

# Why Do People Share Music Files in the P2P Environment: An Ethical Decision Perspective

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**Abstract:** Digitalized information and the Internet have brought great impacts on the music and movies industries. This study tested the ethical decision model of Hunt-Vitell to understand why and how people share unauthorized music files with others in the P2P network. Four scenarios of using P2P system and four norms related to them were proposed in the study. The results indicate that the deontological norm of anti-piracy, whether is theft of intellectual property or not, is not the main factors affecting P2P users' ethical consideration regarding sharing music with others. The results also suggest the music companies should care more about how to realize the benefits of the digital and network technology to increase the consumers' welfare instead of just declare the intellectual property they owned and resist the innovations caused by the new technologies.

**Keywords:** P2P computing in e commerce, Ethical Decision Model, Computer Ethics, Music industry, Consumer ethics

## I. Introduction

Information technology has changed the economics of production and distribution of information products. Because the cost of reproduce a copy of digitalized information is low and the quality of the copies is almost the same as the original one, piracy has been recognized as a major ethical issue in the information age (Mason, 1986). Most of the previous studies of piracy focused on the unauthorized software copying or soft-lifting of students or IT professions. Probably due to that most people perceive softlifting causing little harms to the faceless, billion-dollar company, software piracy may not be perceived as an unethical behavior (Logsdon et al., 1994). Researchers suggest introducing ethical consideration and code of conduct in the education as solutions for the problem. However, there are still arguments for and against unauthorized copying of software (Siponen and Vartianine, 2004).

The technologies of peer-to-peer (P2P) architectures, in which users directly connect to the others to share and download files, further speeds up the propagation of digital resources. Although, under the present laws, act of exchanging copyrighted file is probably an invasion of

intellectual property (Lessig, 2002; Von Lohmann, 2003), people still now exchange a huge amount of digital music or movie in the P2P network. File sharing using P2P networks has been called the "killer application" in the Internet (Krishnan et al., 2003), or the disruptive innovation for the music industry (Spitz and Hunter, 2003). The norms of using the P2P network are still emerging (Spitz and Hunter, 2003), and thus it raises the needs for understanding people's ethical perception of sharing copyrighted files in the P2P network. The users' motives and concerns for downloading or sharing music files in the P2P environment are not the same as the motives and concerns for softlifting. Factors affecting ethical decisions of people in the P2P environment are still unclear.

User's unauthorized copy of music files is a problem of consumer ethics. Previous studies of consumer ethics often use Hunt and Vitell's (1986) model to describe the ethical decision making processes of consumers (Vitell, 2003; Vitell et al., 2001). This model has also been shown useful for understanding the decision processes of softlifting (Tong and Yap, 1998). However, people using P2P network may face dilemmas caused by the conflicts among different norms. This fact was rarely investigated by previous studies. This study proposed and tested a simplified model derived from Hunt-Vitell's model to describe people's ethical decision processes about sharing unauthorized music files in the P2P network. We also extended Hunt-Vitell's model to test and investigate the impacts of the beliefs of the norm of anti-piracy, the ideology of free software, the norm of reciprocity, and the ideology of consumer right on the deontological evaluation of sharing music files in the P2P environment.

## II. Theoretical Background

The Hunt-Vitell model is grounded on the deontological and teleological theories of moral philosophy to describe the decision-making process for situations involving a marketing ethical problem (Hunt and Vitell, 1986). Deontological theories focus on the specific actions or behaviors of an individual while teleological theories focus on the consequences of those actions. The model suggests the ethical decision-making process is initiated by the individual's perception of an ethical problem in a situation, and then the perception of various possible alternatives that might be used to solve the problem. The ethical judgments in this situation are determined by both the deontological and teleological evaluation of the subject. The former

involves a comparison of the various alternatives with a set of predetermined deontological norms that represent the individual's personal values. Teleological evaluation is a function of the perceived consequences of each alternative for various stakeholders, the probability that each consequence will occur to each stakeholder group, the desirability of each consequence, and the importance of each stakeholder.

The model proposes that ethical judgments impact people's behavior through the mediation of their intention. However, moral intention will differ from ethical judgments because the teleological evaluation also independently affects moral intention. Behavior will also differ from moral intention resulted from the situational constraints. The model also suggests cultural, industrial, and organizational environment, and personal experiences as four external constructs that affect the ethical decision processes. After the conduct of behavior, an evaluation of the actual consequences of the chosen alternative will affect an individual's experience, forming an iterative loop of learning in the model.

