in a commercial context. Just as the major record companies enjoy a dominant position within traditional radio programming as discussed in Chapter One, large corporations are more favourably positioned to purchase expensive licenses and subsequently dominate the radio spectrum with an unlimited number of national stations,[32] with the result that access to the radio spectrum by smaller independent stations is denied. Online broadcasting has presented an opportunity for an unlimited number of independent producers to bypass the corporate broadcasting oligopoly that exists in the radio industry, and set up a broadcast station without the need for expensive or unattainable permits or licenses.

b) The control of the radio spectrum by large media corporations has characterized national broadcasting as commercial and mainstream, with little provision for diverse, minority, non-commercial or educational broadcast programming.[33] The proliferation of online independent producers has resulted in an assortment of new types of content, available on demand, which may not have been suitable for national radio or television programming. For example, on the front page of the Real Networks' *Guide* is a link to a one-minute tour of the Museo Nacional del Prado (Madrid), as well as NASA TV, comprising content provided by the US space agency,[34] and the NetRadio Network[35] broadcasts music on 120 different genre channels. The fact that independent producers are permitted to broadcast any content without restrictions, coupled with relatively low start-up costs for the required computer hardware and software, has allowed less commercial and niche markets to be serviced in a more comprehensive way than seems to be possible in a corporate setting.

Therefore the consumer has access to a world of content in various formats that would not be available on network television or national radio. Some of the content is live, and some is archived,[36] and is therefore available on demand so that a consumer can view or listen when it suits him, rather than relying on a set programme schedule. Additionally, on many sites which offer live programmed audio content, continually updating playlists[37] are available which provide the listener with information on the tracks being played, as well as a link to the relevant

pages of online music distributors such as CDNow, in case the consumer wishes to buy the CD. Streaming audio sites, and especially radio station sites which offer continuous live programmed content on different specific music genre channels, offer listeners the opportunity to set their listening preferences as wide or as narrow as they like, allowing them to listen when they like, and to seamlessly purchase the CD if they wish. This marks a significant increase in convenience with which a consumer is able to discover, select and purchase a wide range of music in comparison with the need to rely on the established media to discover new music, in conjunction with brick-and-mortar retail outlets to purchase it. Furthermore, as was discussed in Chapter One, the established radio and media ignore more varied and diverse tastes in a bid to cater almost exclusively for a homogeneous mainstream record-buying market.[38] The diversity of content available on the World Wide Web has the potential to convert those who fall outside of that market and who have ceased buying music due to a lack of interest in the music presented to them, into active record buyers if they are easily able to access the appropriate content.

Statistics demonstrate that as of July 2000, the active world market for streaming stands at 60 million people, and recent major Internet broadcasts, such as the Clinton enquiry and the NetAid Concert, attracted an audience of 2 and 2.5 million people respectively.[39] The BBC also estimates that the size of its audience for streaming content is increasing exponentially by 100% every four months, with a current audience of 1.5 million people per month.[40] This indicates that although consumer penetration of Internet audio and video does not match that of television and radio, it is rapidly increasing as an alternative medium of entertainment.

3. Audio File Download Sites

In the same way that the world of online broadcasting is free of corporate control and government restrictions, so too are sites which host the music of independent artists. In contrast with the control that the four major record labels exercise over the distribution and consumption of music CDs,[41] the World Wide Web has provided a platform for independent artists to produce and release work without the degree of commercial pressure that major record companies would apply to their artists. As a result, sites which offer the music of independent artists tend to offer either a more diverse repertoire than that represented by the four major companies, or focus on a

less mainstream minority or niche market. Download sites such as this can roughly be divided into two categories:

a) Sites hosting commercial music: for example, Emusic.com, which hosts the music of professional and well known artists, and which requires a financial transaction before authorising download. The consumer is therefore *buying* the audio file, with the option of buying individual tracks or an entire album in this manner. Although this may appear to be a new pattern of music ownership, the real difference is in the method of discovery, purchase, delivery and the format of the music. The consumer still purchases a copy of the music which he stores locally (on his hard drive or backup device), and which he is permitted to play at will in a non-commercial context. During 2001, however, the consumer equipment available to play audio files is largely restricted to the personal computer or portable playback devices such as the Diamond Rio. However, the present market for audio file playback devices is growing rapidly, and a variety of consumer devices will be produced by electronics companies as long as there is a demand for them.

b) Sites hosting non-commercial music: for example, MP3.com, Peoplesound and Farmclub. Such sites host the music of amateur and semi-professional artists who do not charge consumers to download their music – in this instance the consumer is acquiring music for free, and is legally permitted to listen to, copy or distribute that music at will due to the lack of restrictions placed on it by the copyright holder. Some sites are also experimenting with services which allow the consumer to store his music collection on a remote server, thus allowing the consumers to listen to his music in any online location.

The notion of free music ownership without usage restrictions is a concept that has only been economically feasible since independent producers have been able to produce their own music and make it available to the public, for relatively little cost, as file downloads on the Internet. The rapid growth of non-commercial music sites, coupled with the consumer's experience of flexible and versatile usage patterns associated with file formats such as MP3, developed an ethic among online music consumers that music should be free and unrestricted. While many amateur and

semi-professional producers accept these flexible usage patterns as a means of valuable promotion, the traditional music industry's strict control of copyright has been threatened as consumers have applied the 'free music' ethic to copyrighted music. As has been seen, this has caused much contention among the music companies, not least of which has been focussed on the next type of music activity.

4. File-Sharing Applications

In 1999 file sharing quickly became a hot topic as the notorious *Napster* application made it easier than ever to participate in what the record companies saw as 'rampant piracy' by facilitating the mass exchange of unauthorized music files. Napster does not fit into any of the above categories as it is not so much a site, as a service. It relies on what was described as peer-to-peer technology (though it is not strictly P2P), allowing users who log onto the Napster network to connect to each other's personal hard drives, and search for and download specific audio files. Napster's user base rapidly rose to over 20 million, eventually reaching a peak of around 50 million registered users in January 2001. Its popularity and exposure were fuelled by high-profile litigation drawn up by both rock band Metallica and the RIAA. The complexity of the issues involved made it extremely difficult for the relevant copyright laws to be applied to such a new and decentralized form of technology, although eventually the courts found in favour of the music industry. In the wake of Napster's demise several true peer-to-peer applications have been developed, most notably Gnutella and Freenet.

In summary, computer and network technologies are beginning to allow for more informed, convenient, flexible and diverse selection and consumption of music in different ways. Although the forms of consumption outlined above have been distinctly categorized, a user may utilize one or all three methods of consuming music. Consumers are being empowered with more options than they have traditionally had, to find what they want in a way that suits them. As the Jupiter research mentioned above shows, the convenience that this offers adds value over brick-and-mortar retail outlets, and predictions are that online consumption is expected to increase gradually but consistently.[42] However, consumption through traditional outlets also continues to increase: Soundscan sales figures (which

measure units sold at retail outlets) show that the music industry in the US has grown about 8% over the first quarter of 1999.[43]

Moreover, the above categories of production, promotion, distribution and consumption are not separate, but endemic with one another. For example, new distribution structures stimulate changes in patterns of consumption. Sites such as MP3.com are simultaneously centres for artist promotion and distribution, as well as places of consumption. New modes of production stimulate new forms of, and new markets for, music. The opportunities for low-cost production and distribution have enabled more people to become *producers*, rather than just passive *consumers*; more people now produce their own content as well as listening to and interacting with others' content. The significance of this is that these processes are increasingly becoming feasible without the assistance of traditional intermediaries, and in the absence of major label activity in the online environment, a thriving independent online music industry has evolved which is built around utilising the benefits of the new technologies rather than attempting to suppress them.

Chapter Five: The Independent Artist's Potential to Work with New Technologies

Chapter Four took the focus away from the conflict between the major record companies and individual users to examine how computer and network technologies are democratizing the processes of production, promotion, distribution and consumption. As the record companies command the limelight with regard to most discussions of piracy, intellectual property and digital distribution, one party often gets overlooked: musicians and artists. This chapter examines how record company policies and strategies can affect artists, and analyses the ways in which a variety of artists have made effective use of the Internet as a means to attract, develop, consolidate and capitalize on an audience.

First of all, the position of the artist must be determined in the equation which pits fluid content and the free access to information against issues of piracy and the control of IPRs. More succinctly, on which side of the fence do the artists stand – pro-Napster or against? Obviously this is an over-simplified view of the situation, and the diversity of musicians which constitute the popular music arena cannot be treated as a homogeneous mass who all have the same opinion. Although the thesis has so far focussed on the dichotomy between the music industry and the public, the following section briefly expands on the shared interests between artists and record companies. This is followed by an analysis of the antagonisms between the two parties, and this will inform the subsequent diversity of opinions surrounding Napster usage.

The primary interest which both artists and record companies share is the desire for the artist to become well known and internationally successful. When record company A&R personnel scout for talent, they are looking for an act that has the potential for commercial success. Similarly, when a band hopes to attract the attention of A&R personnel they expect that signing to a record company will bring about commercial success, fame and subsequent fortune. Bound up within these ideas are two main interests: that the music which the artist and company produce together will be disseminated to the widest possible audience, and that the maximum revenue possible is generated as a result. These are the combined interests of the

author and publisher as outlined in the copyright bargain in Chapter One. To this end, it is in both the artist's and the company's interest to promote the work to its fullest potential, and sell as many copies of the work as possible. It is also in both their interests to create new sources of revenue which may be extracted from a work in order to exploit the maximum commercial value of a work; this has taken the form of corporate lobbying for wider copyright protection [see below].

To a large extent, the success of the relationship between the artist and the company depends on the company's ability to make a commercial success of the artist's music; if the music tops the charts then both parties are happy, but if it never even gets radio airplay then the contract may be revoked at the first available opportunity. Therefore successful artists generally approve of the system which made them successful, while those for whom success is elusive may be cynical about the way the music companies operate. Since 85% of signed artists are commercial failures, the majority of artists are likely to be less than happy with the current system.

The Effect That Corporate Strategies for Control Have on Artists

Chapter Three identified the strategies adopted by the major corporations in their attempt to extend their domination of the existing offline music market into the online arena. Some of the techniques outlined (such as litigation and co-opting new entrants) are aimed at increasing corporate dominance over competitors; however, some of those actions can also adversely affect the artists whom they represent. These include such techniques as tightening control over IPRs by extending the term of copyright, lobbying for copyright reform, and enforcing copyrights.

1. Lobbying for Legal Reform to Tighten Control of Copyrights

Although the tightening of control over copyright should theoretically benefit both parties in the artist/publisher partnership, in November 1999 the RIAA pushed an amendment to the 1976 Copyright Law through Congress, known as the 'Works for Hire' amendment, without any consultation or debate among artists or those representing them.[1] Under the 1976 U.S. Copyright Act, creators are given the

opportunity to reclaim their work 35 years after the initial copyright is first signed over to the record company.[2] The amendment, which was passed (somewhat obscurely) under the 1999 Satellite Home Viewing Act, stipulated that sound recordings made as works for hire would permanently reside under control of the record company, allowing them to exploit the rights in recordings signed over to them forever. Additionally, an artist who recorded a 'work for hire' would be required to sign his or her domain name over to the record company. This put artists in a position where they would never be able to profit from either their works, or their name, as a recognized brand, on the Internet. A body of artists including Don Henley and Prince, as well as the Recording Academy, were outspoken enough to get the Act repealed. Prince opines that:

> At the core of the issue is the notion that the artist's work, the composition of songs, the writing of lyrics, the recording of his playing – all those activities which, in a real artist, draw their essence from the very soul and heart of the artist and are an expression of his/her invaluable *gift* as a creator of new works of art – all those things amount to no more than the repairs that your plumber did when your dishwasher broke down last night and needed a belt or a screw replaced. The very idea...speaks volumes about the cynical, all-for-profit approach of record companies.[3]

Courtney Love of rock band Hole also has her opinion: "What is piracy? Stealing our copyright reversions in the dead of night while no one was looking, and with no hearings held, is piracy."[4]

2. Enforcing Copyrights

For those artists who do derive a significant revenue through copyright royalties, many are in favour of the privilege to enforce their intellectual property rights, and as such strongly disagree with file sharing over services such as Napster. Most notably, rock band Metallica filed suit against Napster for copyright infringement in April 2000 when unfinished tracks from a forthcoming album were made available by users on the Napster system; others opposed to Napster include Dr Dre, Madonna, Alanis Morissette, Elton John and Paul McCartney. The objection that such artists

have against file sharing is that it breaches the creator's right to authorize the copying and distribution of his work, and his or her right to control how it is made available to the public. When unreleased material by Madonna was made available over Napster, her manager said: "The music was stolen and was not intended for release for several months...it is still a work in progress. Ultimately those sites that offered a download of Madonna's music are violating her rights as an artist."[5] In this instance both artist and company are united in their opinion that pre-release exposure breached the author's rights to authorize reproduction and distribution, but more importantly that an aspect of the author's *droit moral*, or moral right, had been violated. Moral rights in general allow the artist to determine that the presentation of the work to the public is consistent with his or her artistic integrity, and this specific instance is an infringement of the *droit de divulgation*, which gives the author the right to determine when and whether a work shall be published. Metallica's drummer Lars Ulrich underlines the ethical issues surrounding this debate: "To me the core issue is about people's perception of...what their rights are as an Internet user and how it relates to intellectual property. It really is about this perception [that] if it's intellectual do I have a right to it for free because technology allowed me to get it."[6] This again states the position that consumers have a responsibility to respect the wishes and moral rights of the artist.

Some artists feel more strongly about the enforcement of their rights than others. Although Metallica are unusual in that they (rather than their record company) own their IPRs, most artists under contract to major labels do not own the rights in their sound recordings. As discussed in Chapter Two, most musicians receive a negligible revenue from copyright, and as such are set to lose very little from Napster's disregard for copyright. Pete Townshend of rock band The Who recognized that by assigning rights over to the record company, an artist has very little influence over the way his work is exploited by others.[7] Singer Courtney Love of rock band Hole advocates MP3 downloads, recognizing that file sharing can provide exposure for her work and that MP3s promote music and boost sales. However, she is opposed to Napster not on grounds of violation of her copyright, but because Napster as a commercial company is behaving in the same way that record companies operate: by benefiting financially from artists' work without compensating those artists.[8]

On the other hand, when Radiohead's album *Kid A* became available on Napster prior to release, the band said they were "quite flattered" that there was such a huge interest.[9] Other advocates of Napster are Fatboy Slim, Limp Bizkit, and MP3's most outspoken proponent, Chuck D of hip hop group Public Enemy, who has embraced the medium of the Internet and MP3. His opinion is that "Napster functions as a new radio for the new decade and millennium, allowing users to sample all kinds of music. But unlike current radio stations, which work with the current big music labels, Napster is a truly democratic medium where the individual Napster users drive their musical experience."[10] Here he counters the view of the record companies that file exchange leads to lost revenue by identifying the increased exposure and promotional capacity that file sharing can provide on a global basis. In the same way that radio exposes the public to an artist's new music, he says, file exchange allows an individual to sample music before they decide whether to buy it or not. Additionally he sees the MP3 movement as allowing both unsigned and established artists the opportunity to work independently of record companies: "Napster allows these artists and labels, for the first time, to reach millions of music enthusiasts for a fraction of the costs required by the mainstream recording industry as it currently exists. With very little capital, artists can record, market and sell their music through the Internet."[11] The advantages of this are that an artist can work to achieve his own goals, rather than those of a profit-oriented corporation.

In summary, both the inability to control copyright on the Internet, as well as corporate and legal moves to enable copyright enforcement, are contentious issues not only among record companies and individuals, but among the artist community as well. Many artists wish to retain the right to control the way their music is made available, as well as to assert the copyrights in their music, and Napster potentially violates those rights. Additionally, Napster the company is benefiting financially from artists without compensating them. Other artists argue that by assigning their IPR over to a record company, artists lose control over their rights anyway, and for most musicians copyright has proved an inadequate source of revenue, so abandoning attempts to control copyright will have little or no effect. Some enjoy the exposure that file exchange can provide, alleging that the benefit of exposure outweighs any lost sales. It is clear therefore that opinions are based on principles rather than any conclusive evidence as to the pros or cons of unregulated file

exchange. The above information also seems to confirm that although a few major superstars (such as Madonna) can benefit from copyrights, the negligible impact that copyright has on most artists means that issues surrounding protection of IPRs remain a predominantly corporate interest.

The corporate tightening of control over IPRs is also part of a wider climate of industry practice which can adversely affect artists. As discussed in Chapter One, the concentrated nature of the major label recording industry has increased the need for those companies to maximize profits, resulting in an increased reliance on hit records to recoup investments on all artists. This system works at the expense of those acts which do not fit neatly into the mainstream, and who are unable to attain those massive sales figures. For such acts, this usually results in a lack of interest in and drive behind their careers, ultimately concluding in unfulfilled and unrenewed contracts. Although the common interest of the artist and the label is to attain success, 85% of a record company's acts do not cover costs; the majority of acts therefore have an unfulfilled relationship with the company. Matt Johnson of The The, talking of the effect on artists that the Seagram-Universal/Polygram merger had, said "They have a huge artist stable raped from three established major labels and two thirds has got to go, bringing it down to a trim, wealthy machine made up of just the plump ripe sellers."[12] Therefore such industry concentration alienates much of the artist community which, at one time, the record companies were able to support.

