Information Will Be Free

Farid Molazem Tabrizi

October 2008

Abstract

Since the popularity of internet and new communication technologies, the issue of information sharing has become a matter of debate. In digital world, distances are meaningless and Information could be transferred to different parts of the world in few seconds. In this paper we discuss the effect of new technologies on licensed information and copyright law. We take this position that in modern age, the technology has created mechanisms that could be, and is, used in order to share information for free. Copyright law cannot cope with digital environment and efforts to enforce it in digital domains have failed. Theoretically, it is possible to share every kind of file and data through p2p networks and copyright law is not able to stop increasing popularity of such networks. In this situation, where law enforcements are not enough to protect licensed information, taking other actions such as increasing social awareness and morality and creating incentives are necessary.

1. Introduction

Since the popularity of communication mechanisms and specifically Internet, there have been endless debates about the future of licensed information, copyright law on a networked domain and if the current of sharing unlicensed information can be stopped. There are groups that advance anti-copyright arguments in the name of "freedom of knowledge" and argue that knowledge should be "shared in solidarity". Such groups may perceive "freedom of knowledge" as a right, and/or as fundamental in realising the right to education, which is an internationally recognised human right, as well as the right to a free culture and the right to free communication. They argue that current copyright law hinders the realisation of these rights in today's knowledge societies relaying on new technological means of communication.[1][2]

On the other side, there are groups that do not share this idea and believe that the idea of free information is dangerous and results in serious damage to many important industries of our world - such as writing, movie, music - that play an important role in today's life in many aspects. Therefore, we have to be looking for ways in order to design new mechanisms to apply copyright law in digital world and prevent this unlicensed information sharing process. It is argued that the current copyright system needs to be brought into line with reality and the needs of society. Hipatia argues that this would "provide the ethical principles which allow the individual to spread his/her knowledge, to help him/herself, to help his/her community and the whole world, with the aim of making society ever more free, more equal, more sustainable, and with greater solidarity."[1]

In this paper, we discuss the current situation of copyright and its role in protecting information. Then we show how this protection is challenged through digital technology and internet. We show that tools that are built on top of internet technology could be, and are, massively used to share unlicensed information in today's digital environment and this phenomena has become so popular that nobody is trying to deny it, but there are groups that try to find ways to stop that. In next section we discuss most important mechanisms that are being employed and developed in order to prevent unlicensed information sharing process. These mechanisms, although effective, are not practically able to stop the flow of information sharing. In last section, we discuss the results of copyright battle with illegal information sharing. We show that, unfortunately, copyright is completely ineffective in digital domain and, from now on, information is free.

2. Copyright Background

A very condensed version of copyright history could look like this: texts (1800), works (1900), tools (2000). Originally the law was designed to regulate the use of one machine only: the printing press. It concerned the reproduction of *texts*, printed matter, without interfering with their subsequent uses. Roughly around 1900, however, copyright law was drastically extended to cover *works*, independent of any specific medium. This opened up the field for collective rights management organizations, which since have been setting fixed prices on performance and broadcasting licenses. Under their direction, very

specific copyright customs developed for each new medium: cinema, gramophone, radio, and so forth. This differentiation was undermined by the emergence of the Internet, and since about the year 2000 copyright law has been pushed in a new direction, regulating access to tools in a way much more arbitrary than anyone in the pre-digital age could have imagined [3].

3. Information Sharing in Digital World

Emergence of internet has changed the face and nature of information-sharing process. This change is in a way that opportunities of accessing and broadcasting information are considerably increased. These increased options have affected the tools and access control mechanisms which have been designed in order to manipulate information access channels. The most important mechanism is copyright law which effectiveness has been strongly challenged. *"The Internet has been characterized as the largest threat to copyright since its inception. The Internet is awash in information, a lot of it with varying degrees of copyright protection. Copyrighted works on the Net include new s stories, software, novels, screenplays, graphics, pictures, Usenet messages and even email. In fact, the frightening reality is that almost everything on the Net is protected by copyright law. That can pose problems for the hapless surfer."* ("The Copyright Web site" http://www.benedict.com/)