For the Hunt-Vitell model presents the various philosophical theories that explain a decision maker's ethical judgments and the details of the individual decision-making process, it is widely used in the researches of ethical decision making in marketing (Vitell and Ho, 1997). Vitell et al. (2001) and Vitell (2003) have also suggested that by eliminating the constructs of professional, organizational and industrial environments, the Hunt-Vitell model is the most appropriate model for testing the research questions involving consumer ethics. Consumers' copying or buying unauthorized software is also a major issue in consumer ethics. Previous researches have shown the Hunt-Vitell model can adequately describe the ethical decision-making process involving software piracy (Thong and Yap, 1998). However, researches also found that, probably due to that most people perceive softlifting as causing not much harms to anyone, and the "victims", i.e., the individual software developers or companies, are perceived as far removed from and impersonal to the softlifters (Logsdon et al., 1994; Simpson et al., 1994, Vitell et al., 2001), unauthorized copying of intellectual properties such as software, tapes or movies was not perceived as even being unethical at all (Vitell, 2003).

### III. Research Framework

Because the Hunt-Vitell model is complex, empirical studies usually simplify and test only part of the model (Vitell and Ho, 1997). The deontological norms in the model could range from general beliefs about such things as honesty, stealing, cheating and treating people fairly to issue-specific beliefs about such things as deceptive advertising, product safety, sales "kickbacks," confidentiality of data respondent anonymity and interviewer dishonesty (Hunt and Vitell, 1986). However, prior studies usually simplify the model by including only one set of deontological norms as the

determinant of deontological evaluation. For examples, studies about the information system ethics could use the professional code of conduct such as the ACM as the deontological norms (Thong and Yap, 1998). Therefore, the ethical dilemmas of the conflicts among different norms were not shown in the previous studies, and it implicates the dilemmas of the ethical decision in these studies were primarily caused by the conflict between the deontological evaluation and the teleological one.

But people using a P2P system to share music files with others may face the dilemmas caused by the different norms (Spitz and Hunter, 2003). Siponen and Vartiainen (2004) proposed several approaches for and against the unauthorized copying of software and shows that there are still arguments about this issue. Because most of the music files shared in the P2P networks are copyrighted, sharing them with, or providing them to or even downloading files from others in the P2P network, is very likely a piracy and against the law of intellectual property right (Von Lohmann, 2003). Therefore, for the using of the P2P network to share copyrighted music files with the others, we propose that:

**H1** : *Deontological Evaluation is negatively related to the subject's belief in the norm of anti-piracy.*

On the other hand, there are also some arguments for the sharing of music files in the P2P network. First, the culture of freeware ideology is popular among users of Internet in its early age. Stallman (1995) argues for the importance of freeware in the information age and indicates that enforcing copyright is harming society as a whole. Raymmod (2000) further promotes the open source software and suggests the social status in the age of abundance is determined not by what you control but by what you give away. Gift giving is a way of creating and maintaining relationships of power, and then transforms these relationships to interdependencies based on the idea of reputation (Bergquist and Ljungberg, 2001). The spread of the open source software companies that earn profits by providing services has suggested the feasibility of the open source business model. Information technology should bring the similar revolutionary change in the music industry as well. Instead of selling the compact discs of the music, the musicians and the music companies can earn profits by providing the service of performance and the complementary products based on the reputations they earned (Liebowitz, 2002). Therefore, we define the belief that digital information should be free in the Internet era to maximize the social benefits as the ideology of freeware and propose that:

**H2** : *Deontological Evaluation is positively related to the subject's belief in the ideology of freeware.*

The success of the P2P network lies in its users' being willing to share files with the others. Resources in the P2P environment are analogous to the public goods, and the problem of "free-riding" might prohibit users' intention to share resources with others (Asvanund et al., 2004; Krishnan et al., 2004; Shneidman & Parkes, 2003). The social

exchange theory suggests the norm of reciprocity is probably the prerequisite for users in a P2P network to emerge into a cooperative community to solve the free-riding problem. Blau (1964) stated that the starting mechanism of social interaction and group structure is the need to reciprocate for benefits received in order to keep receiving them. The participant in a P2P network is motivated to contribute valuable resources to the community because of a pre-existing expectation that he/she will receive something

useful in return (Tiwana & Bush, 2000). Nissenbaum (1995) also justifies user's copying software as an act of generosity or kindness to satisfy the need of his/her friend. Providing files to the community may be perceived as necessary and ethical for members in the P2P community. Therefore, we proposed that:

