

Liaisons dangereuses between legal and illegal industries in content consumption: the bridging role of information brokers¹

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1. Introduction

A fervent international debate is arousing around the issue of illegal distribution and consumption of contents (music, video, etc.), involving content producers, consumers, policy makers and other players of the so-called digital convergence (software developers, hardware producers, internet service providers, etc.). Generally being referred to as “piracy”, the phenomenon may in part be considered endogenous – some kind of natural imperfection (Shapiro, 1988) – to the rent exploitation possibilities generated by copyright on information goods. In the last decade, however, the advent of the digitization, the growth of the Internet, and the development of peer-to-peer platforms, has notably broadened the unauthorised distribution and consumption of contents, challenging the traditional industries structures. The paradoxical situation is that consumption of the so called information goods has increased dramatically, while the markets for content products have remained the same, when not collapsing.

Faced with this phenomenon, most of the copyright owners react going to law, bringing actions against both suppliers and end-users of peer-to-peer platforms. Such litigations are currently made viable thanks to severe legislations and to technical tools able to collect evidences of illicit behaviours on peer-to-peer networks.

We owe to the lobbying ability of traditional content providers to protect their business models the fact that the illegal distribution of content covers such a wide array of situations and that peer-to-peer dissemination and centralised distribution have been so far considered two distinct domains. In this paper, mainly focusing on the music industry, we explore the interplay between the legal and the illegal distribution of contents and wonder under which conditions it is possible for incumbents to gain market insight or other forms of value from the illegal markets, so that it would be beneficial for the industry that both legal and illegal markets be part of the same competitive space. We argue that should incumbents – namely content producers and music companies – be able to extract value from the dynamics occurring in the illegal markets, it would be their vested interest also to actively contribute to the redefinition of portions of the illegal markets and to develop innovative services to compensate for the loss occurring in the recorded music markets.

This should be clearly considered an explorative study building on several methodologies and on strategic management, marketing as well as law literature to drive scenarios and propositions on the music industry and on the broader content industries and related information goods protection policies. Building on case analysis methodology, we address the critical role of two emerging information brokers monitoring P2P data which have grown out of the interplay between legal and illegal industries, the first focusing on market intelligence (BigChampagne), the second

pursuing anti-piracy purposes (Logistep).

The paper is structured as follows: we first look at the evolution of the copyright legislation and practice and the concomitant structural and irreversible changes determined by the advent of digital technologies which affected the music and, more generally, the content industry and its players on how content is distributed and accessed. We then look at how music companies cope with the challenges and opportunities offered by the exponential growth of illegal music consumption in terms of new promotional and distribution channels and of market intelligence based on P2P filesharing data, focusing our attention on the case of BigChampagne. We then analyze some legal strategies recently undertaken to thwart illegal file-sharing by illustrating the case of Logistep.

On the basis of the analysis of these two different information brokers, we then discuss under which conditions should the information on different types of consumption be organised, in order to allow for a growth in market size, fair compensation of copyright holders, adequate remuneration of intermediaries and better and safer access to music by end users.

2. Defining the boundaries of 'legality' and of industries and the role of the end-user

The story of copyright law is, to a larger extent, a narrative of institutional responses to the emerging of new uses of copyrighted works made possible by technological shifts. Among these shifts that have accompanied the copyright history since its very beginnings – starting from the 'inaugural' one, represented by the invention of printing at the end of the 15th Century – it is worthwhile to mention the emerging, in the second half of the 20th Century, of technologies allowing individuals to cheaply copy works of authorship. Photocopier in the '50, audiotaping in the '70, videotaping in the '80, dramatically affected the ways of using and sharing – respectively – books, music, and broadcasts. Thenceforth private copying and dissemination became integral part of users' attitude towards cultural goods, partly cooperating and partly interfering with traditional reproduction and distribution mechanisms controlled by right holders. Copyright industries reacted mostly negatively whenever a new technology like that appeared. Legislators repeatedly faced the problem of balancing the (legitimate) interests of copyright owners and the (legitimate as well) interests of both producers and end users of copying technologies.

In order to define what kind of uses of the new technologies were to be considered admissible, and what were subject to the authorization of the right holder(s), legislators and courts have been so far guided by a twofold test, namely, 1.

what kind of use is made of the copying technology ('private' or 'public'), and 2. how rights affected by that use are to be managed ('individually' or 'collectively'). Since about ten years ago law makers were generally oriented in exempting private copying of copyrighted material from liability, imposing at the same time levies for these uses. In most countries, for instance, law permits photocopying of books in a moderate amount and for specific purposes (e.g. private study and research), or subject to 'fair dealing' or 'fair use' doctrine, while providing for remuneration schemes based on levies on manufacturers of photocopying devices and on users of these devices (commercial businesses, training institutions, libraries, etc.) and on compulsory licenses administered by collecting societies. Such arrangements, which take place in most legislations and for most of the copying devices (audio and video taping, CD burnings and blank CDs), "occupy a position on the continuum of copyright and author's right somewhere between exclusive rights and absolute exemption", reflecting the judgement "that to extend an exclusive right would hamper socially important uses [...], but that to make the use entirely free would seriously impair needed rewards for the author" (Goldstein, 2001). Exclusive rights are not abolished, but partially converted into simple 'remuneration right'. As a result, 'socially important uses' are kept within the boundaries of law.

Yet in the last ten years this process of 'absorbing' private copying practices into copyright law has been disrupted. Copyright history seems to be discontinued when digital copying technology flooded the market and the Internet became part of everyday's life of a growing mass of people. As it has been brilliantly pointed out, the disrupting feature of digital copy in the cyberspace, as contrasted with previous copying technology, can be outlined in three words: *perfect*, *anytime* and *anywhere* (Ricolfi, 2006). 'Perfect', since any digital copy is identical to the original; 'any time', while the end-to-end architecture of the web permits end users to have access to content regardless to the timing determined by the right holder; and 'anywhere', as the net crosses geographical frontiers. As a result, digital technology impact copyright law differently from any previous analogue copying technology: copies tend to be infinitely available at a risible marginal cost, breaching chronology of content distribution and bypassing local regulations.

A similar disruption occurs also in the relationship between economic actors involved with musical content distribution and consumption. Before the advent of digital technologies, the music industry was structured around the manufacturing and distribution of products, namely vinyl records first, and CDs afterwards. Music companies were and are in the immaterial business of scouting and promoting musical talents, but owed their results to the efficient management of physical products, and their sources of competitive advantage in scale manufacturing and distribution. Therefore, it was not surprising that they sought protection of the rents generated by proprietary content. Digitization has made it possible to exchange musical content

without physical support; players could therefore build their business models around products (i.e. Cds), content (as in the case of ringtones) and services associated to content, serving increasingly smaller niches (Anderson, 2006).

While the traditional music industry was structured around the relationship between authors and music companies, with a clear superior bargaining power of the latter over the overall industry chain, digitization has set the basis for a fragmentation of the industry, the emergence of the role of information brokers and the active involvement of the user in the scouting, promotion and selection of music. A rent protection infrastructure designed for the manufacturing world has proven to be ineffective in the immaterial service world, in which the content is still key in driving performances, but information on content use becomes even more important.

End users have notably played a determinant role in reshaping the music industry structure and setting its future trajectory, as they have embraced en masse the illegal consumption of copyrighted material. Adopting the point of view of consumer behaviour analysis, some research has investigated the factors underlying illegal consumption of contents, showing that personal attributes (age, sex, level of instruction, etc.) and, more specifically, capabilities in computer and Internet use, may have an important role (Gopal & Sanders, 1997; Kwong, Yau, Lee, Sin, & Tse, 2003; Ruegger & King, 1992; Sims, Cheng, & Teegen, 1996). More interestingly, some seminal studies have shown that there are relationships between legal and illegal content consumption: people may, in fact, at the same time be consumers of legally or illegally distributed contents causing to engender mutual relationships between the two options (Bhattacharjee, Gopal, Lertwachara, & Marsden, 2006). Scholars have argued that part of the unauthorized consumption of music may be considered as sampling, in other words, the try-out of content before deciding to buy it (Conner & Rumelt, 1991; Peitz & Waelbroeck, 2006; Shy & Thisse, 1999; Takeyama, 1994). Results, though, are not always univocal (Boorstin, 2004; Liebowitz, 2005; Oberholzer & Strumpf, 2004). Moreover, some authors have pointed out that, even by not considering possible lawsuits, unauthorized consumption may not always be the most rewarding option, although being gratuitous; the illegal distribution has its downsides, mainly referring to content quality, content availability and (Gantz & Rochester, 2004; Peitz & Waelbroeck, 2004). Relationships between publishers and consumers are also part of the game; the clash between publishers – once acting as invisible intermediaries of the author-consumer relationship – and end-users, grown out of repressive actions being taken, may act as a justification for illegal consumption.