The financial arrangements between artists and record companies are also a common source of contention. Artists traditionally receive around 10% of the wholesale price of each CD sold, while the record company receives 90%. However, as any expenses incurred by the artist (in the production and marketing of their music) are recoupable against CD royalties, the artist will not receive any royalties until these expenses have been recouped through CD sales. The vast expenditure that is characteristic of record labels means that musicians who sign to a record company are unlikely to receive any ongoing payments resulting from CD sale royalties unless they become one of the industry's few highly successful international artists. Many moderately successful and even well-known artists only receive an initial moderate advance with no further payments from the record company. This is substantiated in a statement by Roger McGuinn of The Byrds, to the U.S. Senate Judiciary Committee, which states that over a 36 year period of recording 25 albums, some of

which sold over 500,000 units, he has received only modest advances on each recording, with no subsequent royalty payments.[13] According to Whitney Broussard, a U.S. music lawyer, musicians who make a major-label pop-music CD must typically sell one million copies to receive a royalty cheque. "A million units is a platinum record [in the US]. A platinum record means you've broken even – maybe. The label would have grossed almost $11 million at this point, netting perhaps four million."[14] Additionally, the RIAA recently lobbied Congress to amend bankruptcy laws to make it more difficult for artists to declare themselves bankrupt, when in reality bankruptcy can be an artist's only defence against a draconian recording contract. For instance, pop artist Toni Braxton declared bankruptcy in 1998; although she sold $188 million worth of CDs, she was financially incapacitated due to a recording contract which paid her less than 35 cents per album.[15] Real life examples such as this, say independent artists such as Courtney Love and Matt Johnson, expose the type of biased arrangement which makes industry executives rich while artists live in poverty. Johnson said of his experience with a subsidiary of Universal Records,

> My real feeling is that much of the music industry to date has been little more than legalized thievery. From the deliberate miscalculation of album sales (and subsequently royalties) and the scandalous 'packaging' deductions standard in most contracts, to the 'miscellaneous' and numerous recoupable items that drain away any slim chance most artists have of ever recouping. These and many other accountancy tricks are intended solely to deceive the artist and relieve him/her of honest earnings whilst fattening the shareholder's wallet.[16]

Therefore although the interests of the artist and the record company should theoretically be aligned, in practice the large numbers of artists which bear the rough end of a record contract find that record company commitment to such interests is extremely fickle. Alongside the arguments proposed by the RIAA that piracy infringes artists' copyrights and thus deprives them of valuable earnings, counter-arguments are put forward by the artists themselves which show that copyrights generally only benefit the corporations, and that those companies operate a business in which artists and the general public are exploited for the company's own financial

gain. In the face of such discontent, the Internet has provided artists with an alternative medium to disseminate their music. Rather than having to agree to terms of major label exploitation, artists now have the option to use the global reach of the Internet for promotion and distribution. Below are two specific case studies of artists with completely different levels of recognition and status, which examine the ways that they have utilized the Web to further their musical and technological careers and interests. This leads into a discussion of the broader issues relating to artists and their relationships with intermediaries such as record companies and newer Web-based companies.

The Independent Unsigned Artist - Enrico Caporale a.k.a. Ripwrap

Enrico Caporale started writing electronic music using a MIDI set-up around 1990. This comprised a then-standard Atari ST computer driving a MIDI keyboard and drum module with various other pieces of electronic equipment, and in 1993 he formed a Manchester-based duo under the name of Ripwrap. Deterred by the policy of local venues requiring payment in order to perform, coupled with the unfavourable task of persuading unwilling venue managers and promoters to provide a live slot in an unsuitable context, they raised funds to initiate a club night called Boom Booom in which Ripwrap could be a focal point amongst a whole night's club experience. Although Boom Booom existed in its own right as an underground dance music club night encapsulating a wide range of people and ethics as well as a comprehensive mixed media environment, it was a vital means for Ripwrap to expose their music to an audience, in a context in which the music complimented the light show and décor, and vice versa. As Ripwrap and Boom Booom became synonymous with each other, names collected at the events to compile a mailing list could be used by both Ripwrap and Boom Booom to inform people of forthcoming events. Ripwrap also recorded their music to tape and attempted to sell it through independent local record stores on a sale or return basis, but with limited success.

Caporale had first become involved in the Internet in 1991 by participating in Bulletin Boards, and by 1994 he had built a Boom Booom Web site which included event information, a guest book, pictures, and information on Ripwrap. By 1996, as audio file compression formats were being developed, he began to format his music into Real Audio files and upload them to the Web site. As a self-confessed

technophile, he engaged in this early adoption as an investigation of the new technology, "it was like a new toy, worth trying out." As the Boom Booom events continued, so the Web presence became more comprehensive. Continuing his daytime work as lecturer and studio manager at Salford University, he wrote and recorded music and developed the Web site in his spare time.

In early 1998 the music department at Salford University purchased an entry-level web server to complement the main university web server, as well as a Real Audio server software package which was installed on the Web server. This allowed staff and students in the department to encode and stream Real Audio formatted audio files to multiple listeners over the Web. Caporale was among the staff at the university to configure and test the new streaming software, and subsequently utilized the available facilities to set up a regular Boom Booom web broadcast in order to provide listeners with an archive of DJ sets from the club nights, as well as providing himself with an opportunity to broadcast the Ripwrap material that he had been writing and recording. Through submitting details of the webcasts to events listings, as well as submitting details of the Boom Booom site to search engines and maintaining an active mailing list via email, he was able to slowly increase the amount of traffic to the site, and subsequently the number of listeners to the webcasts gradually increased.

Around late 1998 Caporale discovered the MP3.com site which provided a service whereby musicians could upload their music to the site in MP3 format. MP3.com was the first site of its kind to allow musicians to upload their music files and as such attracted a large user base before any other sites developed a similar strategy. By late 1998 the site had a massive database of artists as well as attracting around 1 million visitors per day,[17] which meant that it was possible for Caporale to build an audience from the aggregated traffic far in excess of any other audience he had acquired from all other means that had been previously available to him. It also placed him within a community of artists who were all in a similar situation in that they were collectively using the Web to leverage their position as independent artists. Visitors to the site could listen to artists' work, freely download it, and buy a CD of the work if they wished; the company would take orders for CDs, process the financial transactions, manufacture, and ship the CDs on request, to any address in the world, dividing the proceeds equally between the company and the artist. This had the effect of realistically opening up Caporale's potential audience from the local

club scene to a global market. It effectively provided him with a distribution channel which operated independently of the distribution networks that record companies and retail outlets exclusively maintained, with the result that a wider audience than ever before could have access to his music, and purchase it if they so wished. This whole situation fulfilled his reason for publishing his music on the Web; to make his music available and accessible to as large an audience as possible, and to act independently of the music industry. In common with many other artists on the Net, Caporale did not aspire to the 'old school' dream of securing a recording contract with a record label. His interest lay with underground dance music, which existed in a culture that he felt the record companies could never understand without changing its meaning and form. In line with many artists within the MP3.com community, he was critical of the exploitation and the narrow-mindedness which he saw to be integral to the very structure and heart of the music industry. Anti-industry feelings have raged through the discussion boards on the site as news articles have come to light exposing the superficial and greedy motives of the record industry. Visions of a label-free world brought about by the power of independent distribution on the Internet abounded, but not one to be swayed by rhetoric and hype, Caporale continued to investigate the technology and enjoy the freedoms that the Internet had given him.

Furthermore, the nature of his relationship with this publishing and distribution medium allowed him to continue his daytime career as lecturer and studio manager while making music as a part-time activity motivated by enjoyment rather than necessity, and which coincided with his interest in technology and the ever-developing landscape of the Internet:

> I don't have to be a full-time professional musician and I can be content with getting an income that directly relates to the amount of time that I spend on my music...I don't put all my energies into seeking a big record deal, I put my energies into posting my music up and getting something back from that, which is quantitative to the amount of time that I put in.

While this appears to run contrary to the classic young person's dream of becoming a superstar signed to a major record label, the above attitude is becoming increasingly common as well as attractive in its down-to-earth realistic approach, as many artists

have become slightly more knowledgeable about the ways that the record industry operates and how it profits from controlling the market and exploiting artists. The Internet has provided the musician with an alternative to that dream, which allows him to self-manage a musical career which has the potential to achieve a level of success which directly relates to the amount of time spent creating, promoting and creatively managing his music.

> The Internet fills in the lower but perhaps more steady income bracket, where I might make £200 a month from my music. No record deal could get me that... ultimately it is feasible to step up the amount of income – a certain amount of people do make a lot of money from publishing on the Net.

For Caporale, the important aspects of publishing his music on the Net were that this system for publishing and distribution had evolved which was alternative to the record industry, and which allowed him the freedom to make choices which suited his own life. He particularly appreciated the opportunity to have a direct and active line of communication with the people who were listening to his music. This was an aspect which was far less feasible when he had been performing live and selling cassettes through retail outlets. The ease and convenience of communication provided by email motivated people to send feedback to the musician where before they may not have bothered.

The Feasibility of Being an Unsigned Digital Artist

There is currently no organized or established method with which independent musicians who publish their music on the Internet may successfully attain an audience. Many artists such as Caporale a.k.a. Ripwrap upload their music to intermediary sites such as MP3.com on the premise that they can build an audience from the traffic generated by such sites. While some remain critical of the ability to build an audience and generate revenue from sites which host and freely give away music by tens of thousands of artists,[18] many artists have managed to do just this with little activity other than putting their music on their site or sites of choice.

MP3.com has been particularly pro-active in developing new services for both the artist and listener community, and pioneered a scheme known as 'Payback

for Playback'. This involves a total monthly pay-out of $1 million by the company (generated by advertising revenue), which is divided between all the artists whose music has been streamed to users via the streaming MP3 'playback' service. The highest earning artist through this scheme during September 2000 was 303infinity, who earned $23,000 during that month. This equates to between $500 and $750 per day, or over 1,200 'listens' per day,[19] and although the Payback scheme is not affected by CD sales or file downloads, such high-earning artists can achieve around 4,000+ downloads per day and sales of around 40+ CDs per week.[20] These are exceptionally high earnings, but it illustrates that it is possible to generate a revenue stream on the Internet without the help of a record company. Caporale's own statistics indicate that in July 2000 he earned $520, receiving an average of 197 'listens' per day. Even high-earning artists such as 303infinity did not set out with the intention of becoming professional musicians or earning a living from posting their music on the Internet. For many, as with Caporale, the production of music has been considered a hobby or a passion which has traditionally yielded few financial returns, but which can unexpectedly become a source of revenue in the online environment. Even among the high earners, the financial gains from MP3.com were not considered a stable long-term income and on the whole were supplemented by additional income from other sources.[21] Nor did they position themselves as fiercely independent of record companies – most of those artists contacted said they would consider a contract with a record company, but in line with Caporale, stated that their current situation has given them a position of solid negotiating power which would have been unavailable without the dissemination capabilities of the Internet.

While some artists are happy to operate independently of record companies, others use the Net as a way to increase their chances of attracting the attention of record company A&R executives. For example, pop band Fisher generated a large Internet following through MP3.com and Farmclub, with the result that they were offered a recording contract with Farmclub's Interscope record label (a subsidiary of Universal). Artists now have the opportunity to upload their music to several sites with the knowledge that record company A&R staff sift through the most popular acts in the hope of discovering a marketable talent. This is true of the Farmclub site, which is owned by Universal Records, as well as Garageband.com and others, and for many it makes the dream of a recording contract a little more realistic. Fisher's singer put it like this:

> The labels used to gauge their decisions on audience attendance in clubs (a la Poison, Ratt, etc.) then they started gauging them on independent record sales (a la Hootie & the Blowfish, Nirvana, Green Day). It is only logical that their next step would be to gauge it on fan base generated from the Internet, which is what we established.[22]

Yet other bands prefer not to put their music on intermediary sites for fear of getting lost among the thousands of other artists on the site. London-based Stargirl, for example, chose to rely on their own 'official' site as the only place for visitors to listen to their music and to access information about them. In this way they could promote their site as a destination and drive traffic to it, with the result that they sold almost 4,000 copies of their first self-financed single, with the main market being in the US.[23] Neither is the record deal, or recognition as a composer/lyricist, the only aspiration for artists – sites such as Licensemusic.com are emerging which aim to license original music to content partner companies to include in TV, films and shows.[24]

In short, an abundance of opportunities are arising out of the online environment where an increased volume of audio/visual content allows artists to make their works available in a variety of ways, while maintaining their ownership and control over their works. While this can work to the benefit of unsigned artists, the artists to benefit most from the reach of the Internet are undoubtedly those artists who have established a brand name through the traditional music industry, but who now operate independently. Such artists can attract traffic to their site by virtue of their name and reputation alone. A particularly creative and inspiring use of the Internet as an artist's tool is provided by David Bowie's site.

The Independent Established Artist - www.davidbowie.com

David Bowie started his career as a recording artist in 1966, although his first recognized solo album, "Space Oddity," was released in 1969 on RCA Records. In the early 1970s he gained an international reputation as a groundbreaking songwriter and performer, and shot to media stardom with subsequent albums *The Rise and Fall of Ziggy Stardust and the Spiders From Mars* (1972) and *Aladdin Sane* (1973). His

dominant position in the media was fuelled by theatrical reinventions of his self-image to complement the Ziggy and Aladdin characters, and he continued to produce a constant flow of hugely popular and innovative material throughout the 1970s. After his *Scary Monsters and Super Creeps* album in 1980 his output became sporadic; during the 1980s he was involved with various projects but it was not until 1992 that he began to embark once again on solo projects that demonstrated a return of the creativity which had made him so popular in the 1970s. Bowie was one of the first artists to broadcast a live show over the Internet, and was the first major recording artist to post a new track on the Internet.[25] In 1996 he released an Internet-only single, *Telling Lies*, in 1997 he set up Bowie Art, a Web site selling exclusive prints and lithographs over the Internet, and in September 1998 he launched Bowie Net as an Internet Service Provider (ISP). Since then he has been actively involved in creating a Web site which not only provides his fans with access to information about his life, work and art, but which also acts as a hub for a community of Bowie fans throughout the world, as well as being a portal for an eclectic body of information, links and resources. There follows a synopsis of Bowie's site in order to analyse the ways he has used it to attract and consolidate an audience.

Some areas of the site are available to the casual visitor, while a Premium Subscription offers access to all content on the site. Members can also pay for additional ISP access. During February 1999 the site was receiving around 350,000 to 400,000 hits per week,[26] and during July 2000 the members area consisted of 2,000 subscribers. The site is sophisticated in design and rich in a variety of content which is continually updated and appended.

Open Access: Casual visitors are able to access several sections of the site from the front page, including *Bowie Art, the Interactive Remix Project, Bowie Banc* (where applicants can order a credit card with Bowie's face on it), and *the Bowie Net screensaver.*

Member Access: This provides access to five complete areas of the site; *News, Discourse, Bowie, Outside*, and *My Account.* In order to demonstrate the amount of content on the site, two sections are outlined below.

The 'Bowie' Site Menu:

This section is a comprehensive record of Bowie's spectacular career, with additional content which provides a more extensive overview of Bowie as a

personality than his records alone could do: journal entries, the family album, Bowie's favourite sites and books give the Bowie fan an insight into Bowie's personality and his life. In this way, fans are allowed to feel that they have come to know Bowie much better than they would previously have been able to do prior to the site. The sheer amount of content in this section alone is impressive, and is comprised of the following components:

Chronology: A catalogue of Bowie albums, compilations, films, film soundtracks, tours and videos. The album catalogue, for example, is a complete record of Bowie's work, with every song recorded available for listening via streaming Real Audio, with CD purchase options at CDNow. Additionally there are photos, lyrics and videos for selected tracks from each album. This section consists of over 100 pages.

Evolution: a three-page condensed history of Bowie's career.

Journal: Regular diary entries from Bowie himself, detailing thoughts, events and activities in his daily life, often including photographs of places he visits or people he meets. This section also includes: family album (a gallery of rare and previously unreleased photos of Bowie's life and his family); personal links (links to Bowie's favourite sites on the Web); and Bowie's booklist.

Exclusives: Exclusive content and material from all periods of Bowie's career. This section includes extensive photo galleries from long-time colleague Tony Visconti, photographer Mick Rock, as well as Bowie's own photo gallery of friends throughout his career. It also includes video footage of Bowie's 50th birthday concert at Madison Square Gardens, New York, and information on various projects he is working on.

Another part of the site, the *'Discourse'* section, provides different ways of bringing together people who share a common interest, and of creating a feeling of community. It is subdivided into the following areas:

Bowie Chat: Organized chat events between members of Bowie Net and specific celebrities such as Debbie Harry, Placebo, Boy George and Ronan Keating. These events are often hosted or attended by Bowie, who also contributes to the conversation.

Discuss: Several different bulletin boards which come under a variety of categories encapsulating almost any subject upon which a discussion can be based.

Members: A full record of self-completed Bowie Net member profiles which indicate the personalities, interests and lives of the people who comprise the online community.

Gallery: Where members are allowed to post any content they like or have authored, such as images, poetry, prose, or music.

AskDavidAsks: Fans are able to submit a question to Bowie who will, if the question is selected, reply personally. In addition, Bowie asks a question of his fans who are able to submit answers.

By organizing chat forums with specific celebrities, Bowie adds interest and value to the chat events over unorganized chat sessions, maintaining a focused interest for people to generate discussion and interact with each other. By appearing in the chat sessions in person or under pseudonym he may also entice more people to join in and interact. The discussion forums provide a continuous thread of conversation and interaction, ensuring that the people involved become an active part of the site, returning to keep track of current discussions and ideas. Additionally, through the 'Members' and 'Gallery' sections they can contribute to the site, imbuing it with some of their own personalities, and to some extent shape it to their liking. The number of Bowie Net members who visit and return to the site influence the value of the site through an increased sense of community mediated through discussion and artistic contribution. By encouraging people to interact with the site and each other, the site becomes valuable not only as a place of consumption, but as a place of intellectual exchange, where people can meet and communicate with one another on topics of similar interest. Although Bowie's music may be the initial reason for a

visitor to access the site, the visitor's ability to interact with it, become part of a community, and to personalize his experience while there makes him more likely to return to continue the relationship that is constantly being built and strengthened between the visitor and the site. In some ways this is the vital part of the site, the part in which members keeps it fresh, active and thriving, and as such they are empowered as a community. They make the site, and subsequently Bowie's presence on the Net, as impressive as it is.