**H3** : *Deontological Evaluation is positively related to the subject's belief in the norm of reciprocity.*

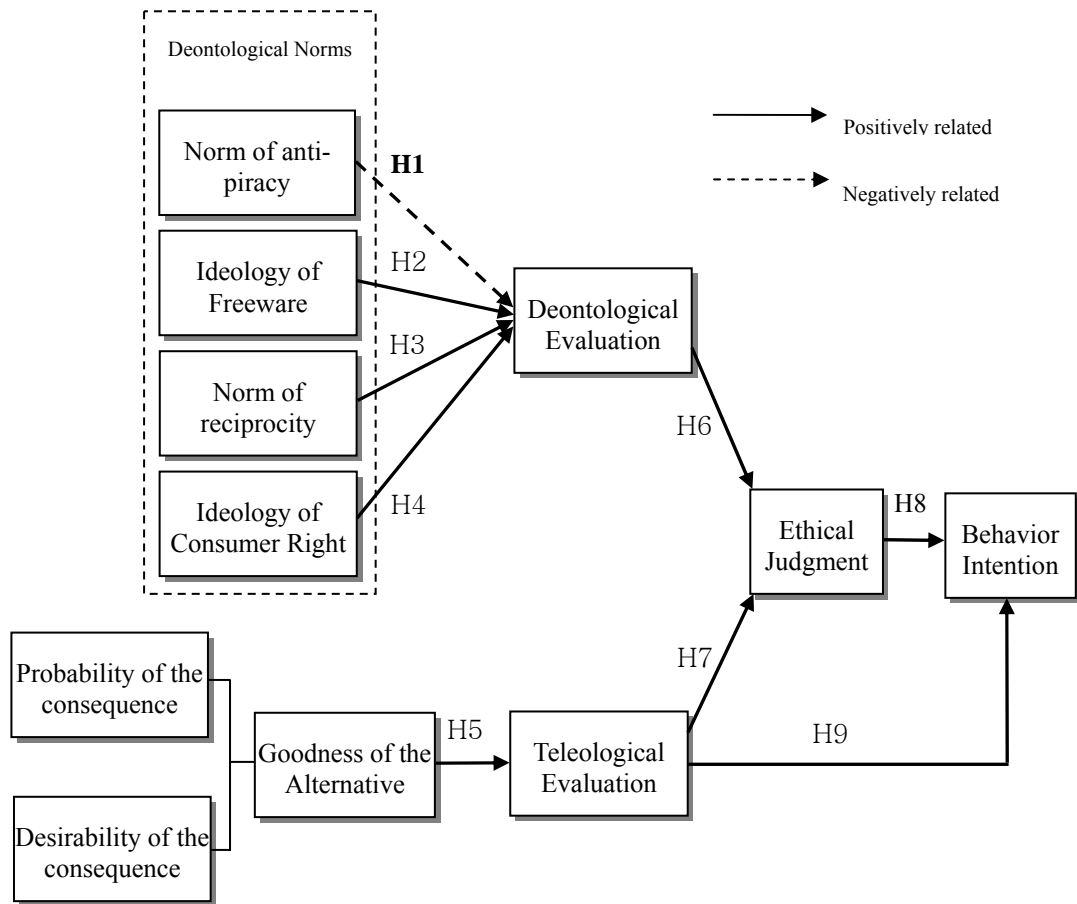


Figure I Research framework

The big music companies today may have earned extra revenue from their nearly oligopoly control of the distribution channel of music. As file sharing using P2P networks has been perceived as the disruptive innovation to the music industry (Krishnan et al., 2003; Spitz and Hunter, 2003), the new technology will changed the distribution channel of music, the structure of the music industry, and even the distribution of revenues of this industry (Clemons