But what is the economic impact of illegal downloading on the overall music industry? Even though consumers get for free (but bear some risk) what they previously had to pay for, they are not strong enough as a player to be able to influence alone the structure of the industry.

More specifically:

- There are some relevant relationships between technology innovation and the spread of illegal consumption. Some groundbreaking technologies have been used to illegally distribute content, which now have become industry standards for legal commercial services. This may apply for example to digital content file compression formats (mp3, Divx, etc.), to content distribution platforms (just think of P2P protocol and platforms) and to content transmission standards (Clark & Tsiaparas, 2002; Dong, Li, Chen, & Zheng, 2002; Prasad, 2006; Zhang, 2002). Technology specialists have also given broad attention to the controversial issue of DRM systems and standards: extensively adopted in digital content distribution, DRM is often considered to be a limitation for thorough content consumption and distribution (in comparison with physical mediums) and quite difficult to manage (Felten, 2003; Lipinski, 2003; Litman, 2001; Neal, 2002). It is also alleged to violate privacy and PC security, and even freedom of speech, thus generating some wariness in end-users (Lessig, 2004; Vaidhyanathan, 2001).
- Scholars have focused on studying the content production and distribution industry structure and business models, pointing out that the piracy issue involves various players belonging to connected industries, as content consumption strongly depends on the availability and development of related goods and services – i.e. media electronics, software, internet services, etc. (D’Astous, Colbert, & Montpetit, 2005; Gandal, Kende, & Rob, 2000; Karaca-Mandic, 2003; Nascimento & Vanhonacker, 1988; Shy & Thisse, 1999). Thus, these players not always share the same point of view: while publishers equate piracy with huge losses due to unsold products, consumer media electronics producers, hardware producers, content reproduction software developers and Internet Service Providers seem to benefit from the wide diffusion of contents caused by file sharing networks.

At the same time, as more players entered in the picture, each tried to protect as much as possible their own rent generating assets. The current debate on the boundaries between legal and illegal industries involves a variety of actors belonging to connected industries, not always sharing the same point of view:

- Authors, who still have not reached a widely shared opinion on this issue. Though copyright protection is the basis of commercial exploitation of intellectual goods, the free distribution of artwork may be relevant to people who seek to achieve visibility;
- Publishers, who equate piracy with huge losses due to unsold products;
- Distributors, who basically share the publishers’ view, but complain the limitation caused by DRM;
- Media compression codec developers (i.e., Fraunhofer, etc.) who eased content distribution by lowering files’ size, still ensuring acceptable quality for

end-users;

- Policy makers, who enact and enforce restrictive copyright protection laws, often under the pressure of content producers.

The illegal digital content diffusion industry hosts a wide array of players, ranging from individuals and organizations (often criminal organizations) who illegally copy, distribute and sell contents on physical medium to enthusiasts, belonging to various kinds of virtual communities sometimes driven by mutualistic goals (Craig, Burnett, & Honick, 2005; Eschenfelder, Howard, & Desai, 2005; Goode & Cruise, 2006) and claiming that the music industry grabs an excessive portion of the value created at the expenses of artists and creativity:

- People who generate the first reproducible digital copy (commonly called Rippers or Crackers);
- People who develop file-sharing platforms (Bittorrent, Emule, etc.), or related graphical user interfaces;
- People who host contents on dedicated servers (a node on peer-to-peer networks, ftp servers, websites, etc.) or search engines;
- Virtual communities who help end-users in using the different platforms or in searching contents;
- End-users who implicitly support illegal content diffusion by sharing files and thus becoming a redundancy node or by contributing with new contents.

At the same time, specialised players are becoming increasingly active in the organization and management of information associated with content²: syndication groups, metadata management structures and so on. These players are essentially intermediaries in the relationship between the artist and the public, and may act in the interest of the publisher or of the consumer. Furthermore new specialized players, two of them we are going to focus on in the next paragraphs, are growing out of the relevant opportunities connected with managing information in filesharing systems:

- BigChampagne, which represents an interesting case of how P2P filesharing systems may be used for market intelligence;
- Logistep, which emblemizes how P2P data can be used not only to fight piracy, but also to achieve added revenues from small-sized publishers.

² The role of such actors has already been analyzed by a number of scholars, for instance, Anand & Peterson, 2000, Ariely, 2000; Fikes, Farquhar, & Pratt, 1996; Rose, 1999.

3. Promotion, Distribution and Market Intelligence through P2P

The music industry is a hyper-competitive 'chart business' (Jeffcutt & Pratt, 2002), in which the achievement and sustainability of competitive advantage depends on the volume and level of product success over a typically short time span. Music companies, have always faced the problem of dealing with a sophisticated and unforeseeable demand structure. While over 35.000 records are released every year solely in U.S.A.³, only few of them (about 10%) actually are able to gain some success and get profitable, or at least cover their costs (Burnett, 1996; Philips, 2001). The root of the problem lies in the nature of the product, which is a semi-public (Hesmondhalgh, 2006), archetypical experience good (Nelson, 1970), and the related consumption patterns; due to the high symbolic value which is embedded in music consumption, product evaluation strictly relies on individual and personal attributes.

Moreover, this implies that new music products (such as singles, albums, etc.) are to be made available to potential customers, as a way to experience the personal value, before purchase. Music publishing companies are therefore bound to use diffusion of content (by singles, videos, airplay, tours, etc.) as key strategy to promote an artist. While the effort to promote a music product is huge in terms of money (an average of 28% on total sales) and time being invested, and needs accurate planning to raise visibility and gain access to a overcrowded market, there is still no compelling relationship with actual sales (Aris & Bughin, 2005).

Adopting traditional marketing tools may be helpful only to some degree. Market research, for example, has proven to be unsuccessful to understand tastes and trends. The inability to effectively foresee and to influence the market trends constrains publishers to act in terms of risk differentiation, placing many products on the market, while counting on very few to succeed (Burnett, 1996).

In recent years the music industry also had to face the exponential growth of P2P filesharing systems; it was indeed a big shock to the market, not only due to the spread of illegally distributed music and subsequent emerging opportunity costs⁴, but also because of the radical change and the innovation P2P (and, more generally speaking, the Internet) brought in terms of technology, new consumption models and distribution and promotion channels. While industry players and scholars are still trying to understand to what extent filesharing is actually hurting the music market

3 Statement by Hilary Rosen CEO of the RIAA in 2000 in a RIAA press release on May 25, 2000.

4 IFPI (International Federation of the Phonographic Industry) claims that in 2005 1.2 billion CD copies have been illegally sold, producing losses for about 4.5 billion dollars and 20 billion songs have been illegally downloaded; the legal market of digital music download is estimated to be worth under 100 million songs (IFPI, 2006, "The Recording Industry Piracy Report", IFPI). Some scholars, though state that these figures should be casted with a critical eye (Gopal & Sanders, 1997; Kai-Lung & Ivan, 2003).

(see for example Oberholzer & Strumpf, 2004, Liebowitz, 2005, Peitz & Waelbroeck, 2006. Kai-Lung & Ivan, 2003), new marketing opportunities connected with P2P and its huge user base⁵ are to be exploited by music companies (Angwin, McBride, & Smith, 2006), related to sampling and promotion, distribution and market intelligence.

Sampling & Promotion

P2P may be used as a an additional sampling and promotional channel (Bhattacharjee et al., 2006; Krishnan, Montgomery, & Smith, 2004; Pucha, Roy, & Hu, 2006), similar, in some ways, to airplay. It still shows some peculiarities, though, beyond the fact that copyright infringement is implied. P2P filesharing systems do not depend on any central organization in charge of defining the content catalogue. The availability of a specific content mainly relies on the choice of people to upload it and to share it. This gives publishers very limited control over the channel, nor is the diffusion of musical tracks enriched by any kind of additional communication. The *contentkeeper* is relegated to a *passive* role waiting for the *contentseeker* to discover its content. Such pull-based means do not support active promotion of content as an integral part of content sharing, but still may help to raise awareness. At the same time, consumers have the chance to fully evaluate the quality of a music product before buying it. While this kind of transparency could be positively evaluated for market efficiency, it implies some change in the publisher's product development and promotion strategies.