Previously distinct media are now simulated within the singular medium of the Internet, and copyright law simply seems unable to cope with it. Consider radio broadcasting and record shops, which once were inherently different. Their online counterparts are known respectively as “streaming” and “downloading,” but the distinction is ultimately artificial, since the same data transfer takes place in each. The only essential difference lies in how the software is configured at the receiving end. If the software saves the music as a file for later use, it’s called a “download.” If the software immediately sends the music to the loudspeakers, it’s called “streaming.”[3]

However, the receiver can *always* choose to transform a stream to a digital file. It’s simple, legal, and not very different from home taping. What now fills the record industry with fear is the possibility that users could “automatically identify and separate individual tracks from digital transmissions and store them for future playback in any order.”[4] In other words, they fear that the distinction between streaming and downloading will be exposed as a big fake.

For example, Swedish company Chilirec provides a rapidly growing free online service assisting users in ripping digital audio streams.[5] After choosing among hundreds of radio stations, you will soon have access to thousands of MP3 files in an online depository, neatly sorted and correctly tagged, available for download. The interface and functionality could be easily confused with a peer-to-peer application like Limewire. You connect, you get MP3s for free, and no one pays a penny to any rights holder. But it is fully legal, as all Chilirec does is automate a process that anyone could do manually.

Cutting a recorded radio stream into individual tracks and entering each correct song title is easy, but takes lots of time. The open source community is continuously coming up with free tools for simplifying it, such as a program called The Last Ripper that can turn the on-demand streaming service Last.fm into a library of MP3 files.

Record industry lobbyists smell the danger, and now they are urging governments to criminalize such practices. On their orders the so-called PERFORM Act (”Platform Equality and Remedies for Rights Holders in Music Act”) was introduced in the U.S. Senate last year. [6] The proposed law would force every Internet radio station to encrypt the transmission of file information, such as the name of the song. Yet anything visible on the screen can still be easily obtained by special software, encryption notwithstanding, and such restrictions would therefore be ridiculously easy to circumvent. Thus the PERFORM Act includes a follow-up clause banning the distribution of this class of software.

People with some programming skills, however, won’t need to do much more than combining a few readily available and otherwise perfectly legal code libraries to compile their own streamripping tool, one that would circumvent the PERFORM Act. For regulations like these to be effective, it is necessary also to censor the sharing of skills that potentially can be useful for coding illegal software. The circle of prohibition grows still larger: Acoustic fingerprinting technologies, which have nothing copyright-infringing to them, but which can be used for the same feared identification of individual tracks, must probably also be restricted.

This domino effect captures the essence of copyright maximalism: Every broken regulation brings a cry for at least one new regulation even more sweepingly worded than the last. Copyright law in the 21st

century tends to be less concerned about concrete cases of infringement, and more about criminalizing entire technologies because of their potential uses. This development undermines the freedom of choice that Creative Commons licenses are meant to realize. It will also have seriously chilling effects on innovation, as the legal status of new technologies will always be uncertain under ever more invasive rules.

Gray zones like these are omnipresent in 21st century copyright law. One reason for this development is the uncertain status of the very idea of “copying” today. Contrast today’s world with the golden age of copyright, roughly speaking between 1800 and 1950. Back then, enforcement was easy. The act of reading a book was far removed from the act of printing one. Record presses and gramophones were safely distinct machines. Since then, things have changed.