et al., 2002). Consumers can access to the music they like in the Internet instead of buying music CD under the control of the music companies. For example, consumers should have the right to buy just the music they like, instead of having to buy twelve music songs or so bundled in a CD. The musicians can also earn more without the control of the music companies. Besides, because the music is experienced goods, consumers may have to have listened to the music before they can make the decision to buy it. As a result, the distribution of music files in the P2P network may attract

more people to access to and then buy the music (Spitz and Hunter, 2003). The big music companies may, through their oligopoly power, try to defer the diffusion of the new technologies and the emergence of an innovative business model, and hurt the benefits of consumers and even musicians. We defined the ideology of consumer right as a belief about the basic requirements of consumers that have to be satisfied in a fair transaction, and we proposed the hypothesis that:

**H4** : *Deontological Evaluation is positively related to the subject's belief in the ideology of consumer right.*

Previous studies usually simplify the teleological evaluation process in the empirical test of the Hunt-Vitell model. We also simplified the determinants of teleological evaluation by dropping the importance of stakeholders and incorporated the evaluation of stakeholders into the other components. We defined the perceived goodness of an alternative as the summation of the multiplications of the probability of the consequence and the desirability of the consequence for each possible consequences of the alternative. Therefore, we proposed that:

**H5** : *Teleological evaluation is positively related to the subject's perceived goodness of the alternative.*

Finally, the Hunt-Vitell model suggests four core hypotheses that ethical judgment is determined by both the deontological evaluation and teleological evaluation, and moral intention of the behavior is determined by the ethical judgment and teleological evaluation. The hypotheses and research model of this study is shown in figure 1, and these four hypotheses are listed as followed:

**H6** : *Ethical judgment is positively related to the deontological evaluation.*

**H7** : *Ethical judgment is positively related to the teleological evaluation.*

**H8** : *Behavioral intention is positively related to the ethical judgment.*

**H9** : *Behavioral intention is positively related to the teleological evaluation.*

#### IV. Research Method

The research model was tested by a scenario survey as suggested by Hunt and Vitell (1986). Because using P2P system to share music files with others is popular among teenagers, High school and university students were selected as the subjects for the study. The design of the scenario questionnaire is similar to the one used in the previous study (Thong and Yap, 1998). To evaluate whether or not the scenario and the items are understandable to the specified subjects, and the appropriateness of the alternatives and consequences, a pretest was conducted on 34 first-year

junior high school students. Some items and consequences of alternatives were revised according to the interviews with the subjects. Then, a pilot-study was conducted with a convenient sample of 73 junior high school students to evaluate the validity and reliability of the measurements. 62 valid responses were acquired and the measurements of the ideology of freeware and the ideology of consumer right were revised to increase the validity and reliability. The design of the finalized questionnaire was as followed:

**Deontological norms.** The questionnaire begins with the items measure the four deontological norms. Norms of anti-piracy were measured by six items revised from the items used to measure the deontological norms related to softlifting in Thong and Yap (1998). Some items were revised because these items were used to measure the piracy of music instead of software. Scales to measure the ideology of freeware, norm of reciprocity, and the ideology of consumer right were developed in this study by asking the subject if he/she agree with statements related to the norms. All the items mentioned above were measured on a seven-point Likert-type scale. Items measure deontological norms are listed in the appendix A.

**Scenario.** After the items measuring the deontological norms, paragraphs illustrated the details of a popular mode of P2P system were presented. The scenario describe a system of monthly pay of NT\$99 to search for and download files from the other users on this system. Once upon a user installs the software, the system will automatically build a shared folder in his/her hard disk. Files downloaded from the other users will be saved in this shared folder. While connecting to the system, a list of the files stored in this shared folder will be sent automatically to the server, and the other users in the network will be allowed to download files from this shared folder. There is a huge number of music files on the system now.