Some recent cases show music companies trying to get more in control of P2P filesharing systems, leveraging the promotional value of this channel. Through the help of some specialized new business ventures (i.e. Jun Group⁶) songs and music videos are being released to P2P for sampling, under particular conditions. This is the case of a recent live concert by artist Jay-Z made at Radio City Music Hall. The artist found an agreement with Coca-Cola Co., thus allowing the distribution of his music by including promotions for Coke; adopting an approach similar to the spread of decoy files⁷, record labels and other marketers are developing a new advertising medium. Furthermore, Suretone Records, representing artists such as Drop Dead Gorgeous, Weezer and The Cure, is distributing tracks from its artists via popular file-sharing networks (DRM-free). Although the tracks and videos are free, they are incomplete. To listen to the full tracks people have to go to Suretone's website where a full, ad-supported version is available for listening, but not for download. Other artists like

5 According to BigChampagne figures, the number of simultaneous users of P2P filesharing systems was 9,67 mln in January 2006.

6 Jun Group is a company that has a unique use for illegal file swapping. Record labels authorize Jun Group to use the illegal downloading websites for promotional purposes.

7 As a way to fight piracy, music companies populate P2P filesharing networks with decoys files, which might be blank or carry warnings or other messages, through the help of specialized companies (i.e. Mediadefender).

Audioslave, Ice Cube, Yellowcard have uploaded extracts of a song into P2P networks with the promise that a stream of the entire song will be unlocked for everyone once the promotion is forwarded to enough people.

While these experiments still have to prove consistent success and need further development, sampling and promotion through P2P filesharing systems may represent an interesting opportunity for music companies.

Distribution

In recent years the music industry has mulled over the opportunity to exploit P2P filesharing networks to directly distribute music (Dubosson-Torbay, Pigneur, & Usunier, 2004; Koelman, 2003; Rupp & Estier, 2003). While P2P nowadays represents the potential of a huge audience, publishers are still suspicious about allying with P2P networks where paid (and probably DRM-locked) downloads could be offered alongside unauthorized copies of the same files. Therefore music companies put their effort in developing alternative “legal” P2P filesharing systems, either by acquiring existing ones and redefining them as legal marketplaces (think of BMG and Napster) or by supporting new business ventures by licensing their catalogue (i.e. Mashboxx). Evidences⁸ show that these initiatives still don’t show reasonable success. At the same time some third-party interdisciplinary organizations are working on the development of new content marketplaces based on P2P systems (i.e. dmin.it⁹).

Market intelligence

Filesharing may offer an interesting opportunity as a powerful tool to measure audience interest for songs and artists (Lawrence, 2004). File-swapping in P2P networks may represent a valuable source to better understand customer tastes and to track emerging trends. Traditional research techniques consisting of focus groups, phone surveys, and music tests, are often unable to capture the complexity of the market, due to the almost infinite possibilities of market segmentation in the industry and the difficulties of any form of market testing to grab niche phenomena.

The information embedded in P2P filesharing systems seems particularly valuable, if compared to traditional market research, because:

- a much wider audience is covered;

8 BMG partnered with Napster starting in 2001, without consistent success. In May 2002, Napster announced that its assets would be acquired by German media firm Bertelsmann for \$85 million. On September 3, 2002, an American bankruptcy judge blocked the sale to Bertelsmann and forced Napster to liquidate its assets according to Chapter 7 of the U.S. bankruptcy laws.

Mashboxx still hasn’t been released, while being announced in beta version in May 2005 and having partnered with EMI and Sony-BMG to resell their catalogue .

9 Digital Media in Italia (dmin.it), is an interdisciplinary, open, non-profit group, which aims at defining and proposing areas of intervention which will allow Italy to gain a leading role in the exploitation of the ‘digital media’ phenomenon.

- results can be considered quite unbiased, as there is no influence by a moderator;
- given a functional technological research infrastructure, information may be monitored constantly and systematically, instead of being occasionally measured through traditional research;
- the audience being measured is largely composed by younger people¹⁰, which represent an appealing target for music companies;
- while there's no possibility to associate consumption data with personal data, users IP may help to identify geographical location¹¹.

Music companies might use this data in conjunction with traditional chart analysis to more efficiently allocate resources for promotion, communication and for artist development and to identify potential successes before their tipping point¹². The data might also prove to be a great value for broadcasters in tailoring their programming.

In order to assess the possible role of P2P on the performance of the title in the legal market and to better understand the significance of this kind of information we selected 25 artists by identifying what titles performed a so-called "Hot-Shot Debut" entering the Billboard Hot 100 (which combines singles sales and airplay performance) at positions ranging from 1 to 33 from 2003 to 2007. We gathered data about the artists' releases (that is, airplay, single sales, digital single sales, album sales¹³) and upload data in P2P filesharing systems (the latter only in the weeks before the release of the new album). This information was provided by Big Champagne, an information broker specialized in monitoring titles on P2P filesharing systems. In order to explain the title performance in the market, we searched the artists' official websites, to look for events and announcements that might have affected interest in the title by consumers.

Figure 1 and Figure 2¹⁴ show two of the selected title's dynamics across different markets including main events related to the artist: the first one refers to the 5th and latest release by Weezer, an independent band, that gained a huge and rather

10 As shown by a Pew Internet Tracking Report (April 2001 – July 2003) cited by Peitz & Waelbroeck, 2004, "young adults (18-24) are more likely to have downloaded music from the internet than older adults".

11 While this is possible, it has to be noted, that errors might occur as IP is not always strictly related to the user's location. On larger user bases, though, this kind of problem might prove to be negligible.

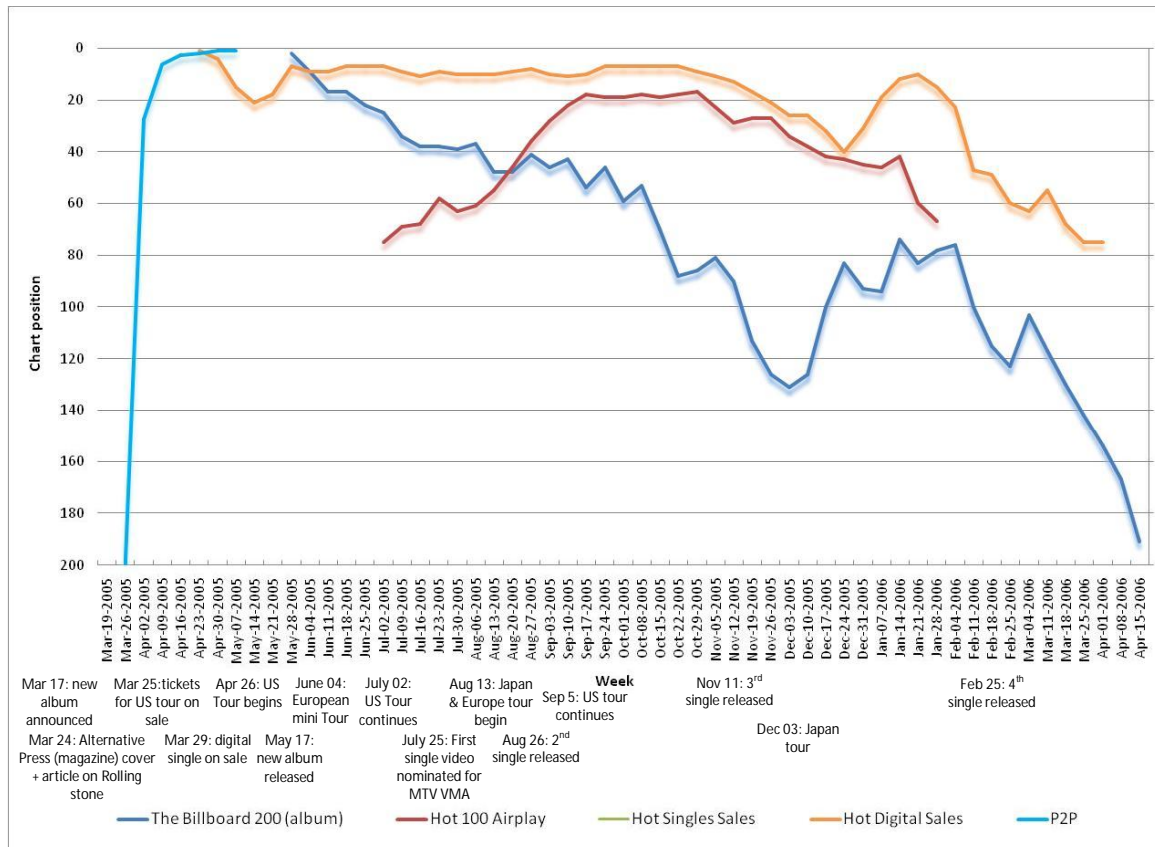
12 Think for example of songs and albums being leaked to P2P before being published. Measuring the dynamics of file-swapping on filesharing networks, might prove as a predictive tool.