The ability for Bowie to communicate directly and spontaneously with his fans, and vice versa, has only been possible to this extent through the medium of the Internet. Examples of the ways he has utilized this ability are both imaginative and creative. He organized a 'Fanmix', where Bowie Net members could receive a webcast from the recording studio and listen to different versions of a song that Bowie was recording. Members were then able to make suggestions to Bowie in real time and to vote for the version they liked best, which was then subsequently released on the album. He arranged a contest in which members submitted song lyrics based on the title "What's Really Happening," and the winner had their lyrics incorporated into a song which was then recorded and released by Bowie with a joint song-writing credit. The competition received up to 1 million entries per week, with 25,000 physical (pen and paper) entries.[27] He released an Internet-only double CD called *Liveandwell.com* which was freely available only to members, and was a collaborative effort between Bowie and the Bowie Net community – all packaging, graphics and liner notes were supplied by members, creating a collage of designs and anecdotes from the 'Earthling' tour from which the CD was recorded. Through projects such as these and more, members are allowed to feel more valuable to, and 'connected' with Bowie – as his career has moved from record companies to the Internet, members are now able to become more a part of his work, as well as being valuable to Bowie himself as an active and interactive audience which can directly influence choices he makes, and who can provide instant feedback and communication when relevant. Bowie himself states the motives for establishing the portal as being innovation rather than profit:

> My entire motivation was to do something new...the fact is I can't even buy a packet of cigarettes on the proceeds from this thing. There's going to be an awful lot of labour of love attitude about it. What I want more than anything

> else is for it to be innovative. We like thinking we are on the bottom rung of something so impressive and new and innovative that if I'm not a part of this I'll never forgive myself.[28]

It is clear that he is giving his consumers what they want – a glimpse into his world and, through subscription privileges, a feeling of being an 'insider'. At the same time he is successfully building a relationship with them, maintaining their loyalty, and additionally providing himself with a platform on which he can market-test new material before releasing it to the wider market.

Other Independent Established Digital Artists

Bowie has been particularly active and innovative in the ways he has used the Web to consolidate and interact with his audience; his established following and a name which acts as a 'brand' has enabled him to do this successfully. In a similar manner, several other major recording artists have created sites which attract their fans and actively create an online community. Pop artist Prince recently rejected his major label contract with Warner Bros. and created a comprehensive site which includes music, as well as news articles on the corruption and hypocrisy that exists in the major label-dominated music industry.[29] Courtney Love of rock band Hole, who also experienced conflict with her record company Geffen, owned by Universal, built a site with similar features to those of the Bowie Net site, but without subscription fees. Love states her aspiration to provide an honest, convenient and efficient service directly to people who like her music, and sees the potential to build a direct and lasting relationship with her audience, without the need for record company intermediation.[30] Rap group Public Enemy were also early adopters of the Internet; in November 1998 they began offering free MP3 downloads of several songs from an unreleased album of remixed hits, "Bring the Noise 2000" but were swiftly ordered by their record label Def Jam, again owned by Universal, to remove them from the site. Soon after this, Public Enemy left Def Jam in favour of independent online distribution, releasing their next album with online label Atomic Pop. As noted above, the band's front man, Chuck D, has been among the most outspoken people on the 'digital downloadable distribution revolution' ever since, having done 635 interviews on the subject in just 16 months.[31]

All three of the above artists have been forthright in their contempt for the unfairness and greed that the recording industry seems to display at the expense of the majority of artists. Much of this bad feeling lies at the industry's ill-treatment of artists whose music cannot be made profitable enough due to the massive expenditure on production, promotion and distribution in order to service the musical mainstream, as well as trying to create the next superstar. The above artists have experienced the unfavourable side of the music industry, voicing their opinions in the media and acting as spokespeople for the growing number of artists who prefer to remain independent of record companies.

The Implications of Digital Distribution for Digital Artists

Within the record company paradigm, administration of copyright is viewed as a prime source of revenue, though it has been stressed that such copyright revenue is channelled to the record company rather than the artist. The following points may be considered regarding the economic effect that digital distribution, and its current lack of copyright control, has on artists and musicians:

1. For bands represented by a record company, the company maxim is that each download equates to a lost CD sale. While this hypothesis is somewhat suspect (see point 2 below), any lost sales as a result of downloading activity will affect the record company rather than the artist. For those few successful artists who own the rights to their master recordings (as Metallica do), the situation may appear to be more worrying; Negus notes that such artists can earn in the region of 21-26% on the sale of their recordings, up to 90% of rights revenue derived from the use of these recordings, and 100% of revenue from performance rights.[32] However, it is always the most successful (and therefore the most wealthy) artists whose music is exchanged and pirated the most, and Metallica acknowledged that they had more than enough wealth and their stand against Napster was not on financial grounds.

2. As discussed in Chapter Two regarding the effect of home copying on the market, the effect of MP3 downloads on the market for CDs is a contentious issue, as noted in the *Napster* case: the report for the prosecution by the Field

Corporation found that 41% of Napster users indicated that its use displaced CD sales. On the other hand, a report by Dr Fader for the defence concluded that Napster use stimulated more CD sales than it displaced. Jupiter Communications found that Napster users are 45% more likely to increase their music spending,[33] while a study by the Yankelovich Partners surveyed 16,000 Americans, of which 59% who said they heard a certain piece of music for the first time while online ended up purchasing that music as a CD.[34] Therefore it is too early to say for sure whether downloading encourages or discourages overall CD sales.

3. Many artists consider the free availability of MP3s, as well as Napster-style file exchange to act as a valuable dissemination tool or, as Chuck D said, "the new radio." While this view is most publicly spoken by established artists such as Courtney Love, Public Enemy, Prince and The The, it is also taken for granted as the prime means whereby artists from all levels of success or obscurity can disseminate their music within previously unavailable niche networks.

4. Many independent artists still rely on the sale of CDs in the absence of a commercial market for MP3 files. However, many such artists also consider the free availability of MP3s to actively drive demand for ownership of the music in other forms (i.e. CDs).[35] This view makes the distinction between MP3s as sample or promotional items and CDs as desirable commodities, rather than MP3s as a replacement or substitute for a CD: CDs have better sound quality, artwork, liner notes and general packaging, as well as real 'touch' and collector value, and as such can command a price.[36] Direct artist to customer sale of CDs, with the very real potential of digital distribution to reduce distribution costs, also offers artists the opportunity to take advantage of a general consumer demand for reduced CD costs.[37] While this opportunity is of more benefit to established artists, it is also true for unsigned artists; successful online acts such as MP3.com-based 303 Infinity can sell 40+ CDs per week. However, the dynamics of the online market seem to be more volatile than offline, and such acts felt unprepared to rely on these sales as a stable and reliable income.

Some of the established artists mentioned above, such as Prince, The The, Courtney Love and Public Enemy have become involved with the Internet as a result of

negative experiences within the music industry. Others, such as David Bowie and Todd Rundgren have been involved with the Internet for quite some time. Thousands of other unknown or unsigned artists have also embraced the Internet as a publishing medium. In any case, the advantages are:

1. It provides an alternative paradigm to the music industry within which an artist can spontaneously distribute their music; artists now have access to an independent and inexpensive global distribution network through which they can publish their music instantly. Before this was available artists would have had to invest in bulk manufacture of CDs, distributed through a national independent distributor such as Pinnacle in the UK. Record companies can often take up to three years to produce and release an album.

2. It provides the possibility for an open and direct communication channel between artist and audience; this can be a valuable source of information from which an artist can test market new work, receive feedback and comments from their audience, gauge consumer opinions and judge the size of a market for either recorded or live work. For example, Pete Townshend writes, "Because of the certain knowledge (gathered in the main from the Internet) that people want to hear my music, I am writing today. I was armed with information gathered from the Internet when I approached last year's Who touring work. I was certain we would sell out wherever we played, and barring the loss of a ticket here or there, we sold out."[38] Established artists can build on the concept of fan clubs to set up subscription-based services and improve information flow with fans and encourage a loyal consumer base. As Caporale pointed out, lesser known acts can also benefit from the efficiency and convenience of email to establish a more direct relationship with their fan base.

3. It provides an artist with autonomy; musicians have the freedom to produce work without the commercial influence that a record company might apply in a bid to satisfy an identified lucrative market. In the record company model, only the more successful artists are able to negotiate the terms of their contract to control the way their music is recorded and disseminated.[39]

4. Artists can operate within niche markets; the Internet has clearly facilitated the building of communities around specific interests, and in musical terms this equates to communities focused around specific musical genres and sub-genres. This has the effect of aggregating a potential mid-sized market for music within niche genres which cannot effectively be targeted by major record companies due to their insufficient size. For example, although hip hop is a style of music which is now ripe for record company exploitation, Chuck D's *Rapstation.com* is a portal for all types of underground hip hop and rap music, including such sub-genres as *Classic*, *BassBounce*, *DJMixGrooves*, *East Flow*, *Hardcore*, *Midwest Roll*, *South Crunk*, *Spoken Word*, *West Sound*, and more.[40] Another example of an active niche market is on MP3.com, where the most popular genre appears to be 'dream trance', a market which would be infeasible for the record companies to exploit.

5. Music becomes more profitable; the cost of producing music is falling rapidly as advanced software-based recording facilities evolve (see Chapter Four). For those artists who still rely on CD sales, manufacture and online mail-order distribution may be done independently of the major companies, and therefore more cheaply. For those who use online intermediaries to produce CDs, such as MP3.com, the manufacture and distribution process does not involve any investment by the artist, and the artist usually receives a much greater portion of the sale revenue than is provided by the standard record company agreement. For those who sell MP3s, such as artists on Emusic.com, the manufacture and distribution costs are almost non-existent. Therefore, less investment and reduced costs in the overall production, manufacture and distribution chain indicate that less revenue is required to recoup those costs; modest CD sales can therefore provide a reasonable income. This, in conjunction with identifiable niche markets, indicates that through the Internet, music can become a more economically feasible activity through which more artists can exploit a more diverse range of markets than is possible through the record company paradigm.

The Implications of Digital Distribution for Intermediaries

The information in this chapter suggests that many artists who have been under unfavourable record company contracts, as well as other established or unknown independent artists, can benefit from the freedoms and opportunities that digital distribution can offer. However, operating independently of a record company puts the burden of tasks such as management, publishing, marketing and promotion, administration, Web site hosting, design and maintenance, squarely at the feet of the artists themselves. While some may embrace these tasks and revel in the responsibility and autonomy in their own career, others may still wish to delegate these more mundane tasks to an intermediary so that the artist can get on with making music. In this instance, record companies might still offer a valuable service to artists, though other intermediaries have emerged which offer Internet-based services in order to take advantage of the demand for record company-free distribution. New music-related online businesses currently include mail order CD retailers (such as CDNow), independent record companies offering digital downloads (such as Chuck D's 'Slamjamz' [see below]), Internet radio services (such as Netradio.com), and new service providers for unsigned bands (such as MP3.com).

Paul Brindley notes that these new business models stem from the twin forces that are driving change in the new supply chain: disintermediation and reintermediation. As digital distribution eradicates almost all manufacturing and distribution costs, some traditional intermediaries lose their place in that supply chain while others find niches within which they can build their business. As the distribution process is opened up to increased competition from a host of new service providers, intermediaries must find ways of adding value in the chain – either by cutting out layers of middlemen (disintermediation), or redefining functional roles in new ways (reintermediation). MP3.com is a good example of a 'reintermediating' company since it combines elements of both traditional retail and record company functions, carrying out A&R, marketing and promotion as well as distribution and retail.[41] By not investing in the actual production or promotion processes, the new service providers such as MP3.com are able to facilitate the distribution of content to the public without demanding a major stake in the artists' IPRs or revenue streams.

Online record labels, which endeavour to bring a more selective repertoire of work to the market, will be financially more involved in the production, promotion and distribution processes than the above service providers, but less so than traditional record companies. As such they are likely to demand a larger stake in the IPRs and revenue streams than the service providers, but less than the record companies. For example, the arrangement that Chuck D's rap record label 'Slamjamz' has with artists is as follows: rather than signing the artist, they sign the recorded master song itself. The contract stipulates 50% co-ownership for two years, then two three-year co-licensing periods afterwards. The artist receives a small recoupable advance, and the revenue from the song is split equally after the advance has been recouped. The songs are also continuously exploited for ancillary areas (TV, film, commercials, sports events, etc.).[42]

This model is one which seeks to actively exploit the rights in the song with a view to generating real revenue streams, without exploiting the artist. By signing the song itself, the artist remains free to record any other work they want, whereas under a record company contract artists are not permitted to record any music outside of the terms of the contract. Under this agreement artists also retain a bigger portion of their IPRs than they would under a standard record company contract, and therefore earn more money from any revenue generated: in principle, 50% co-ownership is better for the artist than a 90%-10% agreement.[43] Additionally the low-level investment in the small advance, modest production and promotion costs, and negligible manufacture and distribution costs, means that the music must achieve only modest success to break even. In contrast, as noted above, a major label mainstream pop CD must sell 1million units before the artist has recouped their advance and begins to receive royalties on CD sales. Furthermore, the initial two year ownership period, followed by two optional licensing periods of three years, allows for a flexibility in the agreement which makes the record company's outright ownership of sound recordings for 35 years seem draconian.

Through the limited investment in the overall process of bringing a work to the market, agreements such as the one outlined above give the online record label the opportunity to become involved with many more artists than would be possible for a traditional record company, which limits its involvement with new artists due to the massive investment required to bring a work to the market. Moreover, due to the more profitable nature of the business, artists should have more chance of

recouping costs and receiving an income, giving them the opportunity to make a modest career out of music as opposed to the winner-takes-all mentality of the major label system. Therefore increased competition in service provision, as well as the more open, equitable and non-exclusive relationships facilitated by the Internet will encourage intermediaries to become more accountable for their actions, and more fair and flexible in contract terms.[44] Consequently, the opportunities have arisen for intermediaries to act primarily as a conduit between artists and consumers, connecting the two in a direct and transparent manner, while providing a flexible and convenient service to both.

Chapter Six: Converging Technologies and their Implications for the Future Music Market

The previous five chapters have examined the effects that network technologies have had on the music industry as it moves into the twenty-first century, as well as the strategies employed to cope with changes in structure and practise. Additionally, the changing patterns of use among both the artist and user community have been analysed, with a discussion of the competing interests between record companies, and artists and consumers. The discussions up to this point have often given historical contexts to the current debates, issues and practices surrounding the transition of music from physical commodity (the CD) to a state of fluid digital musical information. This chapter examines the current state of converging communications technologies and assesses the implications that they have on the future of music. This then leads on to a discussion of the possible future of the music industry.

Convergence

Robert Hassan defines 'convergence' as a process; a 'coming together', since the late 1970s, of the hitherto discrete technologies of computing, telephony and satellite into the highly dynamic and hugely powerful IT revolution.[1] The automation of industry and the rapid penetration of all-encompassing computer technology throughout the 1980s and 1990s drew together the formerly distinct computing, telephony and satellite industries. The result was the formation of a meta-communication technology which is now developing incredibly rapidly, driven by "pure market forces."[2] While this gives a clear background to the developmental path of technology, 'convergence' is more commonly used to connote a state of *being*; that technology has reached a *state* of convergence. It was defined in a 1997 Green Paper as "the ability of different network platforms to carry essentially similar kinds of services,"[3] or a blurring of the distinctions between networked delivery platforms. This implies that convergence is not so much a process but a result. Convergence is in fact a continual process of different functional technologies integrating ever more tightly, but the state of convergence referred to above identifies a technological goal:

that digital communications technologies should be interoperable, and the information carried by them should be standardized enough to be accessible across platforms. The developmental path of networked technologies will be outlined below so as to contextualize the future patterns of distribution and consumption within a technological framework.

Converging technology and networks no longer rely on personal computers and the Internet, but on the development of new and more powerful channels of communication linked to an increasing number of efficient, user-friendly, and interoperable devices. The rapidly increasing demand to access audio and audio-visual content over the Internet implies that in the future, an increasing amount of digital content will need to be routed through more robust network infrastructures than the Internet. The Internet will never be ideal for mass consumption of high-bandwidth content, due to the huge volume of data already carried over certain network points of limited bandwidth. Moreover, the take-up of fast computer connections to the Internet in order to overcome the network's limitations will not resolve, but only worsen the situation.[4] Therefore the delivery of audio, video and retail experiences are likely to be routed through privatized broadband networks, supplied by service providers and bundled with other utilities such as telecom provision. For the end user, devices such as computers, televisions, mobile phones, hi-fi systems, car stereos, games consoles, radios and even wristwatches are all examples of platforms which are or will be capable of receiving, playing, displaying and transmitting content such as audio, graphics, video communications, voice and data.[5] When all such devices are connected to a global communications network via broadband cable or wireless connections, the ability for the end user to receive and interact with the same content seamlessly on different platforms could render the distinctions between platforms essentially insignificant.

Current examples of wireless communications technologies include digital cable and satellite television, and mobile telephony.

Digital TV:

For the consumer, the main benefits of digital TV over ordinary TV are: improved reception, improved audio visual quality, a significant increase in the number of channels, and enhanced potential for interaction.[6] Cable TV is supplied on a regional

basis by companies such as NTL, and digital satellite TV in the UK is primarily provided by BskyB, who supply a subscription service through their digital set-top box/receiver dish. The service provides 19 entertainment channels, 12 documentary channels, 8 music channels, 3 news channels, and 9 children's channels, but does not at present include much in the way of interactive content or access to the World Wide Web. The TV may prove to be an ideal platform to provide content on demand and other interactive services, due to the almost universal penetration of the TV set. Cable and satellite TV have provided additional functionality (through increased choice) over national TV, and many homes have extra devices attached to their TV set (such as hi-fi, VCR, set-top box, games console) to add further functionality. The introduction of Interactive TV (ITV) may prove to be a more convenient and attractive method of accessing networked services than using a computer to access the narrowband Internet. The services likely to be provided through ITV will be:

> *Video On Demand (VOD):* content whenever you want it.
>
> *Interactive Programme Enhancements:* TV with a Web page interpolated over it.
>
> *Web Browsing*
>
> *T-Commerce*: an ITV variation on retail e-commerce.
>
> *The Walled Garden:* the initial screen or home page, a navigable and clickable shopping experience similar to the Internet, with other services such as email, news, weather, sports etc., but is controlled by the service provider and is not a direct connection to the Internet.[7]

On the other hand, mobile telephony is also developing technologically; Universal Mobile Telephone Services (UMTS), more commonly known as Third Generation (3G) mobile phones will, by 2002, be capable of broadband multimedia reception and wireless high speed Internet access.[8] Several companies, such as BT and Vodaphone, already offer access to the 'mobile Internet', although currently restricted bandwidth limits the available services to essentially text-based services

similar to Teletext. Although satellite TV and mobile telephony offer different services to the consumer, it is likely that as these technologies develop and mature, and as available bandwidth increases, similar types of services and content may become available via the different platforms. In terms of the ability to play music from a remote source, as is currently possible via the Internet, all devices (hi-fi systems, in-car stereos, phones etc.) should be able to connect to and play all standard or popular formats of music in a seamless manner, without the user requiring any technical knowledge. This would be the networked equivalent of a user switching on a radio and only having to select which channel to listen to.