**Alternatives.** We presented four alternatives for the scenario. First of all, because users may concern about the legal issue of providing copyrighted files to the others in the Internet, they may just download files they like from the network but will not provide files to others. Secondly, some users may feel dutiful to provide the downloaded files to others under the norm of reciprocity, so will keep the downloaded files in the shared folder. Thirdly, except for the second kind of behavior, it is curious that where the original copy of the music files came from. Probably caused by the ideology of freeware on the Internet, some users may copy the music files from elsewhere, or even convert the music from the other format, into the P2P network. Finally, if the users don't care about the piracy, it would be strange why they would pay for using the P2P system. Therefore, we proposed some users might try to use the other free P2P systems or use other people's account such that they don't have to pay for it. As we intended to compare the impacts among different norms, the alternative of not using the system was not included in the study. The alternatives in this study is listed below:

**Alternative 1.** *I would pay to use the P2P software to download the music files from the others, but I would move the file from the shared folder once it is downloaded.*

**Alternative 2.** *I would pay to use the P2P software to download the music files from the others, and I would keep the downloaded files in the shared folder so the others could download the files from my computer.*

**Alternative 3.** *I would pay to use the P2P software to download the music files from the others and keep the downloaded files in the shared folder. Besides, I would also copy the other music files I have into the shared folder to let the others download these files from my computer.*

**Alternative 4.** **I would use the other free P2P system to share music files with the others.**

**Deontological Evaluation.** As in the previous study (Thong and Yap, 1998), deontological evaluations of each alternative were measured by two 7-point Likert scales that asking the subjects if they agree that “Based on my own values, without considering any possible consequences, I think Alternative (1) is very ethical,” and “Based ..., I think Alternative (1) is ethically acceptable.”

**Consequences.** The positive and negative consequences to the stakeholders, including the user him/herself, the music company, the artists, and the other users in the P2P system, under each alternative were identified. Consequence of each alternative were listed in the appendix B. We first measured the subjects’ evaluation of the probability of the consequences for each alternative by asking them to identify the probability on a 11-point scale, from the probability equals to 0 to the probability to 1, 0.1 per interval. After that, we asked the subjects to evaluate how much they desire for each consequence, from very dislike to very like on a 7-point scale.

**Teleological Evaluation and Ethical Judgment.** The measurement of teleological evaluation and ethical judgment were also followed the study of Thong and Yap (1998) by

asking “Based on the possible consequences, I think that Alternative (1) is very ethical,” and “Based ..., I think that Alternative (1) is ethically acceptable” for teleological evaluation, and “Considering both the possible consequences and my own values, I think that Alternative (1) is very ethical,” and “Considering ..., I think that Alternative (1) is ethically acceptable” for ethical judgment. All the measures were in a 7-point Likert scale.

**Behavior Intention.** Behavior intention of each alternative was also measured on a 7-point Likert scale that asking “In the above scenario, Alternative (1) would definitely not be the alternative I would choose,” as was used in Thong and Yap (1998). Finally, we asked the subjects if they feel hard to make decision in the situation, also on a 7-point Likert scale, to measure if the subject perceived he/she were in an ethical dilemma situation.

The actual surveys were conducted in the class of a convenient sample of high school and college students. The subjects were asked to follow the sequences of the questionnaire to answer the questions. Although the subjects were told it’s all right if they don’t want to take part in the study, they still may not be truly voluntary. Therefore, we used an item in the desirability of consequences as a criterion for the valid sample. Respondents with the answer that they would like to be sued for the piracy were judged as invalid. Totally 674 questionnaire were submitted and excluding the incomplete and invalid ones, 453 valid samples were acquired. 253 respondents among the sample had used a P2P system before. 163, 101, and 189 samples were respectively senior high school, junior high school, and university students.

## V. Results

Table 1 shows the results of the deontological evaluation, teleological evaluation, ethical judgment, and behavior intention of each alternative.

**Table 1. Descriptions of the results**

	Mid <sup>a</sup>	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
		Mean	SD <sup>b</sup>	Mean	SD	Mean	SD	Mean	SD
Deontological evaluation	8	9.07	3.16	9.00	2.95	8.66	3.08	8.85	3.33
Teleological evaluation	8	8.54	2.96	8.55	2.66	8.36	2.87	8.43	3.11
Ethical judgment	8	8.60	2.98	8.55	2.67	8.30	2.87	8.29	3.05
Behavior intention	4	4.29	1.65	4.31	1.60	4.27	1.44	4.28	1.46

<sup>a</sup>: Mid value of the scale.

<sup>b</sup>: Standard deviation

All of the means of these variables were a little higher than the middle value of the scale, suggests the subjects may present a neutral but somewhat positive attitude toward these alternatives. Table 1 also shows there were no significant differences of these variables among alternatives.