13 The data was gathered from various Billboard charts (Billboard 200 for the album, Hot 100 Airplay, Hot Single Sales, Hot Digital Sales for the first single being released).

14 It has to be noted that P2P data represent actual uploads, while data on the billboard charts indicate relative positions. Nonetheless, the figure shows visually the relationship between channels and mirrors the seminal work on channels dynamics.

unexpected success. The second one shows the performance of the latest release by Madonna, an established pop-singer. It has to be noticed that in both cases the first single was leaked to P2P filesharing systems well before being released.

Figure 1 - Chart performance (P2P, Ariplay, Digital Singles, Album) of band "Weezer" related to the release of album "Make Believe"



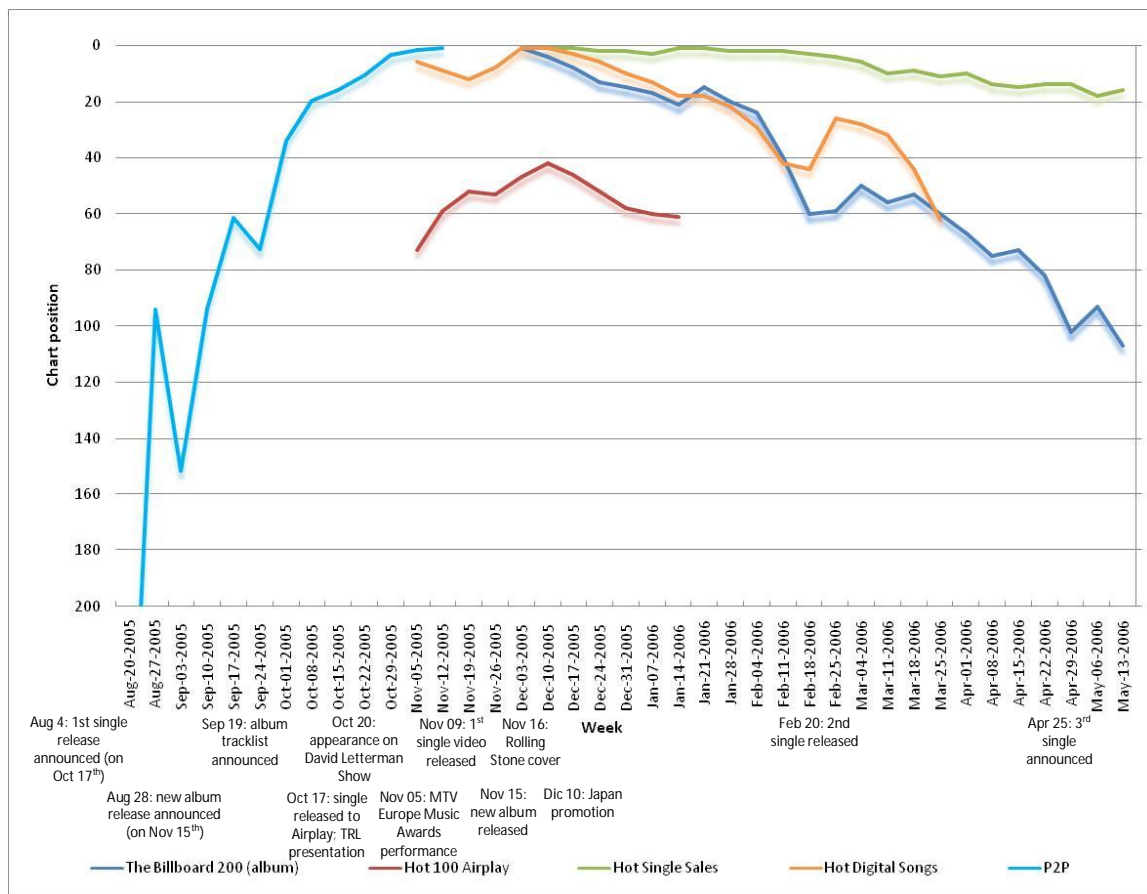
While these results seem to be quite appealing, there are a number caveats related to measuring traffic in P2P filesharing systems that have to be pointed out:

- There is still no consistent way in measuring what is actually being swapped by users (that is, downloads), but only which songs are shared by a user in a specific moment (that is, uploads). For example, users downloading files and not sharing them¹⁵ might not be included in the data. While further development in research techniques might help to solve this problem, this still can be considered a good proxy for fileswapping;

¹⁵ Based on Pew Internet Report data cited by Peitz & Waelbroeck, 2004 people downloading music files and not uploading them could represent about 28% on total P2P network users in USA.

- Content hosted on P2P filesharing systems doesn't match any requisites in terms of quality and, especially, naming convention¹⁶; this may affect data integrity and requires huge efforts refining research techniques;
- Price evaluation is not embodied in the data. If we think of the characteristics of music goods, this is still a minor differentiating element, though.

Figure 2 - Chart performance (P2P, Ariplay, Singles, Digital Singles, Album) of artist "Madonna" related to the release of album "Confessions on the Dancefloor"



All these contributions suggest that the legal and illegal music industries are influencing each other and that the illegal industry is actually structuring itself in a way instrumental to its incorporation in the mainstream. Actors that under the current legislation are part of the pirating scene – i.e. people developing file-sharing protocols (Bittorrent, Emule, etc.) or software (eMule, Kazaa, BitComet, etc.) – could prove to be instrumental to traditional players. Furthermore new specialized players are growing

16 For example one song may be uploaded to filesharing systems with different labels (for example as a combination of song name, artist name, album name, track number, etc.) or incorrect tags (i.e. misspelling)

out of the relevant opportunities engendered by filesharing systems. As we will see, these innovative business models are built on the capability to create value and success out of information embedded in P2P networks.

4. Doing business with P2P market intelligence: the case of BigChampagne¹⁷

Beginning in year 2000, some business ventures understood the potential underlying the information embedded in filesharing systems. This gave birth to a set of new companies (among them, Webspins, PeerMind and Big Champagne) who focused on developing research techniques and information collecting infrastructures for P2P networks. Few of them, actually, managed to gain consistent and durable success.

Being one of them, Big Champagne has now established itself as a profitable key information intermediary and business intelligence company managing P2P information¹⁸. While the original purpose was (and still is today) to gather data to be used by collecting societies in the outlook of collective licenses to be applied in P2P filesharing systems, the offering quickly shifted to market intelligence services. The actual customer base includes content owners (i.e. Sony-Bmg, EMI), broadcasters (Radio One, CBS, and others), advertising companies and also artists and managers. BigChampagne constantly measures activity on P2P networks using proprietary systems that gather information about file sharing and searches, which is integrated with customers information about digital, terrestrial, and satellite radio airplay by format, market and station, as well as music television programming data (made possible through various partnerships, such as with Mediabase). While collecting and synthesizing data from a variety of sources online and offline is the necessary condition to intermediate information, the added value offered by BigChampagne lies in assisting customers in understanding the data, and in identifying and in reasoning the subtle relationships between marketing impressions and response from the marketplace.

In contrast to other P2P information tracking companies aimed at fighting piracy which actually manage similar kinds of data, BigChampagne does not retain or report any identifying information about individual users.