Convergence, then, increases the commonality between the formerly distinct industries of consumer electronics devices, computing, telecommunications, and broadcasting; for although much consumption of music on the Internet currently consists of downloading and owning music, the long term prospects for access to music over digital networks point toward a streaming on demand model as outlined above. This will continue to develop on the Internet, but the mid- to long-term prospects point first towards the TV set and the mobile phone, and eventually in a more diverse manner across a wider range of devices. The process by which this usage pattern may come about is outlined in the following section.

The Heavenly Jukebox

The idea that end users will be able to access any music, anywhere, anytime, from any device is a compelling concept, and is referred to variously as the 'global', 'heavenly', or 'celestial' jukebox.[9] At present there are many legal, technological and competitive hurdles to be overcome before this model of consumption develops legally, but it is likely to evolve in three distinct but overlapping stages. Chapter Four discussed the ways in which digital networks have affected patterns of consumption, dividing them into three categories: CD mail order sites, audio file download sites, and streaming audio sites. These three models of consumption are developed here as staging posts along the way to the future, showing the dominance of each model as technology progresses and usage patterns change.

Stage One: CD Mail Order

Akin to the traditional music club mail-order model, the consumer is able to visit sites such as Amazon or CDNow, select the desired title and then purchase the CD online via credit card transaction, which then reaches the consumer via the postal system. This is presently the most popular form of online music purchase and is expected to be the dominant form of online purchase for a number of years, predicted to account for 14% of the total US music retail market by 2003,[10] and 18% by 2005.[11] At present, this is the most convenient method of acquisition, as the only online activity required is to select the title and make the credit card transaction, and the CD remains a popular, convenient and portable format. Brindley notes that at the present stage, both the digital download and streaming on demand models are severely limited by inconvenience of use for consumers due mainly to restricted bandwidth and a lack of interoperability between playback devices. For the majority of consumers (at least in the UK) who connect to the Internet using a computer, a 56k modem and a telephone line,[12] it can currently take up to three hours to download an average CD length album in MP3 format.

College students commonly enjoy much higher bandwidth connections such as T-1 and T-3 cable networks with high-speed data transfer rates and therefore speedy downloading, and as such they could be considered a technological elite compared to the general population. Even once downloading has been successful, playback options are limited; playback is only possible on computer equipment or dedicated devices such as the Diamond Rio, rather than traditional hi-fi equipment.[13] Although more hardware is now being manufactured to cater for the download market, during 2001 it is a long way from penetrating the mainstream market.

Stage Two: Digital Downloading

In order for downloading to become a dominant form of consumption, certain technologies will have had to mature; bandwidth will have increased significantly; DRM systems may provide IPR holders with security against mass copying; and interoperability between playback devices will be more common. Although broadband ITV and mobile phone services may be developing, it is unclear how long

it will take for them to become widely available. For computers, increased bandwidth is considered to be only a few years away: Digital Subscribers Line (such as ADSL) technologies are currently being rolled out in the UK by BT, which potentially increases download (reception) speeds to *up to* 2Mbps, and upload (transmission) speeds to 256kbps, using existing telephone cable.[14] Cable modems offer a higher data transfer rate of up to 5Mbps download speeds, although this necessitates living in an area that is serviced by a cable company.[15] Satellite connections can provide yet more comprehensive bandwidth connections; the ASTRA geo-stationary orbit satellite can offer download speeds of up to 38Mbps, and upload speeds of up to 2Mbps.[16] This type of bandwidth would allow for instantaneous download of compressed music files. Jupiter Communications discovered that 18% of the general online population, and 36% of homes earning over $125K/year, are likely to get broadband,[17] indicating that the consumer take-up of higher bandwidth technologies is likely to be dictated by price, and until prices drop to an acceptably low level, broadband take-up will not become widespread. In this connection, Jupiter also estimate that by 2005, 33% of the total online population will have broadband access, and in the US, cable modems will command 50% of the broadband market, with DSL at 37%.[18] If correct, these figures indicate that broadband take-up will be steady, but that satellite connections are, for the foreseeable future, out of the reach of most households for dedicated Internet usage.

In order that all music be made available for download, content creators and copyright holders are likely to demand reassurance that they will be compensated adequately for their intellectual property, and that it will not be distributed or copied without their consent. DRM systems appear to be the most promising solution to the problems facing corporate IPR holders – namely, how to release a work while retaining control over its usage despite the ease of digitally copying and redistributing it world-wide. Such systems were discussed in Chapter Three, but in order to operate successfully, they must provide this protection while appearing transparent, seamless, and above all, attractive to the end user.

Interoperability between playback devices may become more common in the next few years as electronics device manufacturers respond to the popularity of compression formats and attempt to supply the demand for appropriate devices. This means that compressed audio files in formats such as MP3, MP4, MP7, WMA (Windows Media Application), Real Audio, and any subsequent formats which

develop and attain widespread popularity, should be capable of playback on the range of domestic devices listed above (portable players, hi-fi systems, in-car stereo systems, TV, mobile phones etc.). Although there are an increasing number of compressed audio devices currently on the market, most notably portable MP3 players, widespread interoperability is likely to be a long term goal as it will require a general change in strategy from the exclusionary tactics of the major technology corporations, as well as substantial consumer investment in the new electronics devices.[19] Market penetration is likely to happen on a gradual but consistent basis; Jupiter predict that *in 2005 there will be almost 25 million digital music playback* devices in use.[20]

The effects on consumer usage of widespread and convenient downloading are numerous: most notably, the fact that individual tracks will be available to consumers in their own right, rather than bundled together as an album package. Currently, the recording industry promotes singles throughout the media in order to sell the more profitable album format; people who wish to own the single they heard on the radio must often buy the album, necessitating a purchase of between £12 and £16.[21] In many cases a consumer may only like a few tracks on the album, making it an expensive and inefficient purchase. The future availability of tracks on an individual basis may allow more spontaneous purchasing due to less required investment by the consumer, but more significantly it may begin to undermine the record companies' use of the star system that has been the cornerstone of the industry, which relies on massive album-format sales, driven by the popular singles charts.[22] The new single-song market may well detract from album sales, but it is not yet clear whether the star system will disintegrate or flourish. Such a system seems to be very useful in guiding the choices of the public, and is very much in evidence on most of the independent and decentralized music sites. It may be more accurate to say that the star system may become decentralized, with the effect that the stars of the Internet become more abundant than the major label stars, and that they enjoy a more modest life and wealth for perhaps a shorter period of time. Whether this precludes the major corporations' ability to utilize the star system in a single-song market or not remains to be seen. It is likely that current business models and standards of practice will remain for quite some time as these new technologies and usage patterns develop, and the industry will do everything in its power to retain them. However, if the days of the album as a pre-packaged commercial format for

chart and mainstream music are numbered, then it appears that new business models really must prevail in order to maintain and expand the industry.

A profitable single-song market is likely to become viable due to the reduction of the manufacture/distribution process to marginal, or almost zero, cost. Although the initial costs in setting up reliable online distribution systems, as well as providing technical consumer support may be considerable, it appears likely that over time, the cost of music will diminish considerably.[23] This does not imply that music will be less profitable – indeed, it should be possible to increase profits while lowering prices, through the advantages that increased efficiency and negligible distribution costs provide over current industrial costs of production, shipping and maintaining huge distribution networks.[24] Another effect of decreased distribution costs, in tandem with decreased costs of production through computer-based audio recording products, will be a growth in musical diversity. Currently the lack of diversity in music distributed by the major companies is due to economic judgements of whether or not the costs of production, promotion and distribution outweigh the revenues generated. However, if the costs of these processes are significantly reduced or eliminated, then more music from more diverse sources will become economically feasible, and will be able to find an audience where before this would not have been possible. This avenue is already being explored by thousands of artists who post their music on sites such as MP3.com, Farmclub and Peoplesound, and in the future an increase in innovation and diversity is likely to be spearheaded by the independent artist and label community, rather than by the major labels.[25]

Stage Three: Streaming On Demand

Brindley defines this stage as "the point at which the majority of consumers are able to access digital content anytime, anywhere and through any medium. The timing depends on a number of different factors but the question is no longer whether but when."[26] Whereas the CD mail order and digital download models rely on purchase and ownership of specific sound recordings, the streaming on demand model is based on *access* to music rather than ownership of it, as storage and ownership will no longer be required. Jim Griffin, often referred to as a technological guru and digital visionary,[27] has been outspoken on his image of the future and has clear ideas on how it may be realized. "Digits will become ubiquitous and will increasingly

arrive just-in-time, and in a customized way. When we can access all the bits we want, wherever we are, whenever we want them, we won't want to carry them around. Delivery on a disk or fixed storage of any kind will atrophy."[28] This compelling model of the 'heavenly jukebox' is likely to be fully realized when the technologies outlined above in Stage Two have matured; wireless broadband connections are commonplace, the entire range of media devices are manufactured to connect in this way, and substantial market penetration of such devices has been achieved. Home electronics devices may be interconnected to an internal network within the home, which could then connect to the global network via a single satellite or cable connection. Portable devices will be able to connect to the wireless network in their own right, as the Third Generation of mobile telephones are designed to do. As mentioned above, one of the platforms most likely to supersede the open PC-Internet as a medium for content consumption is interactive television. However, at present the technical obstacles to such a scenario are huge. The integration of Web content into TV services to create a blended experience presents the complications of technology and industrial alliances. If the different systems do not interoperate easily, due to lack of accepted standards for virtually every link in the technology chain, then the implementation of such services will be impeded and the market may stagnate altogether.[29]

The Multi-Channel Future

An intriguing aspect of the on-demand model is how it will change the ways in which users interact with and consume music; this will be as much psychological as technological – when consumers *believe*, based on experience, that musical digits will arrive on demand, or just-in-time, as and when they are required, then a shift in usage will follow. It is possible to distinguish two aspects which will allow the gradual shift from current usage patterns to future ones: passive/interactive services, and centralized/decentralized content.[30]

Passive/Interactive Music Services

Passive music services essentially emulate the programmed broadcasting which is prevalent through TV and radio. This type of service demands little from the listener

in the way of time or effort, and the output of such services is limited in choice. Music is pushed from media companies to the public mainly via radio, TV and Web broadcast, and the consumer has the choice of whether or not to participate in the largely passive role of listening to what the broadcaster chooses to provide (although the choice of whether and what to purchase must be an active decision made by the consumer). Conversely, one feature that such new modes of consumption will develop is interactivity. The rise of music on demand, and an increase in interactive music services, music portals, or Music Service Providers (MSPs), will allow consumers to take a more active stance in the music that they choose to listen to. Such MSPs will allow users to create or select customized playlists based either on their previous selections, or on a particular artist or style of music; online services are already evolving which recommend music based on a user's musical preferences, as well as their previous selections. In a scenario such as this, the ability for the service provider to build an increasingly personalized and customized relationship with the user could greatly enhance the user's listening experience. This could combine the best elements of both the brick-and-mortar retail experience, and the current national or corporate radio experience, while disposing of the negative elements associated with both.

At its worst, the brick-and-mortar retail store may confront the consumer with an impersonal shopping experience where the staff are unavailable or unhelpful, and the consumer is given no guidance in their purchase and is not able to listen before he/she buys a CD. At its best, helpful advice and personal service provided by a knowledgeable record store owner could provide the type of recommendations that would be available through these online interactive services. Perhaps a more accurate comparison, however, would be with radio; this is the established music on demand medium, and radio usage is similarly based on access to, rather than ownership of, music. The benefit of radio is that the listener delegates the responsibility of music selection to the DJ, who compiles a playlist and provides a continual stream of music. The drawback is that the listener is currently only able to determine broadly what type of music he or she listens to by changing the available stations. Online interactive services would permit the user to specify the music he listens to according to certain parameters – for example, a wide range of different styles (anything between Latin, techno and jazz), or a niche genre (gangsta rap), or even certain specified acts (Bob Dylan, Nine Inch Nails, and Ella Fitzgerald) – while still

delegating the responsibility for music selection to the service provider. The more a user interacts with a site – the more selections he makes and the more feedback he provides in the way of likes and dislikes – the more the service provider gains an increasingly accurate profile of a user's tastes, allowing more accurately customized content for each particular user. These changes will make the transition from 'push' from the media industries to the listener (programmed broadcasting), to a greater degree of 'pull' by the customer from the service provider (customized, on demand streaming). For the recording industry, the scenario outlined above which will essentially become a new broadcasting industry, may signal a shift in sources of revenue; the current revenue stream derived from sales of physical product (CDs), is likely eventually to be replaced largely by income from administration of rights associated with broadcast of the music itself. For consumers, however, this signals an increase in the amount of control they will have over what they listen to. While this control over listening patterns will allow specific choices to be made by the listener, it will also allow this control over choice to be relinquished by the listener to a 'music selector' such as a DJ, or a software-based 'taste robot'.

Centralized/Decentralized Content

Centralized content is that which is brought to the market by of one of the few major corporations, and the artist retains only a portion of the IPR in the work. The record companies like to think of themselves as performing a filtering service; they filter out the good quality music from the bad, performing quality control and making choices for the public so that the public need only make a limited number of choices for themselves. Such centralized services provide less choice of content to the user than decentralized ones (the repertoire of a record company can never match the combined repertoire of an independent site such as MP3.com); their role as music providers is one of supplying a reliable but limited source of consistently good quality music across a range of popular markets. Where sites such as MP3.com offer no such 'editing' services, the time and money invested in the selection, production and promotion of a limited number of acts by record companies allows them to provide the majority of record buyers with music which they like without having to pore through thousands of acts in a time-consuming manner.[31]

Decentralized content is not controlled by a major corporation, but is brought to the market by an independent intermediary with no stake in the IPR of the work. This sector is represented by the thousands of non-professional content producers, as well as by some independent stars such as David Bowie and Prince. As mentioned above, the increased profitability of music is likely to foster a greater volume of music, as well as increased musical diversity and a growth of niche markets; a non-major label-dominated industry may therefore flourish based around independent artists, labels, sites and portals. If mid-sized markets for niche music evolve and proliferate, then more independent music is likely to be promoted through increasingly specialized online and offline radio stations, as well as music service providers (such as Rapstation). As discussed in Chapter Four, sites such as MP3.com and P2P networks such as Napster or Freenet can allow artists to co-operate in building communities of interest, and act as portals for music by thousands of independent artists. However, as the more successful decentralized music services (such as MP3.com) become acquired by the majors, bringing them into centralized control, the boundary between centralized and decentralized content and services becomes more blurred – although artists may publish their work outside of the traditional music industry, the site with which they affiliate may be owned by a major label.

For the user, the implications of the Passive/Interactive, and Centralized/Decentralized services are that there will be a greater degree of choice to be made. On the one hand, those with less time and patience may use centralized services to make the choices for them in the same way that the current centralized record industry does – they will use services that are both passive and centralized. AOL users will therefore listen to the content that AOL provides, and such consumers will have little incentive to go elsewhere for their music. Increased interactivity within centralized services will be provided through major label initiatives such as MusicNet (the combined music platform from BMG, EMI, AOL Time Warner, and Real Networks) and PressPlay (the joint effort from Vivendi-Universal, Sony, and Microsoft). Users will be able to choose which artists they want to listen to, and construct their personal listening profiles through the interactivity provided by such services. Limited choice within decentralized services may be provided by those artists who established their name through the mainstream music industry, but who are now independent of the industry. Jim Griffin calls such

icons the new 'tastemakers', masters at drawing a crowd and serving as gatekeepers to the 'virally growing throng'.[32] In many cases, he says, these people will be our heroes, because our heroes represent our choices, our defining values:

> In a world of unlimited choice, we'll turn to lighthouses that cut through the fog of the marketplace. Cutting through the clutter of this marketplace will require bringing a crowd, and our heroes and well-known artists do that in a way that [control over a traditional distribution network] cannot replace. In practice, our heroes are our lighthouses. Current heroes introduce us to new ones.[33]

An example of this idea is David Bowie's DJ slot on Rolling Stone Radio, where his name and programme act as an attraction to those people who consider his musical choices to be interesting or consistent with their own choices. Bowie's name could be substituted for that of almost any popular icon who can draw a crowd or gather an audience, and this idea again relates to independent labels which serve a niche market; people who identify with a brand (either label or artist) are more likely to retain some loyalty to that brand. Increased choice within decentralized services requires fully active consumers who are prepared to spend time and effort combing independent sites for their music. Tools for searching may be provided through filtering technology; for example, allowing searches by artist/genre/label/site to narrow the search, and increased use of the interactive services outlined above would enable a more accurate user profile. However, the time invested in creating such a profile within one particular service would root a user within that service as their profile may not be transferred elsewhere. Therefore, in the decentralized world where the filters of the record companies have been removed, other filters will take their place – interactive service providers, established icons, or technology will act as filters which will help users to make their choices, or to make choices for them.

For intermediaries, the Passive/Interactive, and Centralized/Decentralized models should provide the ability to offer services more directly suited to a consumer's requirements and preferences, allowing them to cater more adequately for a wider portion of the population than is currently possible. The passive and centralized models of distribution/consumption will essentially mimic the current services provided by the major companies – providing major label music through the

various corporate media channels. The interactive services which allow the build-up of a user profile could be utilized by either major or independent provider to increase the efficiency of their promotion. The ability for a content provider to gain access to a user's personal profile and preferences would give the provider an immense opportunity to specifically target their promotion of other artists towards a sympathetic market. Such niche marketing toward specific groups should therefore make promotion a much more efficient activity compared to the blanket marketing (to a mass audience through radio and the media complex) currently available to the music industry. The decentralized model of distribution/consumption, in conjunction with the possibilities for targeted marketing, is likely to benefit the independent artist and label community. They will be able to provide an increase in choice and diversity, thereby enabling them to cater more directly for preferences *outside* of the mainstream record-buying demographic. Brown *et al* suggest that 65% of music purchases are made by only 16% of the population, indicating that a minority of the population is responsible for purchasing the majority of music.[34] The increased availability of diverse music may encourage the non-active majority of the population to become more actively involved with music, and may increase the number of people willing to pay for music.

