

Chapter 28

CRIMINAL REGULATION OF ANTI-FORENSIC TOOLS IN JAPAN

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Abstract This paper discusses the continuing landmark debate in a Japanese Court concerning the development and distribution of a peer-to-peer (P2P) file sharing program. The program, known as Winny, facilitates illegal activities such as piracy and the distribution of child pornography because of the encryption and anonymity afforded to users. The court has to determine whether Isamu Kaneko, the designer of Winny, is criminally liable for developing and distributing the program. This paper also assesses whether the judgment in the Winny case might set a precedent for regulating the creation and distribution of anti-forensic tools.

Keywords: Anti-forensic tools, peer-to-peer networks, legal issues

1. Introduction

Digital forensics is the application of computer investigation and analysis techniques to gather and assess digital evidence for use in legal proceedings. By encrypting and eliminating data before it can be seized, so-called “anti-forensic tools” hinder the course of justice and prevent the successful prosecution of criminals. As a result, these tools can be seen to be encouraging the perpetration of digital crimes. The key issue, therefore, is whether or not the development and distribution of anti-forensic tools should be made illegal.

Articles 2 through 5 of the Council of Europe’s Convention on Cyber Crime (2001) proscribe offenses against the confidentiality, integrity and availability of computer data. Article 6 prohibits using a tool to commit such an offense, but the Convention does not specifically address the development and distribution of anti-forensic tools. The Convention states that it is permissible to punish the user of a tool if it is used to

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commit an illegal activity like erasing evidence. But the Winny case requires the court to decide whether such recourse can be extended to developing and distributing such a tool over the Internet.

This paper presents the legal issues being debated in the case. Also, it evaluates the prospect of regulations being introduced in Japan that proscribe the use of anti-forensic tools.

2. The Winny Case

On May 10, 2004, Isamu Kaneko, a research associate at the Graduate School of Information Science and Technology, University of Tokyo, was arrested. Kaneko had developed and distributed the peer-to-peer (P2P) file sharing program, Winny, on the Internet. Many technical experts and analysts raised concerns about the effect his arrest could have on the right to Internet privacy and the future development of P2P technology. Kaneko was charged with aiding and abetting the sharing of copyrighted material by two Japanese users of Winny, a 19-year-old man in Matsuyama and 41-year-old man in Gumma. The former used Winny to illegally share copies of gaming software; the later illegally shared copies of movies. The Kyoto District Court [4] found that the two principals had violated the public transmitting rights of the copyright holders. They were charged and found guilty under clauses 96bis and 119, Article 23, of the Japanese Copyright Act:

- Article 23: Rights of Public Transmission
 - (i) The author shall have the exclusive right to publicly transmit his work (including the “making transmittable” of his work, in the case of interactive transmission media).
 - (ii) The author shall have the exclusive right to communicate publicly, by means of a receiving apparatus, his work from which the public transmission has been made.
- Article 96bis: Right of Making Transmittable
Producers of phonograms shall have the exclusive right to make their phonograms transmittable.
- Article 119: Right of Making Transmittable
The following shall be punishable by imprisonment for a term not exceeding five years or a fine not exceeding five million Yen, or both:
 - (i) Any person who infringes the moral rights of authors, copyright, right of publication, moral rights of performers or neighboring rights (excluding those who reproduce by themselves

works or performances, etc. for the purpose of private use as mentioned in Article 30, paragraph 1 (including the case where its application *mutatis mutandis* is provided for under the provision of Article 102, paragraph 1), those who do an act considered to constitute an infringement on the moral rights of authors, copyright, moral rights of performers or neighboring rights (including the rights considered as neighboring rights in accordance with the provisions of Article 113, paragraph 4; the same shall apply in Article 120bis, item (iii)) under the provisions of Article 113, paragraph 3, or those who do an act considered to constitute an infringement on copyright or neighboring rights under the provisions of Article 113, paragraph 5.

- (ii) Any person who, for profit-making purposes, causes others to use automatic reproducing machines mentioned in Article 30, paragraph 1, item (i) for such reproduction of works or performances, etc. as constitutes an infringement on copyright, right of publication or neighboring rights.

In the following, we discuss relevant details about the Winny system and its development [3].

Kaneko developed Winny because he was inspired by “Share,” a P2P software program that is server-independent. Winny builds a virtual proxy cache server, which allows its users to download large files (e.g., movies or games) in an anonymous manner. Furthermore, Winny caches many files when it is activated, but the file names and the contents of the cached files are encrypted, which further supports anonymity. Consequently, Winny users are unaware if the contents of their files are lawful or not; this feature facilitates the sharing of unlawful files. Moreover, because Winny builds a virtual cache server and stores the encrypted files in it, it is not possible to delete a file once it is uploaded or to trace the individual who originally uploaded the file. Even if the original uploader deletes the original file from his hard drive, a copy of the file remains on the Winny system.