Key to the growth of the company have been some strategic partnerships (most

17 The facts illustrated in this paragraph are based on various interviews conducted to BigChampagne's management and on information gathered about the company. The case of BigChampagne has already been cited by some scholars (i.e. Blomqvist, Eriksson, Findahl, Selg, & Wallis, 2006; Netanel, 2003; Peitz & Waelbroeck, 2004). Part of the statements (including details on financial data), are not being disclosed.

18 P2P networks being measured, include, for example, Napster, Kazaa and Gnutella.

notably, Nielsen Soundscan) that helped to legitimate and acknowledge the methodology. For example, media giant Clear Channel and BigChampagne have decided to work together. Given the fact that Clear Channel operates about 1,200 radio stations across the country along with 5,000 stations in their Premiere Radio Network, this agreement is an example of confidence being put in the strength of the technology. BigChampagne's syndication partners include Billboard Radio Monitor, Entertainment Weekly, and Digital Music News. Music companies, which formerly were worried to get in contact with BigChampagne while fighting court battles against file-sharing systems, are now a stable part of the customer base.

The data provides three key values to content providers, most notably:

- Predictiveness¹⁹: information about music uploads is used by music companies to understand how a certain artist or song is going to perform. This might apply especially when a file is leaked to P2P before being released;
- Reactiveness: P2P information is used to measure how the public is reacting to the release of tracks through various channels (radio, physical stores, digital stores, etc.), to promotional activities and to events that might have impact on an artist's popularity;
- Customer and artists profiling: the search engine monitors the whole collection of files which are shared by a user in a given moment. On the one hand this helps to profile customers by the different artists they are uploading and on the other hand to learn more about an artist's positioning by monitoring which other artists they are associated with.

If we add the possibility to analyze the data on a geographical basis, the data provided by BigChampagne offer to content owners a strong support to overcome the complexity of the music market and to efficiently and strategically allocate resources for artist development and promotion. For instance, it may help to identify high potential new acts which have already gained a consistent fan-base through word-of-mouth on which to focus promotional efforts to leverage growth, or to select the most effective promotional channels for an established artist. As stated by an industry representative, P2P data, used in conjunction with traditional market analysis (especially charts), is key to not underpromote and not to overpromote an artist.

Broadcasters (especially traditional radios and webradios networks) are known to use this data to effectively tailor their programming. In the words of BigChampagne's management it pretty works in a manner like financial trading:

19 As stated by Peitz & Waelbroeck, 2004 by comparing P2P download charts and singles chart in UK in September 2004, there might still be some differences between P2P artist performance and sales due to the fact that "the variety offered on music download charts targets different consumers than those who purchase singles. [...]However, in a world in which most people buy their songs online the difference can be expected to fade away."

broadcasters are advised to “buy” (include), “hold” (maintain) or “sell” (exclude), tracks in their programming.

BigChampagne has a mixed revenue structure, depending on customer type. Content owners have access to the database on a subscription basis. The fee might vary depending on the number of users having access and the depth of the data (for example number of songs, albums, artists, time coverage)²⁰. Broadcasters’s fee is success-based, as it is paid with relation to of the value of commercial minutes in airplay.²¹

BigChampagne has a high-competence and a technology-driven business model. Thus, costs are mainly related to technology investments amortization and high-profile human resources, with an average engineer to manager ratio of 10:1 and about 20 people employed. Competencies and experience are key when it comes to test data by accurately identifying and classifying titles or to develop compelling interpretations of the figures.

Investments are mainly directed to research & development. A strong effort is put in developing better research technology and techniques, especially focusing on quick data processing and preserving data integrity. Embracing a zero-touch product philosophy, it is fundamental to maintain an easy and comfortable user interface.

Recent developments are focused on analyzing additional P2P filesharing networks (such as Bittorrent) and monitoring other media and content swapping, such as television shows, movies, games, thus seeking to expand the customer base.

5. Legal battles against file-sharing. From ‘secondary’ to ‘direct’ infringement

Every act of copy and distribution of protected works affects the reproduction and communication rights of the author, and in case also other neighbouring rights such as those of performer, producer, and publisher. Therefore, when a work is copied and/or disseminated without the consent of its right holder(s), there is direct infringement of copyright.

Such cardinal rule of copyright law is tempered by a regime of limitations or exceptions which vary from one legislation to another, but that must fulfil the requirement stated in the art. 9(2) of the Berne Convention and adopted in the main

20 According to a Wired Magazine article published in October 2003, a company might pay \$7,500 to track one album or might sign up for an annual deal of up to \$40,000 to have access to the entire BigChampagne database (<http://www.wired.com/wired/archive/11.10/fileshare.html>; last accessed 03/07/2007). These fees might have changed over the time.

21 BigChampagne established a partnership with Premiere Radio which resells the companies’ services to other radio stations getting advertising in return.

international treaties (TRIPs agreement, WIPO Copyright and Performance & Phonograms treaties) and regional laws (EU Directive 29/2001 on Information Society, art. 5-5), namely, the so called 'Berne's three-step test'. In its narrow TRIPs' formulation, this requirement reads: "Member shall confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with the normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder" (TRIPs agreement, art. 13).

Given this framework, legal actions against copyright infringement is a relevant part of the strategy of the cultural industries to limit the impact of private copying technologies²². Since, however, prosecution of individual acts of infringement is difficult and costly, industries have first addressed their efforts against producers of copying and distributing devices²³. Therefore, when peer-to-peer platforms became available, claims were brought against software suppliers, file-sharing website and, to a lesser extent, Internet software providers, that is, players not directly chargeable with breach of copyright, although to some extent jointly liable for infringements occurring using their services²⁴.

22 Other ingredients of this overall strategy are contractual regimes (e.g. limitations of practices imposed by licensing contracts) and, in the digital environment, technological protection measures (such as DRM systems).

23 The leading case involving copying for private use is the US Supreme Court's decision in the 1984 'Betamax' case. In the mid 70s the Japanese Sony launched the Betamax video tape recorder on the US market. Its market strategy was centred on the capacity of 'time shifting', that is of recording a broadcast while watching another program on a different channel – "*Now you don't have to miss Kojak because you're watching Colombo (or vice versa)*". 'Kojak' and 'Colombo' were two of Universal's most popular shows. In 1976 Universal and Walt Disney Productions, on behalf of the Hollywood majors, charged that the ability of the Betamax to copy programming off air was an infringement of copyright and sought to stop the sale of the machines. The case was filed before the Federal District Court of Los Angeles in November 1976, and went finally to the Supreme Court in 1984. The Supreme Court, reversing the Appeals, rejected the claim of the film industries, establishing a general test for determining whether a copying device complies with copyright law: "the sale of copying equipment [...] does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes, or, indeed, is merely capable of substantial noninfringing uses." (*Sony Corp. of America v. Universal City Studios, Inc.*, 464 US 417). Moreover, it established that the making of individual copies of complete television shows for purposes of time-shifting is fair use (Litman, 2006). In the late 90s, the Recording Industries Association of America (RIAA) sued the producer of 'Rio', the first MP3 player, alleging that the device breached the reproduction right under the 1992 Audio Home Recording Act. The Ninth Circuit rejected the claim, providing a narrow definition of 'copy': "the Rio appears not to make copies from digital file recordings, and thus would not be a digital audio recording device under the Act's basic definition unless it makes copies for transmission" (*Recording Indus. Ass'n of Am v. Diamond Multimedia Sys.* 180 F.3d 1072, 1076 (9th Cir. 1999)).

24 In the landmark decision of US Court of Appeals in the 'Napster case' (*A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001)), the software company was held liable for "contributory infringement" of copyright. The case was partially settled at the end of 2001: Napster agreed to pay copyright owners USD 26 million for past, unauthorized uses of music, as well as an advance against future licensing royalties of USD10 million. Napster's brand was eventually acquired at bankruptcy auction by Royo Inc., which used it to set up a legal download service. Similar claims were

Yet, in the last few years, legal actions against individual internet users have significantly increased. This is the signal of a change in the strategy pursued globally by major record industries.