In addition to increased choice within niche markets as a means to increase the listener base, the overall breakdown of the album format towards single-song based listening patterns (whether ownership of, or access to) may also expand the market. The music industry currently operates by selling huge amounts of product to a relatively narrow bracket of the population; for example, it targets its mainstream music at those markets which actively buy CDs and tapes, considered to be predominantly the teen and pre-teen market.[35] An increase in perceived value for money – for example, if a consumer could pay either a fixed monthly subscription fee for access to all music, or a minimal fee for access to one particular song – might actually encourage a wider portion of the population to consider it worthwhile spending money on music, where they may currently consider music either overpriced (in the case of the album format) or not worth spending money on if they can get it cheaper illegally (in the case of Napster and CD burning technology). The challenge for the industry, then, is to encourage a much wider portion of the population to spend money on music by providing consumers with what they want, at the price they want, to engage people with music and build a lasting relationship

geared towards perpetuating this service. Griffin identifies the current industry as being transaction-based, product-oriented, and rooted in satiation – where the relationship is consummated with purchase. The consummated relationship, he says, is disconnected from the customer; "the music business is so disconnected that the RIAA conducted a survey which showed that 7 in 10 people did not know when their favourite artist [had] released a new record."[36] Griffin, and others, consider the future of the business to lie with the creation and nurturing of a lasting relationship with the customer, which encourages him or her to return again and again – a scenario where service replaces product: "An endless jukebox of access, not a stack of discs. Radio, not records."[37] Or as Lisa Voldeng puts it, "Consumers...must be catered to, courted, seduced – not through wham bam thank you ma'am dumbed-down condescension, as is typical in the world of mass media – but through deep understanding of each consumer's desires, and the servicing of that desire, with all of the deference that servitude implies."[38]

This transition from music as a product- to a service-based business is an important shift, and one that has far reaching implications for the media companies' role and value in the supply chain. If the fulfilment of the consumer's desires is central to the record companies' business plans, then the current method of dominating the market in order to influence consumer behaviour must surely diminish. Increased supply-side competition increases the consumer's ability to leverage power simply through increased choice; the more companies there are competing to fulfil user demand, the more choice the consumer has to pick the service which suits him best, putting him in a more powerful position to voice a demand. This is precisely what is referred to when the term 'the consumer-driven market' is used in common parlance – indeed, a 2000 UK government report on the impact of new technologies on the music industry was entitled "Consumers Call the Tune."[39] Although this might indicate that the industry realizes their role as service providers, they have not yet succeeded at fulfilling consumer demand. An example of a company which attained huge success due to fulfilment of consumer desire was Napster: user friendly, efficient, with no restrictions in content or use of content. Any service which does not service user desire will ultimately fail whether the company owns the market or not.

As of mid-2001, the major labels have not yet come anywhere near developing a service which satisfies consumer demand in the same way that Napster

did. Napster's downfall is another company's gain and there will always be a company which endeavours to service a demand regardless of legal obstacles; MusicCity[40] looks to be another free (and illegal) file download service which is rapidly gaining a large user base. If the major labels do not "seduce, stimulate and satiate"[41] the consumer with what he or she wants, then business will be driven to illegal services which do fulfil demand. By establishing, maintaining and actively rewarding a connected customer relationship, businesses will be able to keep customers informed of events and releases which may be of interest, providing recommendations, and supplying a valuable and customized service to the consumer as outlined above – this is more likely to generate consumer satisfaction, as well as being beneficial to the record companies by providing a more loyal and receptive market for musical works.

In summary, the evolving patterns of distribution and consumption will be developed and provided on the Web, but in tandem, and in the longer term, through privatized communications networks and subscription services such as Interactive TV. The interactive services on both, and eventually all platforms, will allow the user to choose between traditional patterns of consumption, or those which provide more freedom, flexibility, choice and diversity. The services on offer will be more personalized, more interactive, and ultimately such services allow the user to become more actively involved in his discovery and acquisition of music. The media companies have the opportunity to benefit from this active user involvement through more detailed user data mining, and the ability to accurately target market to consumers on an individual basis. However, in order to do this the media companies will need to shift their outlook from dominating consumer behaviour, to being subservient to it. The consumer must be courted rather than dominated, otherwise consumers will be driven to competing services which do fulfil their desires, whether they are legal or not.

Implications of a Service-Based Model for the Music Industry

This presents a significant challenge to the industry. How can the record companies fulfil the consumer's desire for free access to all content while still maintaining profitability? The answers have already been explored at various points in the dissertation, but they are summarized and reiterated here.

1. The industry could fulfil the demand for a single access point for music from all major labels. This would necessitate a political alignment of the major labels which would provide access to all music, rather than operating competing strategies (such as MusicNet vs. PressPlay) which limit consumer choice, which operate on different platforms, and as such are currently uninteroperable. The issues involved here are discussed below (see *DRM Technologies Revisited*). The inconvenience caused by such services is unappealing.

2. Music would also need to feel free. This could be arranged by providing either a subscription service for access to all music, or bundling such access with other services such as those provided by a cable company's digital TV service. If ITV services develop in the near future then access to music could be provided in addition to audio-visual content and Web content.[42]

3. Such services would also give the user some freedom and flexibility to use the content in non-specified ways, such as the ability to make personal copies and transfer files between devices. This would require less stringent adherence to the principles of the author's rights within copyright, providing some scope for fair use.

This is not to say that copyright should not be enforced; those companies with an interest in protecting IPRs must succeed in maintaining and enforcing the strength and value in, and compliance with, copyright as a means to ensure payment for IPR products in order to compensate rights holders' investment and perpetuate their business model. This is what industry members mean when they say, "If today's music isn't paid for, tomorrow's music won't be made"[43] – not that without payment, all musicians will cease their music making, but that record companies cannot operate their business of investing in new works if they cannot financially exploit the rights in them. However, it would be inappropriate to enforce copyright exclusively in the IPR holder's interests. This is both a political and a strategic stance; the balance in copyright (between the IPR holder's right to remuneration, and the public's rights to access) should be maintained in an environment which potentially makes it possible to eradicate that balance. Nonetheless, it may also be in

the corporations' interests to accommodate a slightly more relaxed approach to enforcement by providing sufficient scope for fair use, in order to attract customers to their services.

The concept of trusted and DRM systems, their applications and their implications have been discussed in Chapters Two and Three, and they have been put forward as one of the most effective ways of protecting IP. However, the music corporations also have other tools at their disposal with which they can encourage behaviour which maintains the system of copyright. These other tools contextualize DRM systems within a wider strategy which relates directly to the industry's anti-piracy programme (which consisted of education, enforcement, litigation, and developing new technologies) as well as their strategy to maintain dominance in the market (tightening control of IPRs, litigation, strategic alliances, and developing new technologies). The effect of these strategies was to assert corporate rights through various means in order to regulate the ways that businesses and consumers used their sound recordings. These techniques of enforcement, or control, fall into four categories through which behaviour may be regulated, as outlined by Lawrence Lessig: architecture, law, social norms, and the market.[44] These points are expanded below to give a background to how control may be achieved, and how they relate to a service-based economy.

1. Architectures constrain through the physical burdens they impose. In the context of technology, architecture means the way that a technology is built; in software this is through code, which is often built into hardware. Chapter Three showed how a technology's architecture determines a user's behaviour – for example, the open Internet allows unlimited copying, while DAT machines with SCMS restrict copying. The development of new technologies which protect rights holders' assets by restricting user behaviour, in the same way that DAT machines do, forms part of the industry's anti-piracy strategy as well as its overall strategy for dominance. Although the SDMI may not prove successful as a collective, its goals are nevertheless being pursued by commerce through the development of systems which enable watermarking, encryption, rights management systems, tracking and identification.

   For the industry, it would be inadvisable to set the rules for DRM-enabled content too rigidly or too tightly, lest consumers take their custom elsewhere.

Above all, the security technology should be transparent to the end user, presenting no inconvenience such as having to type in a password or having to authenticate identity. It should be interoperable with other systems – all content must be playable on any user's system. It should enable benefits that consumers show an attraction to (such as copying and transferring). DRM systems may be able to dictate usage perfectly, but the consumer will not buy it if it is not a pleasurable experience.

2. Law constrains through the punishment it threatens – prosecutors threaten, and courts convict. Violation of copyright law, for example, leads to litigation to determine the nature of the offence and, if guilty, punishment is granted. The 'enforcement' in the industry's anti-piracy campaign consisted of identifying sites which violate copyright law, and threatening them with litigation. Chapter Two demonstrated how high profile litigation has also been a prominent strategy by the music industry to curb and control undesirable behaviour or activity, and a UK government report makes the position of the state and the market perfectly clear:

> The new technologies, while offering increased consumer choice and accessibility and new business opportunities, also carry significant threats which can only be combated by a secure legal framework backed by effective enforcement. Only then will businesses have the confidence to trade all their assets online and develop e-commerce for music.[45]

This is a defensive position shielded by a strong arm approach that has characterized the industry's strategies to date. While the industry must always be seen to fight piracy, this position is still based on a product-based model which assumes dominance in the market and the ability to dictate the way that consumers should use their product. In the long term it may be more fruitful and productive to actively develop innovative services and license music to third parties, allowing their music to become part of user's online music collections, rather than fighting those services which attempt to do this illegally through lack of available licenses; the record companies should innovate, not litigate. The law should protect copyright, but not in a way which appears repressive to

consumers, otherwise consumers will feel alienated. The right to make copies for personal use has generally been permitted under the fair use doctrine, and if a privatized version of copyright law is enforced through DRM technologies which does not allow for fair use, then consumers may be driven to services which do.

3. Social norms constrain through the stigma that a community imposes. This may be achieved through education which is, in part, the indoctrination of children into certain norms of behaviour, building in them a sense of what is correct.[46] This strategy was undertaken by the American music industry in their *Soundbyting* campaign which attempted to teach college students that breaking copyright law is morally wrong. In the UK, proposals by the IP Group of the Creative Industries Task Force to influence social norms include a benchmarking and awareness campaign for consumers, a Web portal for prospective licensees explaining copyright and pointing to relevant licensing bodies, and including copyright within the curriculum as part of creative subject coursework and the citizenship programme.[47] With regard to such educational programmes and campaigns, Brindley points out,

> The imperative must be to avoid a re-run of the "Home Taping is Killing Music" campaign of the 1970s, which in hindsight now appears an overreaction...in all cases, respect for the value of copyright is more appropriately learned not taught, in a positive, active environment, not as a negative passive message.[48]

The Soundbyting campaign in particular seems restricted to limited success due simply to the fact that the information flow is in the wrong direction. The music industry should be observing their audiences, of which college students are apparently a key demographic, in order to ascertain the ways in which they use and interact with music, so that they may use this information as the basis for their online services. They would then be in a better position to fulfil demand and attract customers. The imposition of moral codes on a demographic which will already have their own views may have some success in the very short term, but if it is to be at all effective it should be a very long term goal through introducing the subject to the younger generation.

4. The market constrains behaviour through the price that it demands. In the offline market, the majors' control of the production and distribution chain, as well as dominance within the media complex, allowed them to control the recordings which were made available to the public, and subsequently influence the patterns of consumption within the market. By creating a situation which involves massive investment to bring a work to the market, the majors have cemented their position as exclusive suppliers of content by squeezing out competition from smaller content providers. Additionally, by dictating the technology on which their recordings are made available (CDs), they are in a position to determine the price charged for their recordings. In this way they have been able to influence patterns of consumption and control the means of consumption.

   They have tried, and to date succeeded, to continue this market dominance in the online environment, but they will not create a successful service through market dominance alone. Their anti-competitive strategies create closed systems which are at present unlikely to interoperate with other systems. Technologically and strategically, this is not a good move, serving only to delay the development of the market and a viable infrastructure, with the threat of stagnating it altogether.

The danger of using overbearing tactics to dominate the market and enforce copyright is that they will alienate consumers and make them feel like criminals instead of cherished consumers. For instance, Belgian police raids on homes of Napster file exchangers and users of other music-trading Web sites, will have exactly this effect.[49]

In summary, the road to fully interactive music services on networked devices beyond the Internet, is a long term process that will take a great deal of technological development, corporate investment, industrial politics, legal reform, gradual changes in consumer usage patterns, and ultimately an eventual shift to different strategies in order to maintain and expand the market.

Chapter Seven: Conclusion and Summary

The period of research was one of immense turmoil and flux across many sectors of the Internet: culturally, technically, legally and financially. In 1997, the consumption of online music was not a prevalent activity; Real Networks were the main developers of compression formats targeted at audio transmission over the Internet, and only a relatively arcane group of technically-minded computer audio enthusiasts knew what an MP3 file was. Within these comparatively small groups, MP3 file exchange took place out of the public eye over Internet Relay Chat (IRC), but the reputation of this seemingly innocuous file format was growing rapidly. MP3.com had been in operation since 1996, and by 1998 it had attracted a large following from musicians and artists who appreciated the ability to post up their music for free, forming communities and sharing their music with other artists and listeners. Other online start-up businesses flourished as the ease, speed and efficiency of publishing on the Web started the boom in online mail-order sites.

New and innovative deals and business models were tested out; in 1999 Public Enemy offered a whole album, *There's a Poison Going On*, for digital download in conjunction with Atomic Pop. This was an unprecedented move, both by the artist and by the label – Atomic Pop may eventually have folded, but they perfectly captured the excitement of the times and realized the potential role of the new intermediary and the more equitable and flexible contracts they could offer artists. Chuck D embarked on a quasi-evangelical mission to spread the word of the independent artist; he embraced the new technologies, engaged in an emerging and innovative online music business, and let everyone know that at last musicians could be free from the perceived greed and hypocrisy of the major label system. His was among the loudest voices to tell people that music could be transmitted instantly, globally, from artist to consumer with little obvious intermediation, and the general opinion of the community bulletin boards on sites such as MP3.com echoed this independent fervour which was endemic with antagonism towards the corporate music industry. The speed with which the popularity of MP3 downloads took off in 1999 appeared in stark contrast to the static machinery of the major corporations and their inability to respond to what seemed like an overwhelming demand for online music. This dichotomy was generally viewed in terms of packets of digital data

traversing the globe at the speed of light, contrasting with the slowly creaking rusty cogs of industrial machinery. Additionally the open architecture of the Internet, in conjunction with unprotected MP3 files, meant that copyright was unenforceable. Famous texts such as *The Economy of Ideas*[1] and *A Declaration of Independence in Cyberspace*[2] by John Perry Barlow exulted in the potential for people to interoperate through computer mediated communication on their own terms, independently of the state or the market. The Internet revolution, they argued, was best left to the programmers and 'mind miners', the natives of cyberspace, to build an environment in which they could collectively enhance human relations and culture. They argued that the laws of commerce and government were not welcome there, they were not applicable, and they could not be enforced.

Despite such sentiments, copyright reform such as the DMCA (1998) was introduced in the US in a bid to establish a framework within which digital copyrights could be exploited. At the end of 1998 the record companies were becoming concerned about the level of traffic in MP3 format, and they targeted Diamond Multimedia for litigation relating to their *Rio* portable MP3 player. Although the RIAA lost this case, the initiation of the SDMI at the beginning of 1999 continued the industry's strategic reaction to the rise of uncontrollable piracy and a market which was running out of the industry's control. Although the major corporations were generally expected to innovate with the new technology, instead they chose litigation as part of a strategy to stifle the development of the online market for MP3 files. During 1999 file exchange moved into the public arena, helped by the success of MP3.com and diatribes from the likes of Chuck D. 'MP3' overtook 'sex' as the most popular search term, and by the end of 1999, Napster had been developed: MP3 had hit the big time. Napster became the next obvious target for litigation by the music industry, but while litigation took over a year and a half to resolve, the publicity it stirred up drew an unprecedented user base to the file-sharing service. While 2000 saw many innovative start-ups fail and collapse, and others struggled to continue profitability, the controversy surrounding Napster continued to increase its membership. However, throughout 2000 the demise of smaller companies in a harsh competitive landscape gradually realized the power of the major labels. Their economic might and their ability to merge with and acquire companies enabled them to enforce their dominant position within the online market. The effect of this was that moving into 2001, those start-ups to have attained any

value were acquired by the major labels, bringing the decentralized independent sites within centralized corporate control.

This catalogue of changes over such a short period of time made the production of a coherent body of work a difficult task. The first two chapters to be written, and some parts of the others, had eventually to be re-written completely in light of such changes – the Napster saga, its development, court case, the pending decision and eventual outcome, all happened while the research was being conducted; changes in technology, changing attitudes towards the music industry and their own changing position within the online market, the corporate acquisition of offline and online companies, the lack of copyright enforcement, through to the potential for overbearing enforcement, all had a substantial impact on the attempt to produce a body of research which was relevant and true to a situation in such development and flux, and which would remain so after the documented events became overshadowed by even newer developments. Therefore the work represents a specific period of time, the beginning of the music industry transition from offline to online, the turn of the millennium, and perhaps most significantly, the clash between Internet culture and industrial capitalism. In the 120-year history of the recording industry the period 1998-2001 is a relatively short one, though the impact of the changes during that time have been far-reaching; the future has been glimpsed, and though it has seemed within grasp at times, a more stable environment is unlikely to develop in the short term. The issues explored within the dissertation are reiterated and summarized here in an attempt to encapsulate the ideas in a concluding manner.

The Conflicting Forces

The two discrete spheres of activity which converged around 1997/98, and which appeared to be in stark contrast with one another, inform the events which occurred around this time. On the one hand was corporate capital and its operations within the strictly commercial structure of the marketplace. The major music corporations conduct a business that is based around the centralized production and controlled distribution of content to the public. This centralized and exclusive model of distribution is enforced and made possible by copyright. This grants the rights owner (the record company) the privilege of a limited monopoly on reproduction and

distribution so that he is the only party authorized to extract some commercial value from the sale of the work. The record companies' business is made possible only by effective and enforceable copyright, which positions them as the only authorized point of distribution so that revenue streams may be allocated to specific beneficiaries, guaranteeing, as far as possible, a return on investment.

On the other hand, the Internet user base had been actively participating in very different forms of content dissemination throughout the 1990s. In this instance the content in question was produced less by corporations than by individuals or working collectives. The content tended to be more informative, intellectual, technical or scientific in its nature as opposed to commercial entertainment, and it tended to be disseminated on a non-monetary basis. Rather than a one-to-many model of commercial distribution, this was a decentralized network of individuals who collectively formed an autonomous and self-informing body of thinkers participating in a largely non-monetary exchange of information and ideas. It was a non-commercial network of activity which endorsed values that were inconsistent with those of the commercial market. On either side there was perhaps a specific shift in awareness that engendered the crux of the conflict between the major music corporations and the Internet community.

