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Intellectual Property and Antitrust

**Digital Rights Management:
An Antitrust Analysis**

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I. An Introduction to Digital Rights Management

A. Digital Rights Management Explained

1. Historical Introduction

The need to control the copying of content in digital form became crucial with the democratization of the Internet. Indeed, before the apparition of worldwide networks, software and digital content vendors merely used product keys or sometimes dongles (a physical device to attach to one of the computer's ports in order to start the software) to protect their products from being copied.

With the rise of the Internet, as it became unnecessary to actually copy the medium to get its contents, software vendors started using encryption in order to control access to their digital files. In 1995, IBM created InfoMarket, known to be the first commercial digital rights management system.¹ IBM's technology used encryption to keep content inaccessible to those who didn't pay for it, and enabled paying customers to create marketplaces on the Web for the content.

In 1996, Mark Stefik published a paper entitled "Letting Loose the Light: Igniting Commerce in Electronic Publication,"² defining the core notion of *rights model*: content publishers have to define a set of allowed behaviors regarding their data in order to efficiently enforce their intellectual property rights, by using a programming language for expressing, allocating and valuing rights to content.

¹ More information about InfoMarket can be found at:
<http://folk.uio.no/gisle/overload/infomarket.html>

² *Internet Dreams: Archetypes, Myths, and Metaphors*, M. STEFIK, The MIT Press, 1996.

In the years that followed, the fast development of online file-sharing platforms over the Internet changed what was an opportunity for digital content vendors – the opportunity to monitor and control the circulation of their products – into a necessity. From its origins in mere file protection, digital rights management has become an essential, if not central, part of any business model involving digital contents.

2. The Technology Behind Digital Rights Management

All digital rights management systems are based on a specific rights model. According to Bill Rosenblatt, rights models are about “*Representing rights as bits.*”³ That is, in practice, defining what types of rights are offered to the user, and under which conditions.

The fundamental types of rights were listed by Mark Stefik: render rights, transport rights, and derivative work rights. Render rights involve printing, viewing or playing the protected content; transport rights encompass the action to copy, move or loan the content; and derivative work rights deal with the extraction, edition or embedding of the content.

Each right provided by the model comes with attributes: most importantly consideration, extents, and types of users. Once these three basic attributes are defined regarding each fundamental right over the content, the rights model is technically defined.

³ *Digital Rights Management Business and Technology*, B. ROSENBLATT, B. TRIPPE, S. MOONEY, M&T Books, 2002.

The next step is then to enforce this rights model. This is done by the means of a *license server*, placed between the content server (which stores and *watermarks*⁴ the protected content) and the client. The license server operates the rights model by storing the encryption keys and identities of the allowed clients and by generating licenses to those clients. Once a license is generated, the client on the user's computer can decipher the content and exercise the rights provided by the DRM system.

In practice, this architecture allows to control not only the distribution of content but, more importantly, the use of that content. In the case of an online music store, for example, the vendor is given the ability to make the customer pay for the music and to manage and organize payment as it wishes, but also to limit the number of times the purchased song can be played, on how many different computers the customer can play the song, how many times she can burn it on a CD or copy it to a portable device, etc.

3. Business Models Based on Digital Rights Management

The first and most straightforward business model based on DRM is the paid download. Originally, the paid download business model was used without any DRM system. Qpass⁵, for example, provides many American newspapers⁶ with a paid

⁴ "Watermarks" are digital identifications inserted into digital copies of works. For more information on watermarking, read "DRM as an Enabler of Business Models", L. S. SOBEL, available at <https://www.law.berkeley.edu/institutes/bclt/drm/papers/sobel-drm-btlj2003.html>

⁵ <http://www.qpass.com/>

⁶ Among Qpass's clients are the *New York Times*, the *Los Angeles Times*, the *Wall Street Journal*, or *USA Today*.

download service that does not rely on any digital rights management system, so that the purchaser of an archived article can copy, print, edit, etc. her download as she wishes.

In the music industry, DRM systems are made necessary by the high risk of unauthorized copying and the loss it generates. Business models based on paid downloads and DRM systems were somehow unsuccessful when they first appeared on the Internet, for three basic reasons, according to Bill Rosenblatt⁷: *“It’s complex to purchase the content; It’s even more complex to use the DRM technology; People are not comfortable reading books or listening to music on their PCs or Macs.”* The leading paid download service now available, Apple’s iTunes Music Store⁸, managed to solve these issues by merging the three elements into one platform: the same software is used to purchase, play the music and copy it onto Apple’s best-seller portable music player, the iPod.