In June 2003 the Recording Industries Association of America (RIAA) announced that it would start legal actions against individuals sharing files on peer-to-peer networks. Two years later the association had engaged up to 9.000 actions. In April 2005 the CEO of the IFPI, the London based organisation representing the recording industry worldwide, announced "the biggest single wave of legal actions internationally, involving over 950 individuals in 11 countries", targeting "major uploaders of music", with the aim of "deter[ring] people who are, or who would become, illegal file sharers", and of "change[ing] consumer attitudes in favour of downloading the legal music"²⁵. According to a following press release, legal actions broke down more than 3.600 uploaders in 9 EU countries (2.000 of which in Germany), and about 20.000 in the US²⁶. One year later, a "fresh wave of actions against illegal file-sharing" has been announced, with "over 8.000 new cases in 17 countries": "In each of the 17 countries involved in today's actions – maintained the CEO – there are legal music services available to consumers. There is no excuse. People should understand that they can be caught whatever network they are using"²⁷.

As to the 'deterrent effect' of these waves of lawsuits, there is no unequivocal evidence. According to a survey published in January 2004 by the Pew Internet and American Life Project, the percentage of Americans downloading music files on the Internet has dropped by half since the RIAA began filing suits against individuals suspected of copyright infringement (Rainie, 2004). A study conducted by Bhattacharjee et al. in 2003 and published in 2007, which tracks the sharing behaviour of about 2.000 users of Kazaa before and after four RIAA announcements concerning lawsuits, indicates a "mixed success for the RIAA's strategy": on the one hand, most of users significantly decreased the number of file shared and reduced sharing activity; on the other hand, though, the overall availability of music files on the network was not substantially affected (Bhattacharjee, Gopal, Lertwachara, Marsden, & Telang, 2007). A survey conducted in 2006 by Harris Interactive and commissioned by the American Business Software Alliance (BSA) states that the amount of downloading without paying among youth has dropped significantly since 2004, although the fear of getting sued or of paying fines does not stand out as significant ground for non downloading

brought against suppliers of so-called 'second generation' peer-to-peer software, Grokster and Streamcast (maker of Morpheus). In 2005 the US Supreme court ruled against software suppliers, who were held liable for "inducing copyright infringement", thus leading to shutdown of file-sharing websites on November 2005 (*MGM Studios, Inc. v. Grokster, Ltd.* 545 US 913 (2005)). For a story of lawsuits against peer-to-peer software suppliers see Renda 2005 and Bernault and Lebois 2005.

25 IFPI Press release, 12 October 2005 <http://www.ifpi.org/content/section_news/20050412q.html>

26 IFPI Press release, 15 November 2005 <http://www.ifpi.org/content/section_news/20051115h.html>

27 IFPI Press release, 17 October 2006 <http://www.ifpi.org/content/section_news/20061017.html>

(most important factors are “don’t want to get a virus” and “don’t want to get in trouble with parents”) (BSA 2006).

On the other hand, a study conducted with a different measurement methodology, tracing peer-to-peer traffic under different protocols, come to the result that peer-to-peer file sharing is not decreased after 2003 and has instead still increased (Karagiannis, Broido, Brownlee, Claffy, & Faloutsos, 2004).

Still, beyond the measurement of the effects, a more general question remains as to this strategy can be pursued without incurring in disrupting consequences. Litigations are costly, and a permanent state of war against potential customers may lead to growing disaffection and other unintended externalities.

6. Doing business with anti-piracy: the case of Logistep

Besides well-publicized lawsuits, sponsored by major US led agencies and aimed at pursuing overall deterrent effects, a new kind of legal actions is lately emerging. Claimants are no longer major industries or its representative, but small or medium-size companies (record labels, film producers and video-game publishers). Their goal is not to fight against ‘piracy’ as such, but to maximise their own return in targeted actions against end-users. Legal actions are thereby taken far from the glare of publicity aiming at realising immediate return. Such lawsuits rarely bring to trials and usually turn in pre-action conducts whereby out-of-court settlement are managed.

In this context, new intermediaries emerge supplying, on the one hand, technical solutions to trace specific infringing behaviours on peer-to-peer networks, and, on the other hand, legal consultancy to pursue actions against alleged infringes. This kind of actions have been repeatedly undertaken in Germany since 2005, yet have lately gained ground also in other EU countries. Most of the intermediaries are companies operating in Germany although located in Switzerland to benefit from non-EU legislation, sometimes born in strict connection with record companies or law firms. Methods are similar to those adopted by so-called ‘patent trolls’, aiming at cashing up quickly relying on legal quibbles and on people’s fear of burdensome legal consequences.

CopyRight Solutions GmbH is a Swiss-based company acting through the German legal firm Karl, Urmann & Wagner of Regensburg. It has identified hundreds of users illegally sharing various copyrighted works belonging to the computer games company KochMedia and to producers of ‘blue movies’ like Purzel Video and Magmafilm. The latter category is also the ‘core’ business of DigiProtect of Frankfurt am Main, whose president is also member of the board of directors of its other customer, the record label 3P. Other companies, like ProMedia, pursues instead big sharers and for-profit criminal piracy (both digital and physical) on behalf of Gvu, a

coalition of majors of entertainment and video games²⁸.

Yet the most successful intermediary is probably Logistep AG, a company based in Zürich, Switzerland, which provides 'anti-piracy solutions' for peer-to-peer file sharing. The main asset of the company is a method based on a software called 'File Sharing Monitor 1.3.1'²⁹, capable of detecting computers connected with peer-to-peer networks that are downloading and uploading files. In short, the 'monitor' program accedes the peer-to-peer network akin a normal user and submits inquiry to the servers of the network as to a particular file is available; on receipt of a positive response from the peer-to-peer system, the monitor program downloads the file from all available hosts and verifies the data; finally, information data on the located hosts are stored in a database which include username, time of finding host, name of the client program and of the communication protocol used, and client identification GUID, on the basis of which the IP address can be deduced. The system then looks up the IP address in a publicly accessible IP addresses database, in order to come to know the Internet service provider (ISP) the address is registered with. Once collected these evidences, a legal action is brought against 'unknown persons' in order to ask the judge to order the ISP to reveal the identity of the alleged infringes. Finally, the law firm partner of Logistep offer alleged copyright infringes the opportunity to agree to cease-and-desist letters, while paying a 'like it or lump it' sum.

The Logistep method has been so far successfully employed in Germany since 2005 on behalf of video game companies Zuxxez, Eidos, Achtermann, CDV and Techland, and of the record label Peppermint Jam. This latter has then launched in 2006 analogous campaign in Italy.

The Italian case is a typical example of how this company operates. After having collected data of internet users illegally sharing their musical files on the Italian territory, Peppermint filed two different claims before civil court, obtaining injunction against ISPs to disclose personal data corresponding to the listed IP addresses³⁰. At the end of April 2007, 3.636 Italian internet users received a letter from Logistep-Peppermint's attorneys submitting a proposal of compromise agreement, charging 330,00 Euro as "partial compensation for damage" against claimant's commitment to not take criminal proceedings. The proposal was valid if signed and returned within one month.

Similar action has been successfully undertaken on behalf of video-game producers in France (Techland) and in the the United Kingdom (Topware Interactive, the British branch of the German publisher Zuxxez). On February 1st and on March 15 2007 the High court of UK ordered 18 ISP to disclose to Topware's solicitors name,

28 See <<http://www.abmahnwahn.dreipage.de>> (last visited 20 June 2007)

29 Patent pending before the EU Patent Office, application n. DE102005025074

30 Tribunale di Roma, sez. IX civile, ord. 19.08.2006 R.G. 44820/2006 and 09.02.2007.

address and telephone number of 155 scheduled users, for the alleged swapping of a sole video game called 'Dream Pinball 3D'³¹.

These actions do presumably bring a fair return and do not lead to a trial. According to a German website dealing with these lawsuits about 50 percent of addressees pays the proposed fee and only 10 cases (out of 20.000 letters) are known for certain to have been eventually sued³². If that is the case, the Italian legal action could have returned, as "partial compensation of the damage", about 600.000 Euro in less than one year – which in this day and age it is not a trivial sum for a medium-size record label.

The method employed by Logistep to collect evidences has given rise to some doubts, either about its technical reliability and its compliance with the law. As a matter of fact, IP addresses are considered personal data under the EU Directives on the protection of personal data (95/46/EC, art. 2-a) and the protection of privacy in the telecommunications sector (97/66/EC, art. 11-1), and their treatment without person's consent is subject to precise restrictions. It is therefore uncertain whether evidences collected by treating illegally personal data, although for the purpose of defending enforceable rights, could be considered receivable during judgement (see Blengino & Senor, 2007), and so far methods of collecting evidences through monitoring software have never been challenged before a court.