Early MP3 use evolved in two distinct directions. The first was rooted in the decentralized model of intellectual exchange, or what could be called the 'gift economy'; perhaps MP3.com epitomized this type of musical activity, where a network of independent producers and consumers shared their own music and information on a non-monetary basis, through the enthusiasm, enjoyment and satisfaction of disseminating their own music in a way that was previously impossible. The excitement surrounding this time was generated by the unprecedented ability to operate independently of the state and the market, and to form inter-personal relationships that were not mediated by capitalism. Engaging in the musical gift economy helped to build a version of DIY utopia which bypassed the need to engage the interest of a record company, or to target one's music at an identified market category. It was a small act of rebellion against the pressure to 'consume' commercial products, and the Internet was hallowed by many as a refuge from the continual onslaught of corporate invasion into all areas of everyday life.

Concurrent with the musical gift economy was the emerging practice of ripping copyrighted CDs into MP3 format for personal use and exchanging them

over IRC or posting them up on Web sites. Where the musical gift economy may have been epitomized by MP3.com, perhaps this second strand of activity could be characterized by music-oriented peer-to-peer services such as Napster. P2P technology is a recent innovation, and could only have been developed by natives of cyberspace. It embraces the network technology, culture and ethos, is a product of the network architecture, and characterizes the Internet's inter-personal structure – a network of relationships on a global scale among millions of people. P2P music services maximize the ability to find, send and receive information on the network, and, as with the architecture of the Internet, the user base disregards notions of intellectual property and the restrictions this places on the flow of information. As far as the music corporations were concerned, this unauthorized use may have been the catalytic shift; the growth in popularity of the Internet during the mid- to late-1990s meant that a growing majority of users were not rooted in the ethics of intellectual exchange, but borrowed these ideas and extended them to incorporate the free exchange of any content and information. The majority of 'newbies' tended to engage in less interaction and more in standard forms of consumption, and the fact that this occurred within the non-monetary framework of networked distribution clearly appeared to violate the corporations' rights to centralize and control distribution of their own content, thereby conflicting with their interests. Although file exchange was an extension of home taping activity, it was clearly considered illegal by the establishment, and summoned the well-documented wrath of the major record companies.

As far as the Internet community were concerned, however, the corporations' interest in the Internet as an unexploited market and a medium for promoting passive consumption was regarded as unwanted attention. Most activity on the Net had so far been free of mediation by capitalism, and the prospect of forcing cyberspace to obey the rules of the market was not an appealing one. It was thought that innovative developments in network technology, and new and creative uses for them could flourish if left to grow of their own accord, while they would wilt in the face of capitalist scrutiny. The corporations' insistence on defining the rules by which technology should develop therefore inflamed antagonism towards themselves as they tried to enforce their framework for control over an architecture that was not designed to such ends. The corporations wanted to pull control of their recordings in

line with their offline activities, while the Internet users wanted to preserve and promote the ethos of their network.

For the Internet community, music use continues to evolve along two strands – the sharing of authorized music files, over sites such as MP3.com, and the sharing of unauthorized music files over services such as Audiogalaxy. On the authorized front, music can now be produced at home and promoted and disseminated over a global network for minimal cost, and this has allowed a thriving independent online music industry to develop. At one end of the spectrum this is based on the gift economy idea of sharing one's own work on a non-financial basis – a hobby for some, and an act of participating in a mutual community of interest. Even if the user does not identify with the political implications of engaging in the gift economy, such non-commercial exchange is the most efficient means of disseminating one's work when its market has not yet been established.

At the other end of the authorized spectrum, some artists make a substantial amount of money from distributing their music over the Net, and perhaps the people most able to benefit from this model of independent distribution are those who have attained stardom through the established music industry, but whose music is now not commercially viable for record company investment. Such artists often have a large and dedicated fan base that can be consolidated and courted, and that can potentially provide a level of support for artists deprived of other sources of funding. Artists such as David Bowie and Pete Townshend can enjoy a successful and direct relationship with their audience that is mediated only by transparent service providers – Bowie provides a subscription portal which acts as an outlet for his work as well as a means of cultivating his fan base.

Less renowned artists can also enjoy such a relationship, but they may need either to become part of a community of interest by joining a service that acts as a portal for smaller artists (such as MP3.com, which attracts a vast amount of traffic), or procure the services of an intermediary that acts more like a traditional, but perhaps independent, record company. The advantage that the network offers such intermediaries is access to a low cost global promotion and distribution infrastructure. Through the reduced overheads in bringing a work to the market in this way, the online/independent record label may be able to offer artists more equitable contract conditions (such as 50/50 co-ownership of a work) than the major corporations do.

The majors are extremely good at production, promotion and distribution through the traditional outlets on a global scale, but this process is vastly expensive and much more risk is involved. They can therefore command a greater portion of IPRs in a work and a much larger percentage of any revenue derived from a work. While the major labels target the musical mainstream in order to recoup their investment, smaller independent artists and intermediaries may be able to achieve success through the cultivation of more diverse global niche markets, which can prove lucrative enough for operators who can reduce overheads to a minimum by utilizing the network for promotion and distribution. The artist's options are therefore determined by their commercial viability. For those acts that are viable for record company investment, the established means of promotion and distribution may still prove a more effective and appealing prospect, and those artists who find success through this system are likely to stay within and support it. Those acts that are less commercially viable, or who target niche markets, now have an effective means of dissemination at their disposal which allows them to consolidate more efficiently a global audience.

The issues surrounding the notorious activity of unauthorized file exchange focus on consumption rather than production, and represent a radical departure from the traditional means of acquisition and consumption. Although illegal, it has empowered consumers with the ability to find and acquire music instantly (relatively speaking), spontaneously and flexibly, and it encourages a greater degree of experimentation than traditional media. It has finally allowed pop music to be consumed as pop music – track-by-track, 3 minutes at a time, rather than on a 74-minute album basis – and the enormous popularity of P2P file sharing services attests to the overwhelming demand for the ability to exercise such flexibility in the consumption of music. It also affirms the market appeal of major-label-produced music, indicating the majors' continued validity as producers of cultural goods.

And perhaps this is another point of contention between the major labels and the Internet users; that the demand is blatantly there, but the supply is nowhere to be seen – the corporations continue to outlaw the illegal activity, yet have provided no legitimate replacement solution until very recently. It remains to be seen whether the corporations' determination to operate strictly within a secure framework has jeopardized their ability to exploit the online market.

The major corporations' desire to pull control of their recordings back in line with the offline environment was born through a necessity to perpetuate the business model which worked for them. Although many users expected the major corporations to lead the development of the online music space by officially releasing their catalogues over the Web, their attitude was to leave the development of online services to others, since the insecure digital market conflicted with their core offline business. They recognized that they would eventually be forced to develop their own online services, but that any attempts at exploiting the online market would be planted firmly within the established centralized model of distribution which imposed an artificial restriction on copying and disseminating their content.

For the major record companies it appears that, owing to the vast amount of money involved in the process of music production, copyright is a means to an end. Over the last twenty years they have been expanding in size, integrating into other markets, and extending their reach to the point where they are fully global corporations. As throughout the last 100 years, they continue to constitute a tight oligopoly which in 2002 distributes 80% of the world-wide market for recorded music. They have been instrumental in fine tuning copyright protection to their own advantage, and they are more than ever reliant upon the offline market structure: the centralized model of production and distribution.

Therefore, rather than trying to enter the market earlier in an attempt to maintain consumer loyalty, they implemented an anti-piracy campaign which consisted of education, enforcement, litigation and developing new technology, while their longer term plan consisted of tightening IPRs, litigation, strategic alliances, and again developing new technology. The intention of these strategies was to impede the development of the MP3 market while they developed new technologies, to extend their dominance over the converging mediascape, to halt unauthorized activity, and to increase their ability to derive revenue through the administration of copyright.

The corporations' move towards ever-tightening oligopoly was indicative of their attempt to maintain and extend dominance over their markets. In the offline world this manifested itself in horizontal integration: mergers with corporations that could maintain their dominance within the shifting mediascape (such as the AOL/Time Warner merger), and acquisition of companies that would allow them to

extend their presence to the further corners of the online music space (such as the buy-out of MP3.com and EMusic). The effect of this was to bring the successful elements of the emergent decentralized music industry under the control of the established centralized industry, as well as to develop their product presentation within cyberspace by, for example, advertising their PressPlay service on affiliate sites such as MP3.com and EMusic.

As well as maintaining a tight oligopoly the majors have also been influential in copyright reform which, over the last twenty years, has increasingly favoured rights holders. The term of copyright has been lengthened, the scope of copyright has been broadened, and any exceptions to the owner's monopoly over copying and distribution have become very specific and narrowly defined. Since the 1976 US Copyright Act, the objective has increasingly been to expand the owner's protection over his work – partly as a reaction to the increased ease of copying and distribution as technology has progressed, but also because the increasing power of the major corporations since the 1980s has enabled them to set the rules by which the market and society operate. The effect of this has been that copyright reform for the digital environment, such as the 1998 DMCA, has effectively granted rights holders free reign over the control of their works, again with explicitly narrow fair use exceptions.

The adverse effect of this tightening of copyrights is that the public's statutory rights have been diminished substantially. Copyright was originally understood to be a bargain which balanced the interests of the author, the publisher and the public and, particularly in US copyright, the public was explicitly named as the prime beneficiary through the exchange of ideas upon which future creators might build. The owner's monopoly was therefore limited in term and scope, and fair use became the public's side of the bargain. As the rights holder's protection expanded, fair use and the public domain diminished, and copyright has become less about promoting the progress of Science and the useful Arts as codified in the US Constitution, than it is about maintaining the status quo of the market place. The public therefore feel that their rights within copyright are being hijacked and that copyright is being used as a tool to outlaw what many consider to be legitimate behaviour. Copyright is the central issue around which the conflicting activities revolve. While the industry has successfully defined that unauthorized file exchange

infringes their rights, the public are also concerned that the rights owner's increased protection over his work also infringes their statutory rights.

Since both industry as well as the Internet community are now firmly ensconced in cyberspace, how can the interests of both parties be fulfilled? Just as copyright was originally deemed to serve the interests of the three parties involved in bringing a work to the market (the author, publisher and the public), can such a bargain or balance be struck in the environment which appears to disregard notions of copyright? The corporations want to exploit their recordings, and consumers have voiced an active demand, so can the conflicting parties be reconciled through aligned interests, without infringing each other's rights?

For the corporations, perhaps the most effective means of enforcing copyright on the network is through the development of technology which restricts the user's ability to copy and distribute recordings. Although the industry could have implemented watermark technology into audio CDs over ten years ago (which would have been a giant head start in the control of unauthorized recordings), CDs remain unprotected digital audio. Recent CD releases which incorporate restrictive technology have deliberately rendered the CDs unplayable on home computers. In the past this strategy has met with little success – BMG found that a large percentage of CDs were returned by consumers who complained that the CDs were faulty. However, this is likely to be a tactic that is increasingly attempted by all of the major labels despite its potential unpopularity with consumers. The obvious objection will be that since playing CDs on one's computer, and even ripping MP3s for personal use, is still a legitimate activity, corporate moves to block such activities plainly infringe consumer's rights. This has been the concern voiced by academics and laypeople alike: that once rights owners are given the freedom (by the DMCA) to control more and more uses through technology, the public's rights diminish accordingly. Perhaps a more popular version of CD-based copy protection technologies would permit legitimate personal use (playing on computers and ripping to MP3) while restricting the ability to redistribute the resulting MP3s over the Internet; this was the original plan for the SDMI specification.

As far as authorized digital distribution is concerned, any online major label offering is certain to be released in a format which imposes rules on user behaviour. The SDMI seems almost redundant in 2002, and other DRM systems have been generally slow to emerge and gain acceptance. Liquid Audio has been in existence

for several years, and Windows Media incorporates DRM technology, but whether major label initiatives will be successful remains to be seen. In terms of luring consumers from illegal services such as Morpheus or Audiogalaxy onto legitimate subscription music services, the major labels will need to offer added value over the obvious advantage that the illegal services offer: P2P services are free and MP3 usage is well established.

Such added value may emerge when and if legitimate services become available over other networked hardware devices such as mobile phones, cable and satellite TV, and eventually networked hi-fi devices. This would overcome the problem of competing with the established MP3 format, and the services could be tailored to provide value and convenience on different hardware media. The architecture of the devices could enforce user behaviour and even restrict the ability to copy, while the potential for fast data transfer over broadband services could provide an adequate incentive for many users to switch their consumption patterns. If consumers could be encouraged to switch from an overloaded narrowband Internet to fully interactive broadband services which included all types of entertainment, then they could enforce copyrights within a broadcasting framework which could incorporate the ability to generate copyright royalties and subsequent revenue streams. This could bring a broadband online environment in line with the current market structure while at the same time satisfying demand. It may not actually conflict with the decentralized activities of Internet users, but the provision of faster, more comprehensive, and more appealing services may be just what is required to satisfy a demand. This must, therefore, appear to be the major labels' longer term strategy.

In the short term, however, online interactive services will be provided via the Internet. At present the majors have just launched their embryonic *MusicNet* and *PressPlay* services which are little more than authorized Web-based streaming and download sites. Technological development will increasingly facilitate interactive services which recommend music based on personal preferences, which can supply either music on request or a playlist of music according to certain user-defined parameters. The range of music services which may become available would provide different levels of interactivity, from passive consumption through to full interaction.. They could be based around a playlist provided by the music service, or they could supply a selection of specific hand-picked tunes on request. The music in

question could range from fully mainstream hits from the major labels, through to niche markets from independent labels and service providers. Such services have not yet been developed to any extent, and it may be some time before technology develops enough for it to enable interactive services such as this to evolve.

In terms of the future development of the music industry, there are some scenarios which seem likely. The first is that the established model of production, promotion and distribution as practised by the major labels is likely to remain intact for the foreseeable future. It is a model that has evolved slowly over a long period of time, to which the music public is accustomed, and of which it generally approves. The insatiable appetite for charismatic icons and recognizable songs has fuelled the market for mainstream hit records and superstars. The industry structure which has been built to accommodate this market will be increasingly effective as corporations integrate on a global basis and extend their reach into the different corners of the converging multimedia markets. Copyright will remain the central system by which revenue is generated. Recent developments within copyright, such as the expansion of owner's rights, indicate that IPRs will grow in stature as they become increasingly significant as a source of revenue, and the economic importance of the cultural industries will expand accordingly.

Alongside this traditional model of music activity is the emergent online music market. This is split into three main strands of activity. The first is the legitimate market for major label copyrighted recordings. This will work within the logic of the established offline market outlined above. The online market is peripheral to the major labels' core offline market, and development of online services will not be dictated by technological advancement in its own right, but by the ability for technology to function within the logic of the traditional market. As demonstrated by the industry's lawsuits against innovative start-up technology companies, this has been the intention of the corporations all along – that however new or exciting technological development may seem, it will not be utilized by the majors if it threatens their exclusive ability to derive revenue through the copyright system. Therefore their subscription services *MusicNet* and *PressPlay* are offered within a DRM system which provides some level of copyright protection. As these services have only been launched in early 2002 it is too early to say how they will be received by the public, but they are the first stage along the long and winding road to the faster and more fully interactive services outlined above.

The second strand of activity is the illegal market for major label music. This looks set to continue unabated, since file sharing seems to be as popular as ever. Although Napster is being transformed into a legitimate service by BMG, other services continue to provide free access to copyrighted music on a peer-to-peer basis. Such services are increasingly difficult to target for litigation, as there are no central servers, user anonymity is protected, and these services will be increasingly built with the aim of being litigation-proof.

The third strand of activity is the legitimate market for independent music. At one end this is characterized by MP3.com, while at the other end are established artists for whom the major label system is no longer effective. In either case, independent digital distribution would appear to be a more realistic option than major label investment, due to the ability of the independent network to accommodate and consolidate a more diverse range of musical styles and niche markets. This is therefore the most likely arena for servicing the markets which are not economically feasible for the major companies to invest in.

The major record companies' attempts to eradicate online piracy are still fraught with difficulties as P2P music services are as popular as ever. Since P2P services will be increasingly elusive targets for litigation, the solution may be to offer attractive services that fulfil consumer demand. Just as MP3.com developed innovative services with the new technology, so the majors could follow that lead. Their aim must be to give consumers what they want, within their own framework of copyright, and then the interests of all three parties within the copyright bargain would be fulfilled: the artist, the publisher, and the consumer. For although the public's rights have diminished as the owner's rights over his works have expanded, increased competition within the new technology market could render this balance/imbalance irrelevant. The owner's complete protection over his work is pitted against the user's complete disregard for copyright. Therefore the benchmark against which a service is measured will be its practical value to the user. The only amenable solution seems to be an increase in the standard of music service provision by the major labels which fulfils consumer demand within the commercial framework of copyright. This is no easy task, but at last it may be time for the major record companies to be imaginative and innovative, rather than reactionary and authoritarian.

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Report of Peter S. Fader, Ph.D., Associate Professor of Marketing of the Wharton School of the University of Pennsylvania, PDF document, http://dl.napster.com/fader_070300.pdf

Report of Robert E. Hall, Ph.D., Robert and Carole McNeil Joint Professor of Economics, Senior Fellow, Hoover Institution, Stanford University, PDF document, http://dl.napster.com/Hall_report_final.pdf

Report of Lawrence Lessig, professor of law at Stanford Law School, PDF document, http://dl.napster.com/lessig.pdf

Declaration of John Perry Barlow, Fellow, Berkman Center for Internet and Society, Harvard Law School, PDF document, http://dl.napster.com/dec_barlow.pdf

Declaration of Chuck D., leader and co-founder of Public Enemy, PDF document, http://dl.napster.com/dec_ChuckD.pdf

Complaint for Vicarious and Contributory Copyright Infringement, violations of California Civil Code Sections 980 (a)(2), and Unfair Competition, United States District Court
Northern District of California, http://www.riaa.com/PDF/Napster_Complaint.pdf (d.a. 22/09/00)

Judge Marilyn H. Patel Opinion on Napster Preliminary Injunction, RIAA, http://www.riaa.com/pdf/opin.pdf (d.a. 25/09/00)

Report of Michael Fine (12/06/00), RIAA, http://www.riaa.org/PDF/fine.pdf (d.a. 14/08/01)

Jay, E.D. (12/06/00), *Survey of Napster Users, Report of E. Deborah Jay, PhD.*, RIAA, http://www.riaa.org/PDF/jay.pdf (d.a. 14/08/01)

RIAA vs. Diamond Multimedia Inc.