The development and the user acceptance testing of Winny was discussed on *2 channel*, a popular bulletin board. The defendant, Kaneko, enthusiastically participated in the discussion of the thread, “What comes after MX,” and he developed Winny in compliance with the wishes of other thread discussants who wanted to share unlawful files. MX refers to the WinMX file sharing program and “WinNY” was named to illustrate its evolutionary advancement (the letter N follows M, and Y follows X). At the time, WinMX users sharing illegal material and copyrighted

files were worried about being prosecuted because the authorities could easily detect who had uploaded the original files onto the WinMX network. Several users had, in fact, already been charged, and illegal file sharers were very keen to achieve complete anonymity. This became the acknowledged purpose of developing Winny. It seems highly unlikely, given the discussion on the bulletin board, that Kaneko did not know that the anonymity provided by Winny would aid and abet unlawful file sharing.

3. Legal Issues

This section discusses key legal issues related to Japanese criminal law.

3.1 Aiding and Abetting

Articles 62 and 63 of the Japanese Penal Code [1], which were established in 1907, state:

- Article 62: Accessory
 - (1) Any person who aids and abets a principal is an accessory.
 - (2) Any solicitant of an accessory shall be penalized as an accessory.
- Article 63: Penalties for Accessory

Any person who aids and abets shall be penalized by mitigating the one for the principal.

Under Japanese law, “aiding” means to offer physical assistance, while “abetting” means to offer mental assistance. Aiding and/or abetting are deemed to have occurred when such actions assist a principal to carry out a criminal activity. It is also necessary that the assisting party’s actions are found to be intentional.

To be deemed an accessory, a causal relationship between the conduct of the principal and the assistance of the accessory must be shown. According to commonly accepted theory, the causal relationship for an accessory is not the level of *conditio sine qua non*, which is required for the principal. Finding that the principal’s conduct was aided physically and/or mentally by the accessory satisfies the causal relationship requirement. Whether the accessory’s action made the conduct of the principal easier is the decisive factor. For example, mental assistance could include an accessory telling the principal that he will take care of the principal’s family while he is in prison. Physical assistance could include an accessory giving the principal a gun for a bank robbery, even though the principal used his own gun to commit the crime. Although the principal could have committed the robbery without the borrowed

gun, the gun's owner still became an accessory the moment the principal decided to commit the robbery because the accessory's assistance is likely to have encouraged his course of action.

The "degree of strengthening" is also requirement. If an accessory lent a cap to a murderer, for example, the assistance provided would not be strong enough to be considered abetting. Legal precedents suggest that a causal relationship exists when the criminal conduct of the principal and/or its result would not have been assisted without the accessory's action. Court judgments of "cause and effect of an assistance" have relied on the same interpretation.

Based on our understanding of Japanese law, should the court adjudge the development and distribution of Winny as aiding and abetting piracy? One aspect of this case makes the issue more complicated. The prosecutor argued that, not only did the development and distribution of Winny constitute a crime, but the user acceptance testing also constituted a crime because the 2 *channel* users clearly wanted to share unlawful files anonymously, without fear of arrest. Indeed, the defendant enhanced the anonymity provided by Winny precisely for this purpose. Winny aids piracy "physically" by making anonymity possible, and it abets the conduct of principals "mentally" by ensuring anonymity. Therefore, the court is likely to hold that the development and the distribution of Winny aided and abetted the principals' conduct.

3.2 Accessory with Neutral Conduct

There is also the issue of being an accessory, but with "neutral," "normal" or "usual" conduct in both Japanese law and its mother law (German criminal law). The issue is whether the development and distribution of Winny should be categorized as assistance because what Winny performs "is an action of neutral position." One analyst observed that Winny is just a file sharing system—a tool of neutral position; consequently, the distribution of a neutral tool does not constitute a crime. The neutral position argument holds that a tool is neutral until appropriated by an agent. For example, even if a knife was used to commit murder, the knife manufacturer and seller should not be considered to be accessories to murder. However, this is a circular argument. In reality, it merely helps to identify certain situations within which a tool could be categorized as "neutral." In other words, denying the assistance lent by a tool requires the positive refutation of either of the requirements applied to the assistance.

According to commonly accepted criminal law theory [6], the finding of accessory depends on whether a tool furnished the principal with a

particular function or capability with reference to the specific offense. The following explanation, presented by Jakobs [2], has been well established and is a commonly accepted interpretation. Jakobs uses the case of a baker who sells bread to a customer who plans to use the bread to poison someone. According to Jakobs, by selling "normal" bread to the customer, the baker did not participate in the murder perpetrated by the customer; accordingly, the baker is not an accessory for selling the bread. However, if the baker knowingly sold "special" bread, which helped the customer to conceal poison, then the baker should be found to be an accessory to the murder.