In a subscription model, the customer does not purchase each download individually, but rather pays a set fee – usually monthly or annual – in order to receive copyrighted information on a regular basis, or to be allowed to download a certain amount of that information. Keeping the example of music industry, iTunes’ main competitor, the Napster To Go service⁹, is based on an “all you can eat” subscription. In this business model, digital rights management allows the vendor to withdraw all render rights when the customer stops paying the fee.

Paid download and subscription are the two main models as far as online distribution of multimedia content is concerned. But content can also be distributed

⁷ *Digital Rights Management Business and Technology*, op. cit.

⁸ <http://www.apple.com/itunes/store/>

⁹ <http://www.napster.com/ntg.html>

through pay-per-view (the data can only be read once), usage metering (pricing is based on the number and “metering” of usages, similarly to gas, electricity or telephone), or peer-to-peer (contents circulate from purchaser to purchaser, while the DRM system ensures that each new downloader purchases the rights) business models.

B. Copyright Issues

1. Fair Use

Under 17 U.S.C. 107, “*the fair use of a copyrighted work [...] is not an infringement of copyright.*” A multi-factor balancing test is used to determine what is fair use, take into consideration the purpose and character of the use (whether it is commercial or noncommercial), the nature of the work, the amount and substantiality of the portion of the work used, and the effect upon the potential market for the work.

Fair use serves a crucial role in limiting the reach of what would otherwise be an intolerably expansive grant of rights to copyright owners. According to Fred von Lohmann, Senior Intellectual Property Attorney at the Electronic Frontier Foundation¹⁰, “*f they are to preserve fair use in its traditional form, DRM technologies must leave room for these unauthorized uses of copyrighted works, as well as myriad other commonplace uses that have not been tested in court.*” Indeed, as we have seen in part (A), the main purpose of having a DRM system is copy protection. As a result, a successful DRM technology will be definition technically prohibit any fair use of the copyrighted work it protects.

¹⁰ “Fair Use and DRM: Preliminary Thoughts on the Tension Between Them,” F. V. LOHMANN, published at http://www.eff.org/IP/DRM/fair_use_and_drm.html

Because of the ambiguity and the lack of a precise definition of fair use, a certain use can only be deemed “fair” under copyright law once a court has ruled on the issue. But if a DRM system prohibits the average user from actually copying the content, the use in question is in fact impossible to accomplish. Thus, digital rights management provides content vendors with an *ex ante* copyright protection.

In Mr. Lohmann’s opinion¹¹, “*wherever an activity has been deemed a fair use (and often even before, so long as a company is willing to gamble that it will be deemed a fair use), innovation flowers as technology companies help the public to make the most of copyrighted works. Examples include the photocopier, the audio cassette deck, the CD-RW drive, the web browser, among others.*” It appears clearly that an excessive use of DRM technologies represent a threat to innovation, and therefore to competition.

2. The Digital Millennium Copyright Act

Section 1201 of the DMCA includes an anti-circumvention provision that prohibits making or selling devices that “*are primarily designed or produced to circumvent technological measures to protect copyrights; have only limited commercial significant purpose or use other than this kind of circumvention; are marketed for such circumvention.*”

The effect of this provision is therefore to prohibit the circumvention of a DRM system. Exceptions are rare and narrow, and deal with nonprofit libraries and educational institutions, testing purposes (with the permission of the system’s owner), research and

¹¹ Ibid.

“reverse engineering a copy protection scheme as part of an effort to build a system that interoperates with the system that contains a copy protection scheme.” As a result, if the vendor refuses permission, “cracking” the encryption on which the DRM system is based falls into the scope of the anti-circumvention provision.

3. The First Sale Doctrine

The first-sale doctrine is an exception to copyright codified in the US Copyright Act, section 109. The doctrine of first sale allows the purchaser to transfer (i.e. sell, rent, or give away) a particular, legally acquired copy of protected work without permission once it has been obtained. That means the distribution rights of a copyright holder end on that particular copy once the copy is sold.