The tools that digital world maintains so that everybody can take part in information sharing process and try their chances to find information are countless. Search engines, web 2.0, blogs, p2p networks are all technologies that play a significant role in information sharing. By means of these tools, even if you could not find the exact information you are looking for, you could always be sure that the chances still exist for you and you have access to the platforms that theoretically enable you to reach what you are looking for. [3]

Search engines

Today whenever someone is trying to find some type of information, there are thousands of digital sources available. Search engines are great tools that enhance accessing to these sources. Anti-piracy agencies are today fiercely attacking different kinds of search engines, solely because they provide links to files which may be copyrighted. This includes the bizarre case against Swedish BitTorrent tracker The Pirate Bay, as well as recent lawsuits against Yahoo! China and Baidu. Only Google remains largely uncontested, although they operate in the same gray zone of copyright. For example, the business model of Google Books is to display millions of pages of copyrighted and uncopyrighted books as part of a business plan drawing its revenue from advertising. [3]

Blogs

Bloggers frequently copy large amounts of mainstream media articles and some of us copy pictures we find on the Web. Bloggers don't have a team of photographers and artists, so they just copy images from the Internet. They also copy all the articles of mainstream media freely because for mainstream media, articles often just disappear after a week or two. It means that articles get archived and can only be retrieved for a fee. The result is that a post discussing a mainstream media article with just a link or a small quote can become hard to understand when the article being referred to becomes unavailable. That's why bloggers often copy significant portions of articles, so their posts can still be understood when the URLs to the articles go dead. [7]

While music and movie studios remain suspicious of the Internet, many stock photography companies have digitized their collections so that customers can easily access them online. At sites like GettyImages.com and Corbis.com, advertisers, publishers and others looking to license professional photographs can browse and purchase millions of high-quality images. In making it easy for customers to find pictures, though, the sites have also made it easier to swipe a copy of an image and post it on the Web.

"On our Web site, we try to post high-quality examples of the imagery you can license," said John Lapham, the vice president who runs Getty's legal team. "Because of that, the resolution of the photos is good enough that if you'd like to cut and paste that photo for your 'We Love Christina Aguilera' Web site, you can." [7]

Image-search tools from the likes of Google Inc., along with cheap or free editing and blogging software, are sending those images bouncing all over the Internet, making it difficult for their owners to track them. It's not just bloggers who are stealing snapshots; Getty says its images have been used without permission on the Web sites of a regional utility company, an auto dealership and a gym. [8]

Web 2.0

According to Daniel Nations copyright infringement has proliferated with the rise of Web 2.0, which allows collaboration on a global, but has brought with it a rise in copyright infringement. Commentators have pointed out that Web 2.0 "users" often do not realize that they are engaging in copyright infringements. For example, blogging and the associated passing around of articles and images may not be recognized as copyright infringement by the blogger, and/or not intended as such. Web 2.0 is part of a recent shift in public awareness and expectation of the Internet, which acts as the interface for almost instant, ubiquitous availability of information as and

when required.[9] While many Web 2.0 users or companies do not advance consistent anti-copyright arguments, their actions and business models fundamentally question prevailing copyright. Companies, such as YouTube, Viacom and Google, may comply with requests to remove copyrighted material, but refuse to actively enforce copyright on their site. These companies argue that they do not have the power to prevent the uploading or downloading of copyrighted material. [10]

Peer 2 Peer networking

Peer 2 Peer networks probably have played the most important role in breaking the law enforcements to prevent free access to copyrighted contents. The purpose of developing p2p technology has not been breaking the law and this technology has great uses and the idea behind is very brilliant. But it also provides its users mechanisms so that they could share unlicensed content very easily. Development of p2p networks, as a technology, could not be stopped and since this technology can be misused in sharing unlicensed data, it is not easy to force people who intend to share or freely access such information. Although law could be a preventing factor, but since the platform for information sharing exists, it could not theoretically be stopped. Here we will have a brief review over p2p networks and how they changed the face of information sharing.

Peer 2Peer networks allow the community of users to share information and resources in different forms of digital contents, music files, storage space and etc. In contrast with client server networks, p2p networks are consisted of computers at the edge of the network (aka peers).

Although p2p networks seem to be a new architecture and idea, but the original idea backs to the early days internet. Internet Relay Chat (IRC) which was developed in the late 1980s, was one of the first p2p services at that time. IRC allowed transmission of text messages and digital contents directly between groups of users. Usenet Bulletin Board and Domain Name Systems also use elements of P2P architecture. So, the main concept of P2P networks is embedded in many of internet applications [11].