Nishida [5] explains:

"A cooking material shopkeeper sold a knife to his customer. He was afraid that the customer might commit a murder using the knife and the tragedy actually happened. However, the anxiety of the shopkeeper remains a vague uncertainty; therefore, he should not be found to be an accessory. On the contrary, if two people were fighting in front of the shop, and one ran into the shop to buy a knife and used it to kill the other, then the shopkeeper could be found to be an accessory."

Therefore, while there is a freedom to sell bread, the freedom to sell special bread that makes poisoning easy is not guaranteed. This should apply equally to the development of novel computer and network systems. There should definitely be the freedom to make new systems, but not systems that make specific crimes easier to commit.

It is important to attempt to establish an objective standard for deciding whether or not an individual is guilty of being an accessory. Although a comprehensive examination of this complex legal issue is beyond the scope of this paper, we can apply the basic legal position stated above: if a person knows it is highly probable that his/her conduct will assist the principal in the commission of a specific crime, that person can be considered an accessory to the crime.

In the case of Winny, the file sharing program physically aided the principals and mentally abetted them. The program's file sharing capabilities enabled the principals to physically commit their crimes. Its encryption and guaranteed anonymity encouraged the principals mentally because these features eliminated their fear of arrest.

Another, broader, interpretation can be made using the following legal principle: If the conduct of the accessory had not been made, would the principals have committed the offense? In the Winny case, it is reasonable to suggest that the principals would not have violated copyright law had Winny not provided a safe means to do so. Also, Kaneko's action of distributing Winny free of charge was more directly connected to the crime than just providing a cap to a principal before he or she committed the crime.

3.3 *Mens Rea*: Mental Requirement

Another interesting feature in the Winny case is that Kaneko, the defendant and designer of Winny, did not know the two principals. Normally, a person deemed to be an accessory knows the principal and, in most cases, the unlawful action the principal intended to commit; however, Kaneko did not. While Kaneko might have expected someone would commit the criminal act of piracy, he merely posted his program on the Internet as free software. In this situation, can we identify Kaneko's *mens rea* to charge him as an accessory to the principals' acts of piracy?

Under Japanese criminal law, it is enough that a person is aware of the range of possible danger his or her actions could create. Drawing attention to Kaneko's participation in the "What comes after WinMX" discussions on *2 channel*, and his expressed intentions to create the software, the prosecutor was able to argue that the principals' acts of piracy should be considered as being within the range. Therefore, Kaneko's development and distribution of Winny was a deliberate, intentional act.

4. Prospects for Anti-Forensic Tools

Winny incorporates excellent file sharing and encryption technologies; the resulting anonymity enables criminals to share unlawful data with little fear of arrest. Moreover, once a file is uploaded to Winny's virtual server for sharing, it is not possible to delete the file. In this sense, Winny is like Janus, the Roman god with two faces, one looking forward and one behind. Winny's front face demonstrates technological artistry, but the one behind is a tool for assisting criminal activity.

Some individuals argue that the successful prosecution of Winny's developer will stifle technological advances. They suggest that the steady evolution of Internet technology requires an environment of freedom, where researchers can explore uncharted territory without fear of reprisal or liability. However, such an approach is likely to prove more destructive and repressive in the long run. Reckless development can result in increasingly draconian legislative measures, resulting in a worse, highly policed environment for technological development.

This analysis applies across the board, and specifically covers malicious programs such as worms, viruses and spam. These programs are costly and destructive, and exemplify why technology should be bound by the same legal and ethical frameworks as other societal endeavors. At this time, the Japanese penal code has no explicit statutory provisions for tools capable of destroying digital evidence. However, the general principles of Japanese criminal law would indicate that the development

and distribution of anti-forensic tools should be regulated using the laws that proscribe the aiding and abetting of criminal activity. If the Winny case is applied to anti-forensic tools, in general, it should encourage developers to restrict and monitor the use of their tools and to attempt to ensure that they are not used with criminal intent.

5. Conclusions

The first public trial session in the Winny case was held on September 1, 2004. Due to the complexity of the case, the trial is still continuing (the 21st session ended on March 20, 2006). However, the Kyoto District Court can be expected to draw similar conclusions as those outlined in this paper. Kaneko's offense is that he was fully aware of the risk Winny presented, but did not take any measures to counter or reduce the danger before distributing Winny. This is likely to set the legal precedent that any designer of a computer program that could be used for criminal purposes, or a designer who is aware that the program is at risk of being used in a crime, should control the program and prevent it from being used for criminal purposes. Failure to do so could result in the designer of the program being charged as an accessory to the crime.

References

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