Case law supports that consumers cannot make copies of computer programs contrary to a license, but may resell what they own.¹² This however is conflicting with both sections 117 and 109, and the case law itself is conflicting depending on which circuit the case was heard in.¹³

The gradual shift from transactions governed by copyright law to those governed by licenses enforced by DRM technologies tend to alter the balance of rights between copyright owners and users, as these transactions supersede the limits of fair use and the

¹² *SoftMan Products Company, LLC v. Adobe Systems Inc., et al.*, 171 F. Supp.2d 1075; 2001 U.S. Dist. LEXIS 17723; 45 U.C.C. Rep. Serv. 2d (Callaghan) 945

¹³ The licensed and not sold argument is held mostly in the 8th and 7th circuits while other circuits tend to support the opposite, thus leading to conflicting court opinions such as seen in the third circuit *Step-Saver Data Systems, Inc. v. Wyse Technology* and 5th circuit *Vault Corp. v. Quaid Software* as opposed to the 8th circuit *Blizzard v. BNETD (Davidson & Associates v. Internet Gateway Inc (2004))*, which have not been resolved by higher courts.

first sale doctrine, with DRM technologies enforcing them without recourse to the legal system. DRM systems can also be used to protect materials not covered by copyright, either because of expiration or simply by nature.

II. A Theoretical Approach

A. Economic Analysis

1. Digital Rights Management and Profit Maximization

According to Paul Petrick,¹⁴ “*utilization of DRM technology would foster price discrimination.*” Indeed, implementing DRM technology is likely to allow content producers to design multiple pricing schemes, for different types of uses of the same product, as every combination of rights and attributes in the rights model can constitute an individual offer.

Digital rights management therefore allows pooling its implementation costs among the many variations of a rights model. Even if surplus might decline due to the initial implementation costs, the content producer’s profits might increase.

Regarding transactional costs, the automation of payment allowed by DRM technologies leads to an important decrease. In fact, DRM-specific transactional costs might even be included in implementation costs.

¹⁴ “Why DRM Should be Cause for Concern: An Economic and Legal Analysis of the Effect of Digital Technology on the Music Industry”, P. PETRICK, *Berkman Center for Internet & Society at Harvard Law School Research Publication* No. 2004-09

2. Effect on Competition

DRM systems can only promote competition if they stimulate entry into the market. However, the main purpose of DRM remains control over content and the use of content. Intellectual property rights provide those who hold them with a monopoly, and digital rights management specifically aim at enforcing such a monopoly. The first benefit most content producers see in digital rights management is therefore not the creation of new markets; their first goal is to extend their monopoly pricing power into retail markets.

DRM implementation might even lead to underproduction in many industries, such as music, literature, and even motion picture, as Paul Petrick notes: *“music creation is a derivative process and thus relies on access to and utilization of existing works.”*¹⁵ The level of protection theoretically offered by DRM technologies constitutes an incentive for content vendors to charge for every single type of use of a product.

The effect of DRM technologies on competition is therefore uncertain. On one hand, digital rights management can facilitate the entry of new competitors on a market, thanks to low transactional costs and pooled implementation costs. On the other hand, both the nature and purpose of DRM systems constitute a real threat to competition, as they can become a source of economic dependence among the competitors.

¹⁵ Ibid.

B. Exclusionary Practices

1. Vendor Lock-In

Vendor lock-in is a situation in which a customer is dependent on a vendor for products and services and cannot move to another vendor without substantial switching costs, real and/or perceived. By the creation of these costs to the customer, lock-in favors the company (vendor) at the expense of the consumer. Lock-in costs create a barrier to entry in a market that, if great enough to result in an effective monopoly, may result in antitrust actions from the relevant authority.¹⁶

The Supreme Court recognized the concept of lock-in in its famous Kodak case¹⁷:

“If the cost of switching is high, consumers who already have purchased the equipment, and are thus “locked-in” will tolerate some level of service prices before changing equipment brands. Under this scenario, a seller profitably could maintain supracompetitive prices in the aftermarket if the switching costs were high relative to the increase in service prices, and the number of locked-in customers were high relative to the number of new purchasers.”

It is often used in the computer industry to describe the effects of a lack of compatibility between different systems. Different companies, or a single company, may create different versions of the same system architecture that cannot interoperate.

Manufacturers may design their products so that replacement parts or add-on

¹⁶ See “The Economics of Customer Lock-In and Market Power in Services,” S. BORENSTEIN, J. K. MACKIE-MASON & J. S. NETZ, University of California, Davis, available at <http://econwpa.wustl.edu:8089/eps/io/papers/9401/9401001.pdf>

¹⁷ Eastman Kodak v. Image Technical Services, 112 S. Ct. 2072 (1992)

enhancements must be purchased from the same manufacturer, rather than from a third party. In the case of a DRM technology, the purpose would be to make it difficult for users to switch to a competing system, so that a customer is “locked” in the market share owned by the content vendor.