Robertson, M. (26/10/98) *RIAA Legal Filing Against Diamond,* MP3.com, http://www.mp3.com/news/109.html p. 4, section 10. (d.a. 18/11/99)

Robertson, M. (09/10/98) *Diamond Files Response to RIAA,* MP3.com, http://www.mp3.com/news/108.html p. 5. (d.a. 18/11/99)

Robertson, M. (26/10/98) *Diamond's analysis and comment on Rio Ruling,* MP3.com, http://www.mp3.com/news/117.html (d.a. 18/11/99)

Conferences and Seminars Attended or Auditioned

Future of Music Policy Summit, Webnoize Live (10/01/01), by webcast,
http://www.webnoize.com/live/coverage.rs?ID=Future+of+Music+Policy+Summit
Senator Orrin Hatch, Chair, Senate Judiciary Committee
A Music/Tech State of the Union
Traditional Industry Artists
Digital Millennium Copyright Act: Oh, What a Tangled Web We've Weaved
Open and/or Closed: the Future of Technology
Encryption & Watermarking Technologies: Will the Future be Secure?
The Work-for-Hire Clause
Michael Robertson, MP3.com
Monetizing the Ether: Disintermediating the Holy Grail

In The City 2000 Conference, Midland Hotel, Manchester (09/00), by CD-ROM,
Music as a Service: Michael Robertson (MP3.com)
To License or Distribute? That is the Question
The Principles of the 21st Century Record Contract
On Your Marx: The Political Economy of the Music Industry
Keynote Speech: John Kennedy (Universal Music)
Music for Money: Alternative Payment Models
The Corporate vs. Independent debate
The Sun Always Shines on TV: Webcast Rights
News From the Heads of New Media
The Globalization of Collection Societies
Exclusive Deals in a Digital Age
How Vitaminic Created a True Pan-European Brand
Islands in the Stream: Internet Radio
Guerrillas and their Lists: Digital Marketing
Is This the End of Copyright?
The Rights Stuff: Encryption, Encryption, Encryption

Net.Music Cybersalon, ICA, London, *(11/04/01)*

The New Aesthetics of Interactive Music
The New Political Economy of Interactive Music
Keynote speech – Jacques Attali

Out of Control? MP3 and the Popular Music Industry, University College Worcester conference, (20/04/01)
Kretschmer, M., *Where the Private Becomes Public: the Commercial Logic of File-sharing*
Brown, B., *Music Sharing as a Computer Supported Collaborative Application*
Dobie, I., *The Changing Nature of the Artist/Label Relationship*
Einbrodt, U., *The MP3 Format and its Chances for Musicians and Fans*
Marshall, L., *Metallica and Morality*
Toynbee, J., *The Napster Effect: Culture, Commodity and Gift on the Internet*

Plug.In, Jupiter and Media Metrix Conference (02/04/01 – 03/04/01), Word documents,
Artist Spotlight: Peter Gabriel, Artist, and Co-Founder, OD2
Defining the New Music Economy
Distribution And Retailing
Fair Use And Digital Rights
Morning Keynote – Andreas Schmidt
Networked Music Sharing
Opening Remarks – Charging for the Celestial Jukebox
Portable Music
Programming-The New Radio
Subscriptions Services And Beyond
The Billboard Roundtable
Trends In The European Internet Economy

Signal or Noise? The Future of Music on the Net, a Harvard Law School conference (25/02/00), by webcast, http://cyber.law.harvard.edu/events/netmusic_agenda.html
Welcoming Remarks – Charles Nesson
Modulating Music Online
Intellectual Property: Will Technology Kill It, or Only Make It Stronger?

Lunch and Conversation with Chuck D.

Cybermusicology

Collaborating Virtually

Musicians Empowered Online

Closing Remarks – John Perry Barlow

A Selection of Web Sites Consulted

Music Industry sites:

BMG, www.bmgentertainment.com

EMI, http://www.emigroup.com

International Federation of the Phonographic Industry, http://www.ifpi.org

Mechanical Copyright Protection Society, http://www.mcps.co.uk

MusicNet, http://www.musicnet.com

Performing Rights Society, http://www.prs.co.uk

PressPlay, http://www.pressplay.com

Recording industry Association of Amercia, http://www.riaa.com

Secure Digital Music Initiative, http://www.sdmi.org

Sony Music, http://www.sonymusic.co.uk

Soundbyting,*http://www.soundbyting.com*

The Recording Aacademy, http://www.grammy.com

The Velvet Rope, http://velvetrope.com/

Universal, http://www.universalrecords.com

Virgin, http://raft.vmg.co.uk/

Warner Brothers Music, http://www.warnerbros.com/music

Independent label sites:

Atomic Pop, http://www.atomicpop.com

Ministry of Sound, http://www.ministryofsound.com/

Ninja Tune, http://www.ninjatune.net/

Real World, http://www.realworld.on.net

Slamjamz, http://www.slamjamz.com/

Twin Tone, http://www.tt.net

V2 Music, http://www.v2music.com/

Artist sites:

Gray, David, http://www.davidgray.com

Hole Music, http://www.holemusic.com

McGuinn, Roger, http://www.mcguinn.com

NPG Online, http://www.npgonlineltd.com

Public Enemy, http://www.publicenemy.com

Reader, Eddi, http://www.eddireader.co.uk

Townshend, Pete, http://www.petetownshend.co.uk

The The, http://www.thethe.com

Artist-led community sites:

Farmclub, http://www.farmclub.com

Garageband, http://www.garageband.com

MP3.com, http://www.mp3.com

Music Unsigned, http://www.musicunsigned.com

Peoplesound, http://www.peoplesound.com

Rapstation, http://www.rapstation.com

UK Sounds, http://www.uksounds.com

Audio Technology sites:

Amplified, http://www.amplified.com

Diamond, http://www.diamondmm.com

Icecast, http://www.icecast.com/

InterTrust, http://www.intertrust.com

Liquid Audio, http://www.liquid.com

Microsoft, http://www.microsoft.com

Music Match, http://www.musicmatch.com

On Demand Distribution, http://www.od2.com

Real Networks, http://www.real.com

RioPort, http://www.rioport.com

Rocket Network, http://www.rocketnetwork.com

SSEYO, http://www.sseyo.com

Internet Industry sites:

Amazon, http://www.amazon.com

CAFE, http://www.eff.org/cafe

CD Baby, http://www.cdbaby.com

Computer Systems Policy Project, http://www.cspp.org/

Electronic Frontier Foundation, http://www.eff.org

Emusic, http://www.emusic.com

Evolab, http://www.evolab.com

The Forum on Technology and Innovation, http://www.tech-forum.org/

Fraunhofer Institute for Integrated Circuits, http://www.iis.fhg.de/

Free Software Foundation, http://www.gnu.org

Internet Society, http://www.isoc.org

MPEG, http://www.cselt.it/mpeg/

Napster, http://www.napster.com

Save The Web, http://www.savetheweb.org/

World Wide Web Consortium, http://www.w3c.org

Broadcast sites:

All India Internet Radio, http://www.aiir.com

Betalounge, San Francisco, http://www.betalounge.com

BBC, http://www.bbc.co.uk

Broadcast.com, http://www.broadcast.com

Cyberville Radio, http://www.cyberville.co.uk

Gaia Live, http://www.gaialive.co.uk

Global Dance Radio, http://www.global-dance-radio.com

GoGaGa Radio, http://www.gogaga.com

Groove Technologies, http://www.groovetech.com

Hyperreal, http://www.hyperreal.org/

InterFace, http://interface.pirate-radio.co.uk

Knitting Club, NY., http://www.knitmedia.com

Net Guide, http://www.netguide.com

Net Radio, http://www.netradio.net

Navrang Radio, http://www.navrangradio.com/

Q Radio, http://www.qradio.net

X-change, http://xchange.re-lab.net/

News & comment sites:

Atlantic Monthly Online, http://www.theatlantic.com

Business 2.0, http://www.business2.com

Cnet, http://news.cnet.com/

CNN, http://europe.cnn.com/

Guardian Unlimited, http://www.guardianunlimited.co.uk

New York Times, http://www.nytimes.com

Standard, http://www.thestandard.com

Wired News, http://www.wired.com/news/

ZdNet, http://www.zdnet.com

Commercial research sites:

Forrester Research, http://www.forrester.com

In the Name of Cool, http://www.inthenameofcool.com/main.html

Jupiter Communications, http://www.jup.com

NUA Internet Surveys, http://www.nua.ie/surveys/

Pew Internet and American Life, http://www.pewInternet.org/

Webnoize, http://www.webnoize.com

Academic research & resources sites:

Association of Research Libraries, http://arl.cni.org/

Boyle, J., http://james-boyle.com , http://www.law.duke.edu/fac/boyle/

Copyright & Fair Use, Stanford University Libraries, http://fairuse.stanford.edu/

Hypermedia Research Centre, Westminster University, http://www.hrc.wmin.ac.uk

The Information Economy, http://www.sims.berkeley.edu/resources/infoecon/

Information Law Institute, http://www.law.nyu.edu/ili/conferences/freeinfo2000/

Library of Congress, http://www.loc.gov

Litman, J., http://www.law.wayne.edu/litman/

MP3, Berkman Centre for Internet and Society,
http://eon.law.harvard.edu/h2o/property/mp3/main.html

The UCLA Online Institute for Cyberspace Law and Policy,
http://www.gseis.ucla.edu/iclp/hp.html

Individual research sites:

Brindley, P., http://www.paulbrindley.com/

MP3 Tech, http://www.mp3tech.org

Virtual Recordings, 'The Virtual Chronicle' of the Digital Music Revolution,
http://www.virtualrecordings.com/mp3.htm

Weekly, D., http://david.weekly.org

Whittle, R., First Principles http://www.firstpr.com.au

Legal sites:

Findlaw, http://findlaw.com

United States Patent and Trademark Office, http://www.uspto.gov/

Independent Marketing

ViralMarketers.com, http://www.viralmarketer.com

IntraPromote.com, http://www.intrapromote.com

Electric Artists, http://209.10.179.247/frames/home.html

Indiepromo.com, http://indiepromo.com/

Musicpromotion.net, http://www.musicpromotion.net

List of references

Abstract

[1] The term 'space' is often used throughout the dissertation to connote an area of activity, in the same way that 'cyberspace' or 'media space' does.

Introduction

[1] Throughout the thesis, the term 'music' generally refers to musical recordings as opposed to other forms of music such as performances or scores.
[2] 'Secure' delivery of online audio refers to the dissemination of recordings in formats which preclude unlimited consumer copying and redistribution.

Chapter One

[1] Negus, K., *Producing Pop* (London: Arnold, 1992), 38
[2] Ibid., 42
[3] Passman, *All You Need to Know About the Music Business*, 134
[4] Negus, *Producing Pop*, 67
[5] Ibid., 63
[6] Negus, K., *Music Genres and Corporate Cultures* (London: Routledge, 1999), 32
[7] Burnett, R., *The Global Jukebox*, (London: Routledge, 1996), 81
[8] The playlist is the pre-determined list of songs which are to be played on that programme.
[9] Burnett, *The Global Jukebox*, 81
[10] Passman, *All You Need to Know About the Music Business*, 74
[11] Frith, S., *Music For Pleasure* (Cambridge: Polity Press, 1988), 14
[12] Negus, *Producing Pop*, 22
[13] Ibid.
[14] Ibid.
[15] Gellatt, R. *The Fabulous Phonograph* (London: Cassell & Co., 1956) 97
[16] Lowe, J. (ed.), *The Incredible Music Machine* (London: Quartet/Visual Arts, 1982), 101
[17] Gellatt, *The Fabulous Phonograph*, 143
[18] Frith, *Music For Pleasure*, 14
[19] Negus, *Producing Pop*, 23
[20] Frith, *Music For Pleasure*, 17
[21] Ibid., 18
[22] Negus, *Producing Pop*, 23
[23] Ibid., 24
[24] Houlton, R. (1967) 'The Process of Innovation: Magnetic Recording and the Broadcast Industry in the USA', *Bulletin of Oxford Institute of Economics and Statistics* Vol. 29 part 1 pp 41-59
[25] Burnett, *The Global Jukebox*, 23

[26] Frith, *Music For Pleasure*, 19
[27] Ibid., 21
[28] Negus, *Producing Pop*, 25
[29] Burnett, *The Global Jukebox*, 18
[30] Kretschmer, M., Klimis, G., Wallis, R., *The Global Music Industry in the Digital Environment*, Mica, http://www.mica.at/pdf/kretschmer_c.pdf (d.a. 12/02/01)
[31] Anon (nd) *BMG Entertainment*, BMG, http://www.bmgentertainment.com (d.a. 29/03/00)
[32] Anon (nd), *Music: One of the Great Global Industries*, IFPI, http://www.ifpi.org.uk/about/industry.html (d.a. 29/03/00)
[33] Negus, *Music Genres and Corporate Cultures*, 37-42, also Garofolo, R., *From Music Publishing to MP3: music and industry in the twentieth century.* [attached by personal email, published in *American Music*, Autumn 1999, 318-353].
[34] Kretschmer *et al*, *The Global Music Industry in the Digital Environment.*
[35] Burnett, *The Global Jukebox*, 15
[36] Ibid.
[37] Ibid., 22
[38] Ibid., 13
[39] Gronov, P., "The Recording Industry: The Growth of a Mass Medium." In Middleton, R. and Horn, D. (eds.) Popular Music 3. (Cambridge: Cambridge University Press, 1983), 55-62, quoted in Garofolo, *From Music Publishing to MP3: music and industry in the twentieth century.*
[40] Guback, T., Varis, T. (1982) *Transnational Communication and Cultural Industries*, quoted in Burnett, *The Global Jukebox.*
[41] Burnett, *The Global Jukebox*, 8
[42] Hassan, R., "The Space Economy of Convergence", *Convergence 2000 Vol. 6 Number 4*, 18-35, 22.
[43] Ibid.
[44] Burnett, *The Global Jukebox*, 62
[45] Frith, *Music For Pleasure*, 19
[46] McQuail, D., 'Commercialization', pp152-178, in McQuail D. and Siune K. (eds), *New Media Politics* (London: Sage), 152
[47] *Frequently Asked Questions*, RIAA (1999) http://www.riaa.com/piracy/pir_faq.htm (d.a. 06/04/00)
[48] Burnett, *The Global Jukebox*,83
[49] Department for Culture, Media and Sport (04/00) *Consumers Call the Tune*, a report by the New Technology Group of the Music Industry Forum, 14.
[50] Burnett, *The Global Jukebox*, 79
[51] Denisoff, R. S., *Solid Gold: the popular recording industry* (New Jersey: Transaction, 1975), 3
[52] Negus, *Producing Pop*, 63
[53] Denisoff, *Solid Gold*, 113
[54] See Garofolo, *From Music Publishing to MP3: music and industry in the twentieth century.*
[55] In Britain, the Gallup charts are constructed on a weekly basis with data culled from two of six hundred music retail stores around Britain. This data shows which phonograms have sold the most numbers for that week, and the resulting charts are used by *Music Week* and by the BBC. Cauty, J., Drummond, B., *The Manual*

(London: Ellipsis, 1998) In the US, a similar system is in place known as 'Soundscan'.
[56] Negus, *Producing Pop*, 101
[57] Wicke, P. *Rock Music: Culture, aesthetics and sociology* (Cambridge: Cambridge University Press, 1990), 132
[58] The *breadth* of copyright refers to the number of uses over which copyright protection is granted.
[59] See Marshall, L., *Losing One's Mind*, 46.
[60] Ibid. 49.
[61] The reason why the public benefit from a shorter term of protection is that the work will enter the public domain sooner, whereupon the work can be used to generate new creations and ideas. The publisher benefits from longer protection because he is then able to profit from his limited monopoly for a longer period of time.
[62] It is *ironic* that the author should be the central figure within copyright, because although the publisher cites the author's rights as the cause to lobby for longer protection, the author (generally) gains very little revenue from copyright while the publisher gains the majority of revenue from copyright.
[63] The increased scope of copyright and its effects is covered more fully in Chapters Two and Three
[64] *The Rights of a Copyright Owner*, Performing Rights Society (1998), http:/www.prs.co.uk/Copyrightowner (d.a. 15/01/98)
[65] Thanks to R. Bauer (formerly of MCPS) for clarification on the finer details of this discussion of copyright within the music industry (provided by personal email, 03/05/01).
[66] See Kretschmer, M. (21/08/00) *Music Copyright and Creativity in the Digital Environment*, Mica, http://www.mica.at/micazine/texte.php3?artid=16&backid=5 (d.a. 12/02/01)
[67] Passman, D., *All You Need to Know About the Music Business* (Harmondsworth: Penguin, 1998), 225
[68] The term 'phonogram' means a sound carrier, and refers to the physical music format, e.g. records, tapes and CDs, rather than the musical recording itself.
[69] Bauer, R. (personal email, 03/05/01).
[70] See Mann, C. (09/00) *The Heavenly Jukebox*, The Atlantic Monthly, online version, http://www.theatlantic.com/issues/2000/09/mann.htm (d.a. 21/11/00)

Chapter Two

[1] The CD was developed as a result of proposals from a number of manufacturers for a digital audio disc, after primary development between Philips and Sony. Ian Sinclair, ed. *Audio & Hi-Fi Handbook, Second edition* (Oxford: Newnes, 1993), 144
[2] See Kretschmer *et al, The Global Music Industry in the Digital Environment*, 3.
[3] See Maddox, R., *The DAT Technical Service Handbook* (New York: Van Nostrand Reinhold), 1.
[4] Watkinson, J. *RDAT* (Oxford: Focal Press, 1991), v.
[5] Jones, S. "Music and Copyright in the USA", Frith, S. (ed.) *Music and copyright* (Edinburgh: Edinburgh University Press, 1993) 67-85, 68.
[6] Serial copying refers to copies made from copies made from copies etc. which, if done digitally, would not degrade the audio quality.