The widespread popularization of p2p networks at consumer level was started by release of Napster at 1999. Shawn Fanning, student of Northeastern University developed the program and released it between 30 students. After 12 month, 25 users across the world were using the software [12]. Napster software (named for its creator whose nickname is Napster because of his curly hair) indexes MP3 music files on a user's PC and displays this index to other Napster users over the Internet. A simple search locates the music of interest, which users can then download through the free Napster network. I don't believe that creators of Napster were originally thinking about piracy, and I don't believe that Tim Berners-Lee worried about copyright infringement when he created the Web. [13]

One of the more flexible PPN systems is Gnutella, which works with more than just mp3. It works with corporate data. Gnutella (named for a European breakfast cereal) is a protocol for connecting computers on a peer-to-peer basis across the Internet, in contrast to Napster, which is more like a centralized index of file servers. With Gnutella client software on a local computer, users can select what they want to share, index that information, and search for shared files and information across a distributed Gnutella network. [13]

Gnutella provides more than simply a search engine and file server. It also provides the protocol for a distributed capability that is similar to the founding concept and protocol behind the Internet itself. [13]

In all P2P file-sharing networks, the content resides with the network users. The only difference between the architecture of these networks is the nature of the catalog of this content. In Napster and OpenNap (an open source version of the Napster protocol) the catalog of content is centralized in a single server or a set of mirrored servers to accomplish load balancing [14]. Users who logged into the Napster network would automatically upload a list of the content they were sharing to a mirrored set of central content databases owned by Napster.

Users who wanted to access content on the network would issue a query against this central database that would then point them to a list of peers who had the content on their computer. The Napster program at the peer initiating the search would then automatically issue a ping message to each of the peers in the list of search results to determine the level of congestion on the network and at the peer. The Napster client would then display the search results in a tabular format with the names of the files returned by the search along with the file size and length, bitrate and encoding frequency, and the name of the user along with the user's self-reported connection speed and ping time [15].

The Darknet

In 2002 a group of Microsoft-affiliated researchers, published “The Darknet and the Future of Content

Distribution", investigating what they call "the darknet", a collection of networks and technologies used to share digital content (such as peer-to-peer file sharing and CD and DVD copying). The authors stop short of stating that copyright law has been made obsolete by the rise of "the darknet", but state that "we believe it probable that there will be a few more rounds of technical innovations to sidestep existing laws, followed by new laws, or new interpretations of old laws, in the next few years." The paper discusses evidence that the darknet "will continue to exist and provide low cost, high quality service to a large group of consumers. This means that in many markets, the darknet will be a competitor to legal commerce."[16]

The authors also argue that people have always "copied", however in the past valuable objects were mostly physical and it was uneconomical or, when carried out on a large scale, stoppable using patent or copyright law. They argue that this has fundamentally changed with the Internet and associated technologies, as valuable digital content can be copied at little cost and distributed on an unprecedented scale. Kevin Kelly, the founding executive editor of *Wired magazine*, has commented that "when copies are superabundant, they become worthless, while things which can't be copied become scarce and valuable. What counts in the end are "uncopyable values," qualities which are "better than free."[9]

4. Protection Efforts

When the modern technology, specifically internet and networking technology, challenged copyright law and everything trying to protect licensed information, everybody started thinking about defense mechanisms in order to save licensed information from being free. Here we discuss such mechanisms and as we will see, in spite of being effective sometimes, they seem not to be able to stop the flow of free information.

The huge size of the Web makes it virtually impossible to track down everyone who is accessing illegal versions of information, but a number of different techniques have been effective in deterring illegal sharing or reproduction of information, called DRM techniques.