A principal components analysis with orthogonal rotation by varimax method was conducted to test the construct validity. Table 2 presents the factor structure for the variables of deontological norms. Four factors with eigenvalues larger than one were extracted and the result

shows the data fit well with the predicted factor structure. Table 2 also shows all the Cronbach’s  $\alpha$  of the four deontological norms were larger than 0.7, suggests the reliability of these variables were acceptable. Table 3 presents the Cronbach’s  $\alpha$  of the three variables in the ethical decision processes of each alternative. The results also indicate good reliabilities of these variables.

We used the structure equation modeling with observed variables to test the path structure in this research. Item scores of each construct were summarized to calculate the

observed score of the variable. Table 4 shows the results of the path analysis and hypothesis testing for each alternative. The ideology of consumer right had a significantly positive effect on deontological evaluation of all the alternatives. Hypothesis 4 was supported in this study. On the other hands, the norm of reciprocity didn't influence the deontological evaluation of any alternative. Hypothesis 3 was not supported. People interact with each other to exchange resources in the P2P network. Although there are usually some forums functioned as the space of interaction for the P2P systems (Spitz and Hunter, 2003), the anonymity of computer-mediated-communication may reduce the impacts of the norms of P2P community because the anonymity would decrease the social presence (Short et al., 1976), or reduce the social cues conveyed in the social interaction (Kiesler et al., 1984; Rutter, 1984).

The impacts of the norm of anti-piracy and the ideology of freeware were different among alternatives. The ideology of freeware significantly affected the deontological evaluation in alternative 3. This result suggests the ideology of freeware could explain where the original copy of the files came from and why there was some people copying files from elsewhere or transferring files from the other format. The ideology of freeware also affected the deontological evaluation in alternative 4, indicates that people with the ideology of freeware would try to use a free P2P system. However, it is interesting to note that the norm of anti-piracy affected deontological evaluation only in the alternative 4. In other words, people who had paid for using the system seem to care less about the piracy issue. This is probably due to that they suppose that, since they have paid for the benefits they get, piracy is only a problem between the P2P and the music companies. This may explain why although there are some free or opensource P2P systems, the systems with charge are still popular among users.

The hypothesis 5, 6, and 7 were all supported in the study. The subject's perceived goodness of the alternative measured by the proposed had a significantly positive influence on the teleological evaluation. The ethical judgment was affected both by the deontological and teleological evaluation. However, the impacts of the teleological evaluation were larger than the impacts of the deontological evaluation in all of the four alternatives. Finally, this study found that the subjects' intention to download files but not provide files to the others, and the intention to use free P2P systems were primarily influenced by the teleological evaluation but not the ethical judgment. On the other hand, the subjects' intention to provide the files they downloaded from the P2P network to the others was influenced by the ethical judgment, and the intention to look for or transfer files from elsewhere was influenced by both the ethical judgment and teleological evaluation.

## VI. Conclusion

Copying and distribution of digital files in the Internet have brought great threats to the music industry. This study tested

the Hunt-Vitell model to understand users' ethical decision about copying unauthorized music files in the P2P network. The results show that the deontological evaluations are influenced by the ideology of consumer right for all alternatives, and by the ideology of freeware and the norms of anti-piracy for some alternatives, but are not affected by the norms of reciprocity. However, results of this study should be explained carefully. The Hunt-Vitell model does not describe well the way that people in the real world make ethical judgments (Cole et al., 2000). The model suggests that when behavior and intentions are inconsistent with ethical judgments, one of the consequences will be the feel of guilt (Hunt and Vitell, 1986).

But the work of Strutton et al. (1994) indicates that even normally ethical consumers can easily rationalize unethical behaviors by appealing to the techniques of neutralization (Vitell, 2003). The impacts of the deontological norms found in the study may be just the rationalized attribution after the decision has been made, instead of the factors affect the decision processes.

The above findings have implications for the music companies. Since consumers can easily rationalize their behavior by the norms such as the ideology of consumer and the ideology of freeware to reduce the feeling of guilt while copying files from the Internet, just proclaim the intellectual property rights and the norm of anti-piracy would be of little use for diminishing the unauthorized copying. Besides, the study found that people might not concern about the piracy issue when they have paid for using the P2P system. The popularity of the charging P2P system may suggest that people would like to pay something to reduce their guilty feeling about copying files. The success of iTunes may firmly support the above idea. Therefore, companies should try their best to apply and realize the benefits of the new technology to increase their consumers' welfare, instead of waiting and resisting the change and just declaring their rights and imposing the quilt of piracy upon their customers. Consumers may be more willing to respect the intellectual property rights of the companies if these companies make every endeavor to increase their consumers' benefits.

