

# Peer to Peer

## Pirating of the 21<sup>st</sup> century?

October 8, 2004

Haesun Kim

### 1 Introduction

CD-RW or CD-R stood in the spotlight of storage space of computer files. However we have recognized the lack of memory capacity and have begun to use 100-giga bites hard disk in our personal computer naturally. Moreover Internet service providers offer more than the transmission speed of 50 Mbps theoretically. In this trend, what is the meaning of Internet for us? The combination between Internet and the hard disk of each person in the world might be made efficient use of one of file storage. There is no problem if the owner of the files in his or her storage accesses and uses the files. If some ones who know him or her or does not access the owner's files, what happen?

The concept of sharing computer files is not clear. As there is no difference of contents between the original file and its copy that is

indicated with 0 or 1, spread of files rather than sharing files would be right. Unless the file is not a virus, it does not matter that it is called file sharing with user's decision.

The number of users runs into millions people and the number of files that is shared by them amounts to billions. The size of files could be about Peta Bytes. The shared files can be downloaded infinitely. Taking the whole process is accomplished without a fee into consideration, it is close to the ideal cyberspace intended by Internet. The technology that makes possible file sharing is 'Peer to peer' (P2P) services. The philosophy of KaZaa, which is one of the P2P service provider, "I share, therefore we are" has an implied meaning.

### 2 History of P2P

Napster[1] popularized the P2P program for the transaction of the electronic files among the users in the 1990s. Napster was not only free, but could also support the program known as P2P networking. It is easy for users to connect each other. The popularity of Napster reached its peak February in 2001. The number of users is one million six hundred thousand. By the way 'Recording Industry Association of America' entered a lawsuit against Napster in order to protect intellectual property rights of recording industry. After all, it finished that Napster stopped its core server. The extinction of Napster led to appear a variety of new file sharing software. The new program designed that all sorts of files could be shared and users can exchange their files each other directly. The programs such as KaZaa, Morpheus and iMesh have stormed since in 2001.[2] The programs maintain millions users. According to statistics, 44 percent of users who was between 12-year-old and 17-year-old American downloaded music files from Internet.

### **3 Hybrid P2P vs. pure P2P**

P2P service classified hybrid P2P and pure P2P. First of all, we will see the hybrid P2P[3] service. Napster was referred to as using hybrid P2P service. The system for the hybrid P2P look for mp3 files in the user's hard disk and stores the list as a structure with easy search. Its server has no mp3 file, but it manages which site includes any files

and provides the location of files into users. The core server interferes the process. When downloading the required files, it does not need to pass through the core server and directly connects the PC of users. On the other hands, pure P2P[4] service does not need the server. Gnutella is referred to as using pure P2P method. There are no data that is kept by the core. The program has embedded search engine, so connects the corresponding computer directly. The users in pure P2P form a mutual relationship with each other and act as go-between information of directories in relay.

In the middle of file sharing by P2P, the thing is that the person who has a file does not create a new file but shows a tendency to keep the file that someone has created already. For the reason, service providers related to P2P such as KaZaa request an agreement when it provides a program for P2P or user is supposed to utilize its services. Sharing files using P2P, if user shares a file that holds the copyright, it is obvious to infringe the copyright of file owner. So P2P service providers become a confederate or an abettor? How about sharing the copyright files and allowing someone to download the files? In my opinion, P2P for file sharing is not pirating because of impossibility of P2P service prohibition, contribution of many research areas and the relationship between P2P and other business market.

## 4 Counterclaims

Some people say that file sharing using P2P is pirating. The reason why they assert it is the followings: Effluence of the individual and infringement of copyright. Especially, they claimed that the situation of recoding industry took a sharp turn for the worse because of infringement of copyright. First of all, they support that we can search for the private files for the users and abysmal other users can abuse the information. Even though, there are two solutions. The users adjust the directory that we want to share and this technique has been implemented already by lots of companies. If users deal with their files carefully, it does not matter. Another one is that we believe in the individual's mortality. It might be the hardest, but at the same time it is the simplest way to solve the problem.