4.1 Digital Rights Management (DRM)

DRM is an acronym for Digital Rights Management, a broad term used to describe a number of techniques for restricting the free use and transfer of digital content. DRM is used in a number of media, but is most commonly found in video and music files. There are many who argue that DRM is a misnomer, since it deals with use issues rather than the rights of the consumer. They therefore reinterpret DRM to stand for Digital Restrictions Management.

Limiting the standards users' ability to commit copyright abuse through technology is a mechanism increasingly being employed by standards sellers. There are currently a number of different DRM techniques in use to protect Standards from copyright abuse.

Important as these technologies are, however, the way they are applied is critical. If content control and copy protection remain top priorities for digital media publishers, DRM will be deployed. Given that, in order to avoid consumer alienation, DRM standards need to be flexible enough to protect the content, be replaced when they are hacked, and flexible enough to accommodate changes in consumer behaviors and the tenets of fair use, which can be disrupted by the introductions of new technologies. This is problematic, considering two difficulties associated with DRM:

• The use of technology to enforce copyright rights. Technology or "code," as Professor Lawrence Lessig of Stanford University Law School has stated, can never accurately map fair use, particularly since fair use is an evolving doctrine.

• Protecting intellectual property with DRM comes at the price of innovation, either stifling it or penalizing it. This is another reason why the DMCA is contested by consumer rights and technology advocate groups. The DVD-Jon Johansen case illustrates "innovation" as well as "illegal conduct," depending on the reader's perspective.

5. Can Copyright Stop the Process?

According what we discussed, here is the question that with this strong flow of information sharing through internet, can copyright do anything? The fact is that fighting digital copyright infringement in the 21st century has proven a trying and, at times, near-impossible job. Technology is expanding far more quickly than the laws that regulate it, which causes ambiguity and confusion over what is legal and what constitutes infringement. The government and the courts have tried striking fast and hard, and have experienced some degree of success, as seen in the shutdown of the first iteration of Napster, and the rise of pay-per-song services like Apple iTunes and the

relaunched version of Napster. The file-sharing industry appears to be learning from its mistakes and now actively tries to avoid the fate of Napster through agreements with the media corporations that own copyrights. YouTube, through its acquisition with Google, will be facing many tests in the next few years, but will most likely emerge from any legal battles in the same format it is in today. In the meantime, it is likely that digital copyright law will need to be rewritten to take into account the many changes of the last couple of years that have forever altered how people communicate and share information. [17]

Whatever you call it, the theft of copyrighted material is just about impossible to control in our ever-expanding, ever-increasing digital age. In fact, there is a widely held belief that technology has made copyright impossible to enforce. Take the entertainment industry, for example:

While all school children are taught the dangers of plagiarism of print materials when they write their first term papers, many of these same kids are some of the greatest offenders who believe that internet file sharing of their favorite music is their due simply for being fans of this or that rock or rap group.

The music industry, of course, has been vigorously fighting back with numerous lawsuits, many of which target these same young people. And, while some progress seems to have been made, the reality is that the problem is so massive, it is all but rendering music artists' copyrights useless. While it may be possible to bring some control to the internet, with just a bit of internet savvy and searching, you can find and download programs which can be used to "unlock" the various security features built in to all music and video CDs. With that kind of tool, it's possible to pirate this type of intellectual property without leaving a trail on the internet.

Like musicians, photographers are finding that anyone with minimal skill and the right software can alter the original image and use it on websites, narrowcasts and the like. In an interesting twist, a Florida photo printing lab refused to print an amateur photographer's digital photos because they looked too professional, and the lab managers feared that doing so might violate someone's copyright. On the more unsavory side, phone cameras are now being used to clandestinely copy and use everything from drivers' licenses to copyrighted artwork.

Writers are equally concerned. For example, Google recently announced its intention to put the libraries of four major universities on line to make previously inaccessible material available to researchers. The outcry of the publishing industry, professional associations and even a country (France) was immediate, strong and negative. While copyright for many of the works has expired, critics say the effort could have financially troubling outcomes. [18].