## VII. Appendix

The appendixes are not included because of the limits of space. The appendixes are available upon request to the first author.

## References

- [1] Asvanund, A., Clay, K., Krishnan, R. and Smith, M. D., "An empirical analysis of network externalities in peer-to-peer music sharing networks," *Information Systems Research*, 2004, 15(2), 155-174.
- [2] Bergquist, M. and Ljungberg, J., "The power of gifts: organizing social relationships in open source communities," *Information Systems Journal*, 2001, 11(4), 305-320.
- [3] Blau, P. M., 1964, *Exchange and power in social life*, NY: John Wiley and Sons, 1964.
- [4] Clemons, E. K., Gu, B. and Lang, K. R., "Newly vulnerable markets in

- an age of pure information products: An analysis of online music and online news," *Journal of Management Information Systems*, 2002, 19(3), 417-441.
- [5] Cole, D., Sirgy, M. J. and Bird, M. M., "How do managers make teleological evaluations in ethical dilemmas? Testing part of and extending the hunt-vitell model," *Journal of Business Ethics*, 2000, 26(3), 259-269.
- [6] Hunt, S. D. and Vitell, S. J., "A general theory of market ethics," *Journal of Macromarketing*, 1986, 6, 5-16.
- [7] Kiesler, S., Siegel, J. and McGuire, T. W., "Social psychological aspects of computer mediated communication," *American Psychologist*, 1984, 39, 1123-1134.
- [8] Krishnan, R., Smith, M. D. and Telang, R., "The economics of peer-to-peer networks," *Journal on Information Technology Theory and Applications*, 2003, 5(3), 31-44.
- [9] Krishnan, R., Smith, M. D., Tang, Z. and Telang, R., "The impact of free-riding on peer-to-peer networks," *Proceedings of the 37th Hawaii International Conference on System Science (CD-ROM)*, Hawaii, USA, 2004.
- [10] Lessig, L., *The future of ideas*, NY: Vintage Books, 2002.
- [11] Liebowitz, S., *Re-thinking the network economy: The true forces that drive the digital marketplace*, NY: Amacom, 2002.
- [12] Logsdon, J. M., Thompson, J. K. and Reid, R. A., "Software piracy: Is it related to level of moral judgment?" *Journal of Business Ethics*, 1994, 13(11), 849-857.
- [13] Mason, R. O., "Four ethical issues of the information age," *MIS Quarterly*, 1986, 10(1), 5-12.
- [14] Nissenbaum, H., "Should i copy my neighbor's software?" in D. G. Johnson and H. Nissenbaum (eds.), *Ethics and social values*, NJ: Prentice Hall, 1995, 201-213.
- [15] Raymond, E. S., "Homesteading the noosphere," in *The cathedral and the bazaar: musings on linux and open source by an accidental revolutionary*, CA: Sebastopol, O'Reilly and Associates, 2000, <http://www.catb.org/~esr/writings/cathedral-bazaar>
- [16] Rutter, D. R., *Looking and seeing: the role of visual communication in social interaction*, 1984, Chichester: Wiley, UK.
- [17] Shneidman, J. and Parkes, D. C., "Rationality and Self-Interest in Peer to Peer Networks," in F. Kaashoek and I. Stoica (eds.), *Peer-to-Peer System II: Second International Workshop (IPTPS 2003, LNCS 2735, Springer)*, 2003, 139-148.
- [18] Short, J. A., William, E. and Christie, B., *The social psychology of telecommunication*, 1976, (Chichester: Wiley, UK).
- [19] Simpson, P. M., Banerjee, D. and Simpson, C. L., "Softlifting: A model of motivating factors," *Journal of Business Ethics*, 1994, 13(6), 431-438.
- [20] Siponen, M. and Vartianen, T., "Unauthorized copying of software and levels of moral development: A literature analysis and its implications for research and practice," *Information Systems Journal*, 2004, 14, 387-407.
- [21] Spitz, D. and Hunter, S., "The social construction of napster," MIT Sloan Working Paper No. 4445-03, 2003, <http://ssrn.com/abstract=469283>
- [22] Stallman, R., "Why software should be free," in D. G. Johnson and H. Nissenbaum (eds.), *Ethics and Social Values*, NJ: Prentice Hall, 1995, 168-181.
- [23] Strutton, D., Vitell, S. J. and Pelton, L. E., "How consumers may justify inappropriate behavior in market settings: An application on the techniques of neutralization," *Journal of Business Research*, 1994, 30, 253-260.
- [24] Thong, J. Y. and Yap, C., "Testing an ethical decision-making theory: The case of softlifting," *Journal of Management Information Systems*, 1998, 15(1), 213-237.
- [25] Tiwana, A. and Bush, A., "Peer-to-Peer valuation as a mechanism for reinforcing active learning in virtual communities: Actualizing social exchange theory," *Proceedings of the 33rd Hawaii International Conference on System Sciences (CD-ROM)*, Hawaii, USA, 2000.
- [26] Vitell, S. J., "Consumer Ethics Research: Review, synthesis and suggestions for the future," *Journal of Business Ethics*, 2003, 43(1/2), 33-47.
- [27] Vitell, S. J. and Ho, F. N., "Ethical decision making in marketing: A synthesis and evaluation of scales measuring the various components of decision making in ethical situations," *Journal of Business Ethics*, 1997, 16(7), 699-717.
- [28] Vitell, S. J., Singhapakdi, A. and Thomas, J., "Consumer ethics: An application and empirical testing of the Hunt-Vitell theory of ethics," *Journal of Consumer Marketing*, 2001, 18(2), 153-178.
- [29] Von Lohmann, F., "Peer-to-Peer file sharing and copyright law: A primer for developers," in F. Kaashoek & I. Stoica (eds.), *Peer-to-Peer System II: Second International Workshop (IPTPS 2003, LNCS 2735, Springer)*, 2003, 108-117.

