**Handouts of Lecture 14 Professional Practices (IT)**

**Lecture Title: Intellectual Property Rights (Cont.)**

**Google Books**

In December 2004, Google announced a plan to scan millions of books held by Harvard University, the University of Michigan, the New York Public Library, Oxford University, and Stanford University, creating a database containing the words contained in all of these books. This database is much more powerful than traditional library card catalogs because it allows users to search for words or phrases appearing anywhere in the cataloged books. The system responds to a user query by returning the books that match the query most closely. If the book is in the public domain, the user can view and download a PDF file containing the scanned images of the book’s pages. If the book is still under copyright, the user can see a few sentences from the book that show the search term in context, and the search engine provides links to libraries holding the book and online bookstores selling the book. In September 2005, the Authors Guild filed a lawsuit in the US District Court for the Southern District of New York, claiming that “by reproducing for itself a copy of those works that are not in the public domain, Google is engaging in massive copyright infringement”. A month later a group of five major publishers sued Google for copyright infringement. The publishers claimed that Google was infringing their rights under the Copyright Act because Google’s intent was “purely commercial,” and in order to create its database, Google was systematically copying entire books still protected by copyright. Three years later Google reached an out-of-court settlement with the Authors Guild and the Association of American Publishers. A joint public FAQ from the Authors Guild, the Association of American Publishers, and Google stated that the agreement would enable them “to do more together than copyright owners or Google could have done alone or through a court ruling”. According to the three parties, the settlement would result in five important benefits:

1. Readers in the United States would have much easier access to millions of copyrighted books, including millions of books that are out of print, by allowing readers to search through them and preview them online.

2. The market for copyrighted books in the United States would grow by offering Google Books users the opportunity to purchase online access to them.

3. People would gain online access to out-of-print books at designated computers in US public libraries and university libraries.

4. US colleges and universities would have the opportunity to purchase subscriptions that would enable their students to gain online access to the collections of some of the world’s greatest libraries.

5. Authors and publishers would receive payments earned from the online access of their books, fees paid when people printed pages from their books, and advertising revenues.

As part of the settlement, Google agreed to pay $125 million to resolve legal claims made by authors and publishers, cover their legal fees, and establish the Book Rights Registry. By registering their works with the Book Rights Registry, copyright holders would be able to receive payments resulting from institutional subscriptions, book sales, and advertising revenues. The out-of-court settlement was controversial [43]. According to some, Google should not have made a deal with the plaintiffs. They felt Google’s use of the copyrighted material was a fair use, based on the precedent of Kelly v. Arriba Soft Corporation, and if Google had gone to trial and been found not guilty, the public would have been able to access these books at lower rates. Others criticized the settlement because they thought it gave Google a virtual monopoly over orphaned works: copyrighted books for which the copyright owner cannot be located.

**New Restrictions on Use**

CDs and DVDs store sounds and images in digital form. When information is stored digitally, anyone with the right equipment can make perfect copies. China is the principal source of counterfeit CDs and DVDs. The increase in the number of people with broadband Internet connections has stimulated digital copying. Although a patient person with an ordinary dial-up connection to the Internet can download large files, connections that are dozens of times faster make file sharing much more practical. As more people have gained DSL or cable access to the Internet, the number of downloads has soared. Broadband connections have also made video sharing much more popular. As a result, the music industry has lost sales. Total revenue from music sales and licensing in the United States dropped from $14.6 billion in 1999 to $6.3 billion in 2009.

Governments and recording companies have responded to the threat of illegal copying of copyrighted materials by introducing new legal and technological restrictions on copying. Sometimes that makes it impossible for consumers to make copies even for purposes that are considered fair use, such as making a backup. Larry Kenswil of Universal Music Group says, “What we really want to do is not to stop copying, simply to stop redistributing. But the technology available doesn’t distinguish between the two”.

**The Digital Millennium Copyright Act**

The Digital Millennium Copyright Act (DMCA), passed by Congress in 1998, was the first major revision of United States copyright law since 1976. The primary purpose of the DMCA was to bring the United States into compliance with international copyright agreements it had signed. Provisions in the DMCA significantly curtail fair use of copyrighted material.

The DMCA makes it illegal for consumers to circumvent encryption schemes placed on digital media, and it is illegal to sell (or even discuss online) a software program designed to circumvent copy controls [49]. Online service providers that misuse copyrighted materials face severe penalties [49]. That means, for example, a university that knows students are exchanging MP3 files on the campus network and does nothing to stop them can be sued [50].