7. The bridging role of information brokers

The boundaries between legal and illegal industries are fading, not just as a consequence of the actual behaviour of consumers and the difficulties in enforcing current legislation, but as a consequence of the emergence of actors able to bridge the structured legal industries with the progressively structured illegal content distribution on peer-to-peer platforms. The two cases we have described in the previous paragraphs are examples of new business models leveraging on the shaky borders between legal and illegal music consumption. While they share the limitations associated with case studies and have very different scope and mission, they both are bridging legal and illegal markets through the organization of information about music content, rather than music content in itself.

More specifically, the Big Champagne case suggests that the dynamics of the illegal file sharing are instrumental to predict, understand and control the dynamics of the legal industries as far as customer behaviour is concerned. This is particularly true with respect of new products. Information brokers are able to package and organize

31 High Court of Justice I/A no. 1, 2007. See also Tribunal de Grande Instance de Paris, 22 Janvier 2007 (Techland).

32 See <<http://www.abmahnwahn.dreipage.de>> (last visited 20 June 2007)

information on customers' behaviour in the illegal markets that significantly affect how legal industries are shaped and function.

On the other hand, the Logistep case is an example of how the legal industry can opportunistically take advantage of the wealth of information provided by illegal consumption of music, transforming a market failure into an opportunity of collecting money.

Both business models are not sustainable yet, in the sense that they are not yet acknowledged by all actors involved in music creation and distribution. However the potential value creation associated with the interplay between the legal and the illegal markets, and the potential loss of value creation associated with a merely repressive action against file sharing eventually turning into a new 'Hundred Year's War', may persuade music industry players to explore different solutions.

Perhaps the only affordable solution is not before us, but behind. As it has been previously pointed out in paragraph 2, prior to the advent of digital technologies the response of legislators to the emerging of new copying and distributing practices made possible by technological shifts has been that of partially converting exclusive rights into more flexible 'remuneration right', thus keeping the use of new technologies within the boundaries of the law without impairing rewards for copyright holders. While exclusive rights are directly and individually licensed by copyright holders, remuneration right is managed collectively by appointed collecting societies. In recent years many proposals have been put forward in order to find similar arrangements for peer-to-peer file sharing.

In a seminal article by N. Netanel, the way of "allowing untrammelled non-commercial P2P file swapping in return for imposing a levy on P2P-related services and products" has been deeply explored (Netanel, 2003). The mechanism represents the core of the proposal detailed by W. Fisher in his book *Promises to Keep* (Fisher, 2004, chapter 6).

Bernault and Lebois have drafted a similar solution as regards to the French legislation, suggesting to distinguish the act of downloading with the act of making available to the public (i.e. 'uploading'): while the first can be considered, as such, as an act of private copying, thus generally subject to the private copy exception³³, the second can give rise to a compulsory collective management system, administered by collecting societies imposing a levy on ISPs. In this view, peer-to-peer file sharing is considered analogous to reprography, which is in fact subject to the twofold regime of private copy exception and compulsory collective management (Lebois & Bernault, 2004).

A slightly different approach has inspired the 'White Paper' of Electronic

33 According to the authors, this exception would comply with the Berne's 'three step test' discussed *supra* in paragraph 2

Frontier Foundation (EFF), where instead of a system relying on levies and compulsory licensing, a proposal of 'voluntary' collective licensing is drafted. This solution is modelled on the mechanism of radio broadcast, where radio stations obtain licenses for broadcasting music through collecting societies, which in turn allocate royalties between writers and publishers. The same concept can be applied to peer-to-peer, where individual file sharers would pay a lump sum in exchange from the right to upload and download music freely. (EFF, 2004).

These solutions rise several issues as to their economic sustainability and to their compatibility with current copyright framework (Dougherty, 2006, Ricolfi, 2006). Just to mention a point, collective rights management has been so far applied in a context where there was an essential distinction between 'primary' and 'secondary' uses: as a matter of fact collective management applies to uses of the work that are subsequent to its first commercialisation, which is subject to individual licensing; it applies therefore to public performances in theatres, dancing halls, bars, or to broadcast through radio and television, that is uses presupposing that the work has been previously marketed by licensing reproduction and distribution rights to intermediaries. In the digital environment, though, the distinction between first market sale and secondary uses is deemed to fall, since every act of reproducing is identical to the first one. Thus, converting the exclusive right of reproduction into a mere 'remuneration right' would eventually alter the essential nature of copyright (Ricolfi, 2006). Moreover, the collective management of rights strictly depends on the primary use, since the resources collected in the secondary market – both by licensing rights to radio stations and by imposing levies on commercial businesses and taxes on blank CDs and storage mediums – are redistributed proportionally to the sales in the first market (Ricolfi, 2006).

Yet a most relevant issue is perhaps to understand *on what conditions* can these difficulties be overcome. With its 100 millions of users around the world, the peer-to-peer file sharing represents an unprecedented phenomenon of illegal distribution, which can be integrated into a legal framework only on the grounds of a far-reaching 'social contract'. On the one hand, end-users would join a voluntary collecting system only as far as their current 'leech for free' system is perceived as unsustainable (either because 'immoral' or because leading to unpleasant consequences such as lawsuits); on the other hand, copyright holders would opt-in only insofar as the de-centralized distribution through individual file sharing can be adequately monitored.

Given this setting, it is believable that the organization and management of information associated to content will have a strategic role in defining the future industry scenario. Information brokers, now establishing themselves as emerging actors, will play an increasingly significant part.

References

- Anand, N., & Peterson, R. A. (2000); "When Market Information Constitutes Fields: Sensemaking of Markets in the Commercial Music Industry", *Organization Science*, 11(3), 270-284.
- Anderson, C. (2006); *The Long Tail*, New York, Hyperion.
- Angwin, J., McBride, S., & Smith, E., (2006, October 18); "Record Labels Turn Piracy Into a Marketing Opportunity", *Wall Street Journal*.
- Ariely, D. (2000); "Controlling the Information Flow: Effects on Consumers' Decision Making and Preferences", *Journal of Consumer Research*, 27 233-248.
- Aris, A., & Bughin, J. (2005); *Managing Media Companies. Harnessing Creative Value*, Chichester: John Wiley & Sons, 2005.
- Bhattacharjee, S., Gopal, R., Lertwachara, K., & Marsden, J. R. (2006); "Whatever Happened to Payola? An Empirical Analysis of Online Music Sharing", *Decision Support Systems*, 42, 104-120.
- Bhattacharjee, S., Gopal, R. D., Lertwachara, K., Marsden, J. R., & Telang, R. (2007); "The Effect of Digital Sharing Technologies on Music Markets: A Survival Analysis of Albums on Ranking Charts", *forthcoming in Management Science*
- Blengino, C., & Senior, M. A. (2007); Caso Peppermint: file sharing e utilizzo di dati personali illecitamente trattati. Tribunale di Roma, sez. IX civile, ordinanza 09.02.2007, from <http://www.altalex.com/index.php?idnot=2541>
- Blomqvist, U., Eriksson, L.-E., Findahl, O., Selg, H., & Wallis, R. (2006); *Broadband technologies transforming business models and challenging regulatory frameworks – lessons from the music industry. Report on technology versus usage and effects.*, *The MusicLessons Project*, Report, European Commission, IST programme FP6.
- Boorstin, E. (2004); *Music Sales in the Age of File Sharing*, Senior thesis, Princeton University.
- Burnett, R. (1996); *The Global Jukebox: The International Music Industry*, New York: Routledge, 1996.
- Clark, J. A., & Tsiaparas, A. (2002); "Bandwidth-on-Demand Networks — a Solution to Peer-to-Peer File Sharing", *BT Technology Journal*, 20(1).
- Conner, K., & Rumelt, R. (1991); "Software Piracy: An Analysis of Protection Strategies." *Management Science*, 37, 125-139.
- Craig, P., Burnett, M., & Honick, R. (2005); *Software Piracy Exposed*: Syngress Publishing, 2005.
- D'Astous, A., Colbert, F., & Montpetit, D. (2005); "Music Piracy on the Web – How Effective Are Anti-Piracy Arguments? Evidence from the Theory of Planned Behaviour", *Journal of Consumer Policy*, 28, 289-310.
- Dong, Y., Li, M., Chen, M., & Zheng, S. (2002); "Research on intellectual Property Right Problems of Peer-to-Peer Networks", *The Electronic Library*, 20, 143-150.
- Dougherty, M. (2006); "Voluntary Collective Licensing: The Solution to the Music Industry's File Sharing Crisis", *Journal of Intellectual Property Law*, 405.