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**Table 2. Factor structure for deontological norms**

	Component				$\alpha$
	1	2	3	4 <sup>a</sup>	
Anti-piracy1	<b>.67</b>				.81
Anti-piracy2	<b>.72</b>				
Anti-piracy3	<b>.72</b>				
Anti-piracy4	<b>.69</b>				
Anti-piracy5	<b>.76</b>				
Anti-piracy6	<b>.67</b>				
Freeware7	<sup>b</sup>		<b>.54</b>		.80
Freeware8			<b>.76</b>		
Freeware9			<b>.71</b>		
Freeware10			<b>.68</b>		
Freeware11			<b>.60</b>		
Freeware12			<b>.65</b>		
Freeware13			<b>.55</b>		
Reciprocity14				<b>.68</b>	.72
Reciprocity15			-	<b>.79</b>	
Reciprocity16			-	<b>.76</b>	
Consumer-right17		<b>.60</b>			.83
Consumer-right18		<b>.66</b>			
Consumer-right19		<b>.75</b>			
Consumer-right120		<b>.82</b>			
Consumer-right21		<b>.61</b>			
Consumer-right22		<b>.74</b>			

<sup>a</sup>: Cumulative explained variance: 54.39%

<sup>b</sup>: Suppress absolute values < 0.4

**Table 3. Cronbach's  $\alpha$ s for the constructs**

Constructs	Alternative			
	1	2	3	4
Deontological evaluation	.82	.88	.87	.90
Teleological evaluation	.77	.78	.82	.82
Ethical judgment	.81	.82	.83	.83

**Table 4. Summary of the hypothesis tests**

Hypothesis	Alternative			
	1	2	3	4
H1	.08 <sup>a</sup>	-.04	-.06	-.12**
H2	.02	.08	.10*	.19**
H3	.07	.06	.04	.04
H4	.22**	.32**	.30**	.23*
H5	.15**	.34**	.40**	.39**
H6	.14**	.13**	.09**	.10**
H7	.75**	.77**	.82**	.79**
H8	.10	.32**	.16*	.12
H9	.24**	.12	.18*	.33**

<sup>a</sup> Standardized coefficient

\*\*  $p < 0.01$ ; \*  $p < 0.05$