The DMCA extends the copyright protection to music broadcast over the Internet. It requires royalty payments to be made to copyright holders of music played over the Internet since October 1998. For example, a college Internet radio station would pay the larger of an annual fee of $500 or $0.0002 per listener per song for every song that it plays. Radio stations are having a hard time determining how much they owe, because most of them have not kept track of how many online listeners they have or the number of songs they have played.

**Digital rights management**

Digital rights management (DRM) can refer to any of a variety of actions owners of intellectual property may take to protect their rights. As Christopher May puts it, “All DRM technologies are aimed at tracking and controlling the use of content once it has entered the market”.

DRM technologies may be incorporated into a computer’s operating system, a program, or a piece of hardware. One approach to DRM is to encrypt the digital content so that only authorized users can access it. Another approach is to place a digital mark on the content so that a device accessing the content can identify the content as copy protected.

**Secure Digital Music Initiative**

The Secure Digital Music Initiative (SDMI) was an effort to create copy-protected CDs and secure digital music downloads that would play only on SDMI-compliant devices. About 200 entertainment and technology companies joined the consortium, which worked for three years to develop “digital watermarks” that would make unauthorized copying of audio files impossible.

The SDMI was unsuccessful for three reasons.

First, before any copy protection technologies could be put in place, the number of music files being copied on the Internet mushroomed.

Second, some of the sponsors of the SDMI—consumer electronics companies—started making a lot of money selling devices that became more attractive to customers as access to free MP3 files got easier. Their sales could be hurt by restrictions on copying.

Third, the digital watermarking scheme was cracked.

**Sony BMG Music Entertainment Rootkit**

In the summer and fall of 2005, Sony BMG Music Entertainment shipped millions of audio CDs with Extended Copy Protection, a DRM system.

Extended Copy Protection prevented users from ripping audio tracks into MP3 format or making more than three backup copies of the CD. It also monitored the user’s listening habits and reported 4.5 New Restrictions on Use 185 back to Sony via the Internet. Extended Copy Protection did this by secretly installing a rootkit on Windows computers when the CD was played for the first time. A rootkit is a way of hiding files and processes from users; rootkits are commonly associated with computer hackers. The installation of the rootkit also compromised the security of the user’s computer, making it vulnerable to “Trojan horse” programs. A computer expert discovered the Sony rootkit on his computer and publicized its existence, resulting in a huge public outcry and a class action lawsuit.

**Encrypting DVDs**

A DVD (digital versatile disc) is capable of storing a full-length motion picture. DVDs are smaller than videotapes and have higher video and audio fidelity. People can view DVDs on DVD players attached to home entertainment systems; they can also watch DVDs on Windows and Macintosh computers equipped with DVD players.

To prevent unauthorized viewing of DVD movies, the contents of the discs are encrypted using a scheme called the Content Scramble System (CSS), developed by Matsushita and Toshiba. DVD players and DVD drives inside PCs and Macintoshes have a licensed copy of CSS, including the decryption keys.

In 1999 16-year-old Norwegian Jon Johansen wrote a computer program called DeCSS that decoded the CSS encryption scheme. DeCSS enabled him to view DVD movies on a computer running the Linux operating system, which was not supported by CSS. Johansen distributed the program to others via the Internet. 2600 Magazine published the code and provided links to it. Eight major motion picture studios successfully sued the publisher of 2600 Magazine for violating the Digital Millennium Copyright. In November 2001, a federal appeals court upheld the ruling. The appeals court ruled that while a computer code is “speech,” the code enjoys only limited First Amendment protection because its purpose is more “functional” than “expressive.” The court held that the publisher’s right to post the code on the Internet was outweighed by the potential harm the program could do in the form of increasing the illegal copying of digitally encoded motion pictures. Jon Johansen was also brought to trial in Norway for creating and distributing DeCSS, but in January 2003, an Oslo City Court acquitted Johansen. The court ruled he had the right to access information on a DVD that he had purchased. It noted the program Johansen developed to decrypt DVDs could be used for both legal and illegal purposes.

**Foiling HD-DVD Encryption**

IBM, Intel, Microsoft, Panasonic, Sony, Toshiba, the Walt Disney Company, and Warner Brothers cofounded an organization that created the Advanced Access Content System (AACS) for encrypting high-definition DVDs (HD-DVDs).