- Dubosson-Torbay, M., Pigneur, Y., & Usunier, J.-C. (2004); *Business Models for Music Distribution after the P2P Revolution*, Working Paper, University of Lausanne.
- EFF (2004); A Better Way Forward: Voluntary Collective Licensing of Music File Sharing. 'Let the Music Play' White Paper, from http://www.eff.org/share/collective_lic_wp.php
- Eschenfelder, K. R., Howard, R. G., & Desai, A. C. (2005); "Who Posts DeCSS and Why?: A Content Analysis of Web Sites Posting DVD Circumvention Software", *Journal of the American Society for Information Science and Technology*, 56(13), 1405-1418.
- Felten, E. (2003); "A Skeptical View of DRM and Fair Use", *Communications of the ACM*, 46(4), 56-59.
- Fikes, R., Farquhar, A., & Pratt, W. (1996); *Information Brokers: Gathering Information from Heterogeneous Information Sources*, Working Paper, Knowledge System Laboratory, Stanford University.
- Fisher, W. W. (2004); *Promises to Keep, Technology, Law, and the Future of Entertainment*: Stanford University Press, 2004.
- Gandal, N., Kende, M., & Rob, R. (2000); "The Dynamics of Technological Adoption in Hardware/Software Systems: The Case of Compact Disc Players", *RAND Journal of Economics Letters*, 31(1), 43-61.
- Gantz, J., & Rochester, J. B. (2004); *Pirates of the Digital Millennium: How The War over Intellectual Property is Destroying Companies, Economies, and Personal Freedoms*, Upper Saddle River: Financial Times Prentice Hall, 2004.
- Goldstein, P. (2001). *International Copyright: Principles, Law, and Practice*. New York: Oxford University Press.
- Goode, S., & Cruise, S. (2006); "What Motivates Software Crackers?" *Journal of Business Ethics*, 65, 173-201.
- Gopal, R., & Sanders, G. L. (1997); "Preventive and Deterrent Controls for Software Piracy", *Journal of Management Information Systems*, 13(4), 29-47.
- Hesmondhalgh, D. (2006); *Media Production*, Maidenhead: Open University Press, 2006.
- Jeffcutt, P., & Pratt, A. C. (2002); "Managing creativity in the cultural industries", *Journal of Creativity and Innovation*, 11, 225-233.
- Kai-Lung, H., & Ivan, P. (2003); "Piracy and the Legitimate Demand for Recorded Music", *Contributions to Economic Analysis & Policy*, 2(1).
- Karaca-Mandic, P. (2003); *Network Effects in Technology Adoption: The Case of DVD Players*, Working Paper, Berkeley, Department of Economics, University of California.
- Karagiannis, T., Broido, A., Brownlee, N., Claffy, K. C., & Faloutsos, M. (2004); *Is P2P dying or just hiding?*, Working Paper, University of California at Riverside.
- Koelman, K. J. (2003); "P2P Music Distribution: a Burden or a Blessing?", *IVIR – BUMA/STEMRA Conference "Copyright and the Music Industry: Digital Dilemmas"*, Amsterdam.
- Krishnan, R., Montgomery, A., & Smith, M. D. (2004); *The Promotional Value of Peer-to-Peer Networks*, Carnegie Mellon University.

- Kwong, K. K., Yau, O. H. M., Lee, J. S. Y., Sin, L. Y. M., & Tse, A. C. B. (2003); "The Effects of Attitudinal and Demographic Factors on Intention to Buy Pirated CDs: The Case of Chinese Consumers", *Journal of Business Ethics*, 47, 223-235.
- Lawrence, A. (2004); "Market Research in the Internet Age: How Record Companies Will Profit From Illegal File-Sharing ", *MEIEA Journal*, 4(1), 29-40.
- Lebois, A., & Bernault, C. (2004); *Peer-to-Peer et propriété littéraire et artistique. Etude de faisabilité sur un système de compensation pour la distribution des œuvres sur internet*, Working Paper, l'IRDP de l'Université de Nantes.
- Lessig, L. (2004); *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*, New York: Penguin Press, 2004.
- Liebowitz, S. (2005); *Pitfalls in Measuring the Impact of File-Sharing*.
- Lipinski, T. (2003); "The Myth of Technological Neutrality in Copyright and the Rights of Institutional Users: Recent Legal Challenges to the Information Organization as Mediator and the Impact of the DMCA, WIPO, and TEACH", *Journal of the American Society for Information Science and Technology*, 54(9), 824-835.
- Litman, J. (2001); *Digital Copyright*, Amherst, NY: Prometheus Books, 2001.
- Nascimento, F., & Vanhonacker, W. R. (1988); "Optimal Strategic Pricing of Reproducible Consumer Products", *Management Science*, 34(8), 921-937.
- Neal, J. (2002); "Copyright Is Dead, Long Live Copyright: American Librarians Must Be Concerned over Threats to User's Traditional Rights", *American Libraries*, 33(11), 48-51.
- Nelson, P. (1970); "Information and consumer behavior." *The Journal of Political Economy*, 78(2), 311-329.
- Netanel, N. W. (2003); "Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing", *Harvard Journal of Law and Technology*, 1.
- Oberholzer, F., & Strumpf, K. (2004); *The Effect of File sharing on Record Sales: An Empirical Analysis*, Working Paper, Chapel Hill, University of North Carolina.
- Peitz, M., & Waelbroeck, P. (2004); *An Economist's Guide to Digital Music, Governance and the Efficiency of Economic Systems*, 32, Discussion Paper.
- Peitz, M., & Waelbroeck, P. (2006); "Why the Music Industry May Gain from Free Downloading — The Role of Sampling", *International Journal of Industrial Organization*, 24, 907-913.
- Philips, C., (2001, May 31); "Record Label Chorus: High Risk, Low Margin", *Los Angeles Times*.
- Prasad, R. (2006); "Piracy over Peer-to-Peer Based on Personal Network", *Wireless Personal Communications*, 37, 221-231.
- Pucha, H., Roy, S., & Hu, Y. C. (2006). "Take One Get One Free": Leveraging P2P Networks for Content Promotion, *9th IEEE INFOCOM Global Internet Symposium*: Purdue University.
- Rainie, L. (2004); *Pew Internet Report 2004*.
- Ricolfi, M. (2006); "Gestione Collettiva e Gestione Individuale in Ambiente Digitale", In M. Borghi & M. L. Montagnani (Eds.), *Proprietà digitale: Diritti d'autore, nuove tecnologie e Digital Rights Management* (pp. 183-222), Milan, Egea.
- Rose, F. (1999); *The Economics, Concept, and Design of Information Intermediaries: A Theoretic Approach*, Heidelberg: Physica, 1999.

- Ruegger, D., & King, E. W. (1992); "A Study of Effect of Age and Gender upon Student Business Ethics", *Journal of Business Ethics*, 11(3), 179-186.
- Rupp, P., & Estier, T. (2003); *A Model for a Better Understanding of the Digital Distribution of Music in a Peer-to-Peer Environment* Paper presented at the 36th International Conference on System Sciences, Hawaii.
- Shapiro, C. (1988); *Economic Effects of Home Copying*, mimeo, Princeton University.
- Shy, O., & Thisse, J. (1999); "A Strategic Approach to Software Protection", *Journal of Economics and Management Strategy*, 8, 163-190.
- Sims, R. R., Cheng, H. K., & Teegen, H. (1996); "Toward a Profile of Student Software Pirates", *Journal of Business Ethics*, 15(8), 239-849.
- Takeyama, L. (1994); "The Welfare Implications of Unauthorized Reproduction of Intellectual Property in the Presence of Network Externalities", *Journal of Industrial Economics*, 62, 155-166.
- Vaidhyathan, S. (2001); *Copyrights and Copywrongs*, New York: New York University Press, 2001.
- Zhang, M. X. (2002); *Peer-to-Peer and the Socially Optimal Distribution of Music*, Working Paper, Sloan School of Management, MIT.