Gerry Faulhaber, a professor at the Wharton School of Business at the University of Pennsylvania and the former chief economist for the FCC says: "Copyright is a very big issue in the legal world today, but in the business world, when you talk to consumers about protecting copyrights, it's a dead issue," he said. "It's gone. If you have a business model based on copyright, forget it."[19]

According to Faulhaber, the "world of open piracy," created by digital technology will always thwart content owners seeking to leverage the monopoly granted to them by copyright law.

"The music industry is yet to figure this out," he said. "The current iTunes model is probably the best they can do. In both movies and music this is likely to result in substantially lower revenue for content owners." The movie studios will have an even tougher time than the music companies, according to Faulhaber, because some of the monetization models that can work for music--such as advertising--probably won't work for full-length movies.

The likely result? "Content providers will have to hook up with the conduit guys," Faulhaber said. "They're the only ones in a position to monetize content online because they can control its distribution." [19]

Scholars such as Rasmus Fleischer argue that copyright law simply seems unable to cope with the internet, and hence is obsolete. He argues that the Internet, and particularly Web 2.0 have brought about the uncertain status of the very idea of "copying" itself. He argues that in an attempt to rein in Web 2.0, copyright law in the 21st century is increasingly concerned with criminalizing entire technologies. Leading to recent attacks on different kinds of search engines, solely because they provide links to files which may be copyrighted, Fleischer points out that Google, while still largely uncontested, operates in a gray zone of copyright (e.g. the business model of Google Books is to display millions of pages of copyrighted and uncopyrighted books as part of a business plan drawing its revenue from advertising). Fleischer's central argument is that copyright has become obsolete with regards to the Internet, that the cost of trying to enforce it is unreasonable, and that

instead business models need to adapt to the reality of the darknet.[9]

There has also been some efforts in order to legalize file sharing process. Like Creative Commons, the French group Association des audionautes is not anti-copyright, but proposes a reformed system for copyright enforcement and compensation. Aziz Ridouan, co-founder of the group, proposes for France to legalize peer to peer files haring and to compensate artists through a surcharge on Internet service provider fees (i.e. an alternative compensation system). Reportedly, major music companies have equated Ridouan's proposal with legitimizing piracy. In January 2008 seven Swedish members of parliament from the Moderate Party (part of the governing coalition), authored a piece in a Swedish tabloid calling for the complete decriminalization of file sharing. The Swedish members of parliament wrote that "Decriminalizing all non-commercial file sharing and forcing the market to adapt is not just the best solution. It's the only solution, unless we want an ever more extensive control of what citizens do on the Internet."[20]

6. Conclusions

As we discussed, in digital age there are countless means to share data and information. Blogs, Web 2.0 and P2P networks create a huge resource of information which is easily accessible from everywhere. P2P networks have created platforms to share data between groups of users who do not intend to pay for the information they are looking for. Such groups form a darknet thatshare files and information for free. Although you could not be able to find whatever you want in darknets, the important point is that the platform for such an access to unlicensed information exists and theoretically, everyone is able to share files and information in a network and once information in entered in darknets, it is nearly impossible to track it down. Today, you could find every kind of popular files, music tracks, movies, famous ebooks and etc in darknets. The law has limits and its inefficiency has been proven to cope with the new technologies. In this circumstances Information is free for who wants it free. This does not mean that nothing should be done in order to protect information. Rising awareness and creating incentives could be some of the most effective ways to motivate people not misuse means of accessing free information. The simplest and most effective method being used by the standards community to minimize copyright abuse on standards is to ensure that stakeholders know the facts about copyright and understand the consequences of copyright infringement.

Making the legitimate versions of standards more desirable and useful than copies is a relatively new method being employed by some standards sellers. Some examples of this technique include creating online standards that allow users to directly input information and perform related calculations within the document.

The fact is that, in spite of all law enforcements, incentive acts and creating awareness, daknets and illegal information sharing (intentionally or unintentionally) will remain an option for groups of people and it will effectively work.

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