The purpose of the AACS is to prevent the unauthorized copying and viewing of HD-DVDs. In January 2007, this 32-character AACS encryption key was posted on Digg.com, a social news Web site: 09 F9 11 02 9D 74 E3 5B D8 41 56 C5 63 56 88 C0. In theory, consumers could use this key to play HD-DVDs on their Linux computers or rip movies to their computer hard drives, although the post did not link to a program that could actually do either of these things.

The AACS parent organization immediately contacted Digg, claiming the post violated its intellectual property rights and ordering Digg to purge the key from its site. Tiny Digg, with only a few employees, deleted the offending story and closed the account of the person who submitted it. Some other Digg users had reproduced the story or mentioned the key in comments. Digg closed the accounts of these users and deleted their posts, too.

**Criticisms of Digital Rights Management**

The introduction of DRM technologies has been controversial. Here are some criticisms that have been raised against DRM. Many experts suggest that any technological “fix” to the problem of copyright abuse is bound to fail. As we have seen in the previous examples, all prior attempts to create encryption or ant copying schemes have been abandoned or circumvented. Others argue that DRM undermines the well-established principle of fair use. Under DRM, a consumer may not be able to make a private copy of a DRM-protected work without making an extra payment, even if he has the right to do so under traditional fair use standards.

DRM restrictions sometimes prevent libraries from reformatting materials to make them more accessible to persons with disabilities. In addition, DRM protections, unlike copyrights, never expire.

Finally, some DRM schemes prevent people from anonymously accessing content. Microsoft’s Windows Media Player has an embedded globally unique identifier (GUID). The Media Player keeps track of all the content the user views. When the Media Player contacts Microsoft’s central server to obtain titles, it can upload information about the user’s viewing habits.

**Online Music Stores Employed Digital Rights Management**

When Apple began selling music through the iTunes Music Store in 2003, all of the songs were protected with a DRM scheme called FairPlay. FairPlay blocked users from freely exchanging music they had purchased by preventing songs from being played on more than five computers or being copied onto CDs more than seven times. FairPlay had two other “features” that were strong incentives for consumers to stick with the Apple brand: music purchased from the iTunes store couldn’t be played on portable devices other than the Apple iPod, and DRM-protected music purchased from other online retailers couldn’t be played on the iPod.

Consumers complained about the restrictions associated with DRM, and eventually music retailers responded. In 2007 EMI announced it would begin offering all of its songs without DRM through the iTunes Store for $1.29, 30 cents more than the previous price. A year later Amazon became the first online music store to reach an agreement with all four major labels to sell music free of DRM restrictions. Apple followed suit in 2009 with an announcement that it, too, had reached an agreement with all the major music labels to sell music without DRM restrictions.

**Microsoft Xbox One**

In June 2013, Microsoft announced that it was creating a cloud-based gaming experience to coincide with the launch of Xbox One. In the new environment people would be able to play their games from any Xbox One without the disc being in the tray, and every Xbox One would automatically be kept current with the latest system and application updates. Consumers soon learned about the restrictions accompanying these benefits, and their reactions were overwhelmingly negative.

Three features of the proposed licensing arrangement were particularly controversial: a disc owner would be allowed to share a disc only once, freedom to sell discs and buy secondhand titles was restricted, and Xbox consoles would have to check in online every 24 hours to ensure that the authorized software was up-to-date and that there was no unauthorized software.

In the midst of the controversy, Amazon ran a Facebook poll to see which new gaming console consumers were more interested in purchasing: the Microsoft Xbox One or the Sony PlayStation 4. The PlayStation 4 was capturing 95 percent of the votes when Amazon decided to shut down the poll early. Microsoft did not waste time changing course. Thanking consumers for their “assistance in helping us to reshape the future of Xbox One,” Microsoft’s Don Mattrick announced that the controversial features of the licensing agreement were being dropped. In particular, he indicated consumers would be able to play Xbox One games without being connected to the Internet, the Xbox One would not need to connect to the Internet once every 24 hours, and consumers would be free to lend, rent, or sell their discs. This reversal also meant that people would no longer have the ability to play their games from any Xbox One console without the disc being in the tray.

***Reference***

***Lecture 14 slides: Intellectual Property Rights***

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