Secondly, they concerned the problem of pirating copyright [5]. Copyright law states 'Fair Use' [6] that permit the copy in certain coverage for private uses. For example, the important reason why people buy music compact disk is listening to music as an original condition but it is not always true. They can record the CD contents into a tape and present it to their friend. In this case unless there exists 'Fair Use', they need the additional contraction with copyright holder. It takes an advantage of people buying CDs and copyright holder as copyright holder do not need to meet people buying CDs for additional contraction and in that progress

copyright holder can reduce the expense and people who buy CDs can increase. In terms of recording industry although it said that the sales of records would be increased, actually it did not. Soribada[7], which is the biggest P2P service provider in Korea, prohibited mp3 file search service by the command of Recording Industry Association of Korea. Recording Industry Association of Korea expected to increase the number of purchasing records. However, it did not come true because there were about 1000 P2P service providers in Korea and some netizens wage a civic campaign to boycott recording products. Therefore we could not stop the use of P2P service and could not say that P2P is stealing the right of copyright holder.

## 5 Supports for the P2P

The thought that P2P is worth keeping and developing is fully supported. There are several reasons: Impossibility of P2P prohibition, Usage of good purpose, Contribution of other existing industry. Because we already know that the number of users who utilize P2P service is 10 millions in the world, it is impossible to take them to task for their fault and punish them. And also it is impracticable to forbid P2P service. If someone graduates from university as a major of relating to computer, they can write a P2P program. Despite of prohibition, in the future new and advanced P2P systems[8] are expecting to turn up. MSN messenger,

Yahoo messenger have a function of P2P file sharing, so the users can exchange their files. Thus, it is impossible to stop P2P service in one day.

Next, we should keep P2P as worth research area in mind. For example, SETI@home project, which is progressed by University of California at Berkeley, is using thousands computers with P2P technology for data analysis looking for the outside life. It needs one day to complete the work that takes for 1000 years with supercomputer. Over the world the similar project like an AIDS medical treatment, meteorological researches, financial analysis and bioengineering using P2P except for SETI@home is going on. P2P's usage plays a significant part in a lot of research areas, so P2P system is not just stealing something that belongs to other people.

Lastly we cannot lose sight of the influence of P2P system to other business. We cannot deny an enormous effect when P2P service is forbidden. After Recoding Industry Association of Korea sued Soribada, Soribada was dropped for 7 months because it checked the development of digital contents circulation system and did a great deal of damage to mp3 player industry [9]. In Netherlands, the operation of P2P website had been not allowed in 2001, but judgment was reversed in 2002. The reason was that the current law and rule could not evaluate high-tech digital technology and culture as they are. According to the above-mentioned

statements, P2P contribute to our economy.

## 6 Conclusions

Consequently, we saw through the ability of P2P technology in different point of views. Prohibiting P2P service without the alternative is impossible because it is easy to create the P2P program and spread it quickly and P2P system has uncountable users. P2P system is a technology worth developing. It will contribute to help the other research area analyze their data. The market related to P2P such as digital contents market and mp3 player market is needed to P2P system's support.

In the Internet era, the double-sided technology like a P2P service is coming out. No matter how worth P2P may be unavoidable to occur the victim of P2P service. We should try to find a solution to this problem. We need to build up the technical protection. The technology can regulate accessing copyrights or make easy track the copy of the original copyright. In addition to it, the method that satisfies both copyright holder and P2P users is the switchover of charged P2P service. It has been in force by some P2P providers. What is preceded before everything else is that users have moral consciousness.

## References

- [1] Michael H. Goldhaber, The Napster Revolution and the law,

<http://www.heise.de/tp/english/kolumnen/gol/8806/1.html>, 2000

[2] A. Berschadsky, RIAA v. NAPSTER: A Window onto the Future of Copyright Law in the Internet Age, 18 The John Marshall Journal of Computer & Information Law 755, 2000

[3] B. Yang H. Garcia-Molina, Comparing Hybrid Peer-to-Peer Systems, 27<sup>th</sup> International Conference on Very Large Data Bases, 2001

[4] J. Yang, P2P architecture and implementation method, 2001 KOREA P2P technology seminar 2001

[5] WHAT IS COPYRIGHT?, <http://www.gnutella.com/forums/gnutellastop/703>, 2002

[6] Ivan Hoffman, Napster and Fair Use, <http://www.ivanhoffman.com/napster.html>, 2001

[7] J. Kim W. Lee, P2P and Recording copyright, Cyber Law & Econ. 1, 2001

[8] Robert X. Cringely, Son of Napster: One Possible Future for a Music Business That Must Inevitably Change, <http://www.pbs.org/cringely/pulpit/pulpit20030724.html>, 2003

[9] S. Yoo, The analysis of influence of Internet to digital contents and circulation, The department of Korea culture development, 1999