[7] The information in this paragraph on SCMS is sourced from Maddox, *The DAT Technical Service Handbook*, 159.
[8] *A & M Records, inc., et. al. v. Napster, inc. Brief for the United States as Amicus Curiae*, Library of Congress, http://www.loc.gov/copyright/docs/napsteramicus.pdf p. 11 (d.a. 21/02/01)
[9] In the words of the Ninth Circuit Court of Appeals Judge Diarmuid F. O'Scannlain; Sprenger, Polly (15/06/99) *Rio Rolls Over RIAA*, Wired News, http://www.wired.com/news/politics/0,1283,20235,00.html
[10] The following information is from a declaration by James M. Burger, who at the time was the Apple Computers' official responsible for intellectual property policy issues, and also Chairman of the Intellectual Property Committee of the Information Technology Industry Council. Robertson, M. (20/10/98) *Diamond Reveals Secret weapon in Rio Battle*, MP3.com, http://www.mp3.com/news/114.html (d.a. 22/11/99)
[11] Accordingly, users who copied recordings using computers and peripherals (such as CD writers) *would* legally be liable for copyright infringement as the consumer protection afforded by the AHRA would not be applicable.
[12] Whittle, Robin. (1999) *Comparing AAC, MP3 and TwinVQ Lossy Compression of Audio,* First Principles, http://www.firstpr.com.au/aac-mp3-vq.html
[13] Bit-rate refers to the resolution, or sample rate of a file, measured in bits per second. A file with a bit-rate of 128 kbps (kilobits per second) has a higher bit-rate, and therefore contains more data per second, than a file with a bit-rate of 64 kbps.
[14] Watkinson, *Compression In Audio and Video*, 1.
[15] Purnhagen, D. Thom. H. and the MPEG Audio Subgroup (Oct. 1998) *MPEG Audio FAQ Version 9*, International Organization for Standardization coding of moving pictures and audio, http://www.cselt.it/mpeg/faq/faq-audio.htm
[16] Watkinson, *Compression In Audio and Video,* 3.
[17] Weekly, D. (08/03/01), *Chapter 1: The Hype about Internet Audio*, http://david.weekly.org/mp3book/ (d.a. 03/05/01)
[18] http://www.iis.fhg.de/
[19] Watkinson, *Compression In Audio and Video,* 1.
[20] Purnhagen, and the MPEG Audio Subgroup (Oct. 1998) *MPEG Audio FAQ Version 9*, http://www.cselt.it/mpeg/faq/faq-audio.htm (d.a. 12/02/01)
[21] Ibid.
[22] Bouvigne, Gabrielle (1997-99) *Overview of the MP3 Techniques,* MP3'Tech, http://www.mp3tech.org/tech.htm
[23] Whittle, Robin. (1999) *Comparing AAC, MP3 and TwinVQ Lossy Compression of Audio,* First Principles, http://www.firstpr.com.au/aac-mp3-vq.html
[24] Weekly, *Chapter 1: The Hype about Internet Audio*
[25] Burnett, *The Global Jukebox*, 89, also Kapp, M., Middlestat, M., Fishbein, M., *Home Taping: a Consumer Survey* (New York: Warner Communications Ltd., 1982), also Brown, B., Sellen, A., Geelhoed, E., "Music sharing as a computer supported
collaborative application", *Proceedings of ECSCW 2001* (Bonn, Germany: Kluwer, 2001).
[26] Mintel (1998), *Mintel report: Records, tapes, CDs* (London: Mintel, February 1998), quoted in Brown *et al*, "Music sharing as a computer supported collaborative application", 7.
[27] Brown *et al*, "Music sharing as a computer supported

collaborative application", 8.
[28] Ibid.
[29] Jones, C., Sullivan, J. (14/10/99), *More Popular than Sex*, Wired News, http://www.wired.com/news/business/0,1367,31834,00.html (d.a. 13/08/01)
[30] Anon (1893) *Article I Section 8 | Clause 8 - Patent and Copyright Clause of the US Consitution*, Findlaw, http://caselaw.findlaw.com/data/Constitution/article01/ (d.a. 14/01/00)
[31] Anon (1999), *U.S. Supreme Court, Fox Film Corp. v. Doyal, 286 U.S. 123 (1932)*, Findlaw, http://laws.findlaw.com/US/286/123.html (d.a. 14/01/00)
[32] Anon (1999), *U.S. Supreme Court, Feist Publications Inc. v. Rural Tel. Service Co. 499 U.S. 340 (1991)*, Findlaw, http://laws.findlaw.com/US/499/340.html (d.a. 14/01/00)
[33] Litman, J., *Digital Copyright* (New York: Prometheus, 2001) 79.
[34] Anon (1995), *Fair Use in the Electronic Age: serving the Public Interest*, Association of Research Libraries, http://arl.cni.org/scomm/copyright/uses.html (d.a. 14/01/00)
[35] Anon (1999), *U.S. Copyright Act, section 107: limitations on exclusive rights: fair use*, U.S. Code, http://caselaw.lp.findlaw.com/casecode/uscodes/17/chapters/1/sections/section_107.html (d.a. 07/03/01)
[36] Frith, S., "Music and Morality", Frith (ed.), *Music and Copyright*, 3.
[37] Anon (1999), *U.S. Supreme Court, Sony Corp. v. Universal City Studios Inc. 464 U.S. 417(1984)* Findlaw, http://laws.findlaw.com/US/464/417.html (d.a. 14/01/00)
[38] Ibid.
[39] Nimmer, M. (1982), *Copyright Liability for Audio Home Recording*. This provision was stated in the House Report for the 1971 Amendment, H.R. Rep. No. 487, 92d Cong., 1st Sess. 7, reprinted in 1971 U.S. Code Cong. & Ad. News 1566, 1572.
[40] Section 1008 of the AHRA, summarized in the Home Recording Rights Coalition, *AHRA Summary*, http://www.hrrc.org/html/ahra_summary.html, (d.a. 21/03/02)
[41] See Litman, *Digital Copyright*, 80.
[42] Title taken from RIAA (2001), *What is Piracy: Old As the Barbary Coast, New as the Internet*, RIAA, http://www.riaa.com/Protect-Campaign-1.cfm (d.a. 10/05/01)
[43] Ibid.
[44] *Glossary*, RIAA (1999) http://www.riaa.com/piracy/pir_gl.htm (d.a. 10/05/01)
[45] Marshall, L., *Losing One's Mind*, PhD thesis, 173.
[46] RIAA (2001), *What is Piracy*, http://www.riaa.com/Protect-Campaign-1.cfm (d.a. 10/05/01)
[47] See *Music Piracy Report 2000*, IFPI (2000) http://www.ifpi.org/library/Piracy2000.pdf (d.a. 12/02/01)
[48] See Brindley, *New Musical Entrepreneurs*, 38
[49] See *Music Piracy Report 2000*, IFPI.
[50] *Frequently Asked Questions*, RIAA (1999) http://www.riaa.com/piracy/pir_faq.htm
[51] See Kretschmer, M., "Intellectual Property in Music: A Historical Analysis of Rhetoric and Institutional Practices", *Studies in Cultures, Organizations and Societies*, 2000, Vol. 6, pp. 197-223, 204.
[52] Marshall, L. (20/04/01), *Metallica and Morality*, paper given at "Out of Control? MP3 and the Popular Music Industry" conference, University College Worcester.

[53] From an article in the New York Times supplied to the IASPM email list (11/05/00) http://www.nytimes.com/yr/mo/day/news/financial/record-antitrust.html
[54] Mann, C., *The Heavenly Jukebox*, Atlantic Monthly online, http://www.theatlantic.com/issues/2000/09/mann3.htm (d.a. 12/02/01)
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Chapter Three

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[47] http://www.rioport.com
[48] http://www.emusic.com
[49] http://www.peoplesound.com

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Chapter Four

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[25] Negus, *Producing Pop*, 101
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[28] Mooradian, M. (1999), *Online Retail Music Sets the Stage for Digital Distribution*, Jupiter Communications, http://www.jup.com (d.a. 08/99)
[29] http://www.real.com
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[32] McChesney, R. W., "The Political Economy of Radio", *Seizing the Airwaves*, Sakolsky, R. & Dunifer, S., eds. (Edinburgh: AK Press, 1998), 17-24, 18.
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[34] Anon (11/07/00) *Real Guide*, Real Networks, http://www.uk.real.com/guide/ (d.a. 11/07/00)
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[37] Lists the information of each track played by the station DJ, such as; Artist, track name, album on which it appears, record label. For an example of such a playlist see the site for Gogaga radio at http://www.gogaga.com/dyn/MRN/playlist.html?stationName=Alternative (d.a. 14/07/00)
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Chapter Five

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[16] Johnson, M. (16/08/00) *The The versus 'em all*, The The News, http://www.thethe.com/ModuX/info/info_class.php3?no_limit=1 (d.a. 06/11/00)
[17] Anon (n.d.) *About MP3.com: Getting Started*, MP3.com, http://www.MP3.com/aboutus.html (d.a. 19/06/00)
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[19] Anon (n.d.) *Active summary for 303infinity Payback for Playback statistics*, http://artists.MP3s.com/artist_stats/34/303_infinity.html (d.a. 26/10/00)
[20] Figures provided by personal communication from high-earning artists on the Payback scheme.
[21] This position was almost universally consistent among the artists whom I contacted via email in relation to this issue.
[22] Quoted from personal email communication.
[23] Brindley, P. (01/06/00) *All the web's a Stage*, Guardian online, http://www.guardianunlimited.co.uk/Archive/Article/0,4273,4024047,00.html (d.a 24/10/00)
[24] King, B. (03/10/00) *Making Music that Pays*, Wired News, http://www.wired.com/news/MP3/0,1285,39117,00.html (d.a. 27/10/00)
[25] Bennett, P., "Serious Moonlighting", *Internet Magazine* (Feb. 1999), 20-24, 20.
[26] Ibid., 24.
[27] Ibid.
[28] Ibid.
[29] See http://www.npgonlineltd.com
[30] Love, *Love's Manifesto.*
[31] D, Chuck (02/10/00) *Across the Water under the Underground...here come the 'Inties'*, Public Enemy Terrordome, http://www.publicenemy.com/terrordome/index.html (d.a. 30/10/00)
[32] Negus, *Producing Pop*, 158.
[33] Schreiber, D., Husak, M. (20/07/00) *Jupiter Finds Napster Users Are 45 Percent More Likely to Increase Music Spending*, Jupiter Communications, http://www.jup.com/company/pressrelease.jsp?doc=pr000721 (d.a. 03/10/00)
[34] King, B. (15/06/00) *Napster's Good? Bad? Er, What..?*, Wired News, http://www.wired.com/news/mp3/0,1285,37018,00.html (d.a. 03/10/00)
[35] See Love, *Love's Manifesto.*
[36] as Pete Townshend said: "I give away some of my music. If it is packaged well I sell it." Townshend, P. (10/01/01) *Diary: Napster*, Pete Townshend Web site, http://www.petetownshend.co.uk/press_release_diary_display.cfm?id=3961 (d.a. 28/03/01)
[37] Proven by the popularity of Web sites which offer CDs at discount prices.
[38] Townshend, P. (10/01/01) *Diary: Napster.*
[39] Negus, *Producing Pop*, 150.
[40] See Rapstation, http://www.rapstation.com/artists/public/index.php3?list=rapstyles (d.a. 04/04/01)
[41] See Brindley, *New Musical Entrepreneurs*, 48.
[42] D, Chuck (02/10/00) *Across the Water under the Underground...her come the 'Inties'*, Public Enemy Terrordome, http://www.publicenemy.com/terrordome.php?item=23 (d.a. 03/11/00)
[43] I say "in principle" here because a 50-50 agreement on a record which sells no units is not necessarily better than a 90-10 agreement on a record which shifts 1 million units.
[44] See Brindley, *New Musical Entrepreneurs*, 48.

Chapter Six

[1] Hassan, R., "The Space Economy of Convergence", *Convergence 2000 Vol. 6 Number 4*, 18-35, 18.
[2] Ibid.
[3] *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, And the Implications for Regulation*, COM (97) 623 final, Commission of the European Communities (03/12/97), p 1.
[4] Voldeng, L., "Television in the Post-Media World", in Voldeng, L., Kloppenburg, L., Thaler, M., Lavallee, J., Cassidy, P., Thayler, P., Johansson, E., Kessel, J., *Television 2001: Gorillas in the Myth – ITV Demand and Desire*, Digital Mogul, April 2001, by email, http://www.digitalmogul.com
[5] Brindley, *New Musical Entrepreneurs*, 15.
[6] *Fourth Report: The Multi-media Revolution,* House of Commons Select Committee on Culture, Media and Sport (22/05/98), 12.
[7] Cassidy, P., Johansson, E., Thayer, R., "ITV Infrastructure, Mechanics and Machinations", in Voldeng *et al, Television 2001: Gorillas in the Myth*, 20.
[8] *Fourth Report: The Multi-media Revolution*, 57.
[9] Mann, C. (09/00) *The Heavenly Jukebox*, The Atlantic Monthly, online version, http://www.theatlantic.com/issues/2000/09/mann.htm (d.a. 21/11/00)
[10] Mooradian, M. (1999), *Online Retail Music Sets the Stage for Digital Distribution,* Jupiter Communications, http://www.jup.com (d.a. 08/99)
[11] DeRose, G. & Packo, M. (06/00), *Facts and Perspectives on the Music Player Market*, Jupiter & Media Metrix Plug-In report, p. 4, http://plugin.jup.com/research/jmm04.html (d.a. 21/11/00)
[12] Employing a modem, the telephony system has become the main home delivery system for the Internet. *Fourth Report: The Multi-media Revolution*, 52.
[13] Brindley, *New Musical Entrepreneurs*, 20.
[14] Although these figures represent the maximum possible data transfer for this type of hardware, the overall speed of the Internet drastically reduces these speeds. Realistically, data transfer rates of DSL lines can achieve 60kbps to 260 kbps. Anon (n.d.) *The Knowledge*, Nildram UK, http://www.getadsl.co.uk/knowledge.asp (d.a. 22/11/00)
[15] Anon. (n.d.) *Getting Connected*, Cable Modem Information Network, http://www.cable-modem.net/gc/basics.html (d.a. 22/11/00)
[16] Anon (n.d.) *The Network Architecture*, ASTRA, http://www.ses-astra.com/multimedia/bbi/components.htm (d.a. 22/11/00)
[17] DeRose & Packo, *Facts and Perspectives on the Music Player Market.*
[18] Ibid.
[19] Voldeng, L., "Television in the Post-Media World", in Voldeng *et al, Television 2001*, 4.
[20] DeRose & Packo, *Facts and Perspectives on the Music Player Market.*
[21] Once a single has climbed down the charts it is no longer produced, therefore the only method of obtaining a copy of that song is by purchasing the album.
[22] See Chapter One for a more in depth discussion of how the music industry operates around and relies upon a star system.
[23] During 1999 it was thought that falling costs would manifest themselves in smaller unit prices per individual download. However, consumer reluctance to pay for

individual downloads, in conjunction with more recent findings indicate that subscription models would be a more palatable payment model.

[24] See Chapter Four for more information on how computer technology has decreased the costs of producing music.

[25] Chapters Four and Five also touch upon these issues.

[26] Brindley, *New Musical Entrepreneurs*, 26.

[27] Griffin is CEO of Cherry Lane Digital, an Internet business incubator and think tank that focuses on music and entertainment. He plays many different roles: founder of new companies (EvoLab, dedicated to wireless delivery of music and other content), pundit (monthly columns in Business 2.0, keynote speeches, and congressional testimony), and creator of the Pho list, almost certainly the biggest and most active online discussion group about the future of online music. He also served five years as head of technology at Geffen Records. Mann, C. (09/00), *The New Tastemakers*, Atlantic Monthly Online, http://www.theatlantic.com/issues/2000/09/mann-griffin.htm (d.a. 29/11/00)

[28] Griffin, J. (11/07/00) *This is the statement of Jim Griffin before the Senate Judiciary Committee*, http://www.senate.gov/~judiciary/7112000_jg.htm (d.a. 28/11/00)

[29] Voldeng, "Television in the Post-Media World", in Voldeng *et al*, *Television 2001*, 4.

[30] These distinctions/categories were adapted from Kretschmer *et al*, "Music In Electronic Markets", 13.

[31] This is not a straightforward supply and demand. Chapter One analyses the issues surrounding the supply of music by record companies in relation to the demand by record buyers, and how the industry influences the market through its domination of the media channels.

[32] Mann, *The New Tastemakers*

[33] Ibid.

[34] Brown *et al*, "Music sharing as a computer supported collaborative application".

[35] Griffin, J. (11/07/00) *This is the statement of Jim Griffin before the Senate Judiciary Committee*, http://www.senate.gov/~judiciary/7112000_jg.htm (d.a. 28/11/00)

[36] Griffin, J. (01/01/00) *That's Right, the Women Are Smarter*, Business 2.0, http://www.business2.com/content/magazine/vision/2000/01/01/12556 (d.a. 05/01/01)

[37] Ibid.

[38] Voldeng *et al*, *Television 2001*, 4.

[39] DCMS, *Consumers Call the Tune.*

[40] http://www.musiccity.com (d.a. 08/08/01)

[41] See Voldeng *et al*, *Television 2001*, 8.

[42] Digital Mogul note that the number of TV set connections (to hi-fi, games console, DVD, VCR etc.) is growing to give the TV more functionality within a 'home theatre' set-up. See Kessel, J., "Television's Function in the Household", Voldeng *et al*, *Television 2001*, 35.

[43] Mills, M. (April 2000) "Introduction", *Consumers Call the Tune.*

[44] See Lessig, *Code and Other Laws of Cyberspace*, 87.

[45] *Consumers Call the Tune*, 11.3.

[46] See Lessig, *Code and Other Laws of Cyberspace*, 93.

[47] *Consumers Call the Tune*, 10.3.
[48] Brindley, *New Musical Entrepreneurs*, 75.
[49] Webnoize (19/02/01), *There's No Waffling In Belgium*, snapshot@webnoize.com, by email.

Chapter Seven

[1] Barlow, J. (1992-1993) *The Economy of Ideas: Selling Wine Without Bottles on the Global Net*, Electronic Frontier Foundation, http://www.eff.org/~barlow/EconomyOfIdeas.html (d.a. 09/08/01)
[2] Barlow, J. (08/02/96), *A Declaration of the Independence of Cyberspace*, Electronic Frontier Foundation, http://www.eff.org/~barlow/Declaration-Final.html (d.a. 09/08/01)