2. Monopoly Pricing

The use of digital rights management provides the content vendor with extensive control over the customer’s use of that content. Such control may indeed lead to a situation of vendor lock-in, as we examined before. Such a situation can arguably create cases of monopoly pricing, where the vendor uses the dominant position provided by digital rights management to commit exclusionary practices.

However, in *Berkey Photo v. Eastman Kodak Co.*¹⁸, the second circuit confirmed the rule stating that the law does not prohibit large market share, monopoly pricing and restricted output, when they are not achieved by anti-competitive means: *“A purchaser suing a monopolist for overcharges paid within previous four years may satisfy conduct prerequisite to recovery by pointing to anticompetitive actions taken before limitations period.”*

Indeed, the Supreme Court has constantly considered that *“size and power, apart from the way in which they were acquired or the purpose with which they are used, do not offend against the law.”*¹⁹

¹⁸ 603 F. 2d 263 (2nd Cir. 1979) cert. denied, 444 U.S. 1093 (1980)

¹⁹ *United States v. American Can Co.*, 230 F. 859, 901-902 (D. Md. 1916) appeal dismissed, 256 U.S. 706 (1921)

According to Michal S. Gal²⁰, “[t]he main factor which has led to reject regulation of monopoly pricing [...] is the strong skepticism towards the efficacy of government intervention. Arguments center on the theoretical and practical difficulties in determining what is a “reasonable” price, especially when cost, demand, and technological functions are constantly changing. A prohibition not based on a manageable, understandable, and reasonably administrable set of rules would create a high level of uncertainty.”

As a result, whereas exclusionary practice is an offense against antitrust law on both sides of the Atlantic, exploitative conduct generally only breaches EU law. Ever since the Supreme’s Court decision in the Standard Oil case²¹, monopolization cases have been governed by the rule of reason to distinguish between competitive and anticompetitive exclusionary conduct.

Conversely, EC law prohibits some types of monopoly pricing. Article 82 of the Treaty of Rome contains a non-exclusive list of abuses of dominance, which includes both exclusionary as well as exploitative conduct. In particular, sub-section (a) prohibits “directly or indirectly imposing unfair purchase or selling prices...” by a dominant firm.

In the United Brands case²², the European Court of Justice decided that a price which has “no reasonable relation to the economic value of the product supplied” must be considered abusive, and therefore an abuse of dominance.

²⁰ “Monopoly pricing as an antitrust offense in the U.S. and the EC: Two systems of belief about monopoly?”, M. S. GAL, *University of Haifa Antitrust Bulletin*, Summer 2004

²¹ *Standard Oil Co. of N.J. v. U.S.*, 221 U. S. 1, 31 S.Ct. 502 (1911)

²² 27/76 *United Brands Co. et al. v. Commission*, 1978 1 CMLR 429

3. Refusal to Deal With a Competitor

In the Aspen Skiing case²³, the Supreme Court held that a monopolist's refusal to participate in a joint ticket-selling venture with a competitor could be considered as evidence of the monopolist's intent to exclude competition by improper means.

Applying this case to digital rights management, in a situation where two competitors on the same relevant market use two different and incompatible DRM technologies, a court may find that refusal by the dominant vendor to enter into a deal with its competitor results in an exclusionary practice. Indeed, the refusal to build any bridge between the two competing DRM technologies can constitute an attempt to monopolize, as it would durably lock consumers in with no possibility to switch from one content provider to another.

4. The “Essential Facility” Doctrine

Under this doctrine, a dominant vendor that controls an “essential facility” may have a duty to share the facility with a competitor. According to Herbert Hovenkamp²⁴, *“Exactly what constitutes an essential facility is unclear, but it is some productive asset that is essential to operation in some business and that cannot be duplicated.”*

²³ Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U. S. 585, 105 S.Ct. 2847 (1985)

²⁴ *Antitrust*, H. HOVENKAMP, 3rd ed., Westgroup, Blackletter Series, 1999.

The Supreme Court has already held that transmission facilities can constitute an essential facility, in the case of an electric utility.²⁵ By analogy, the Essential Facility doctrine can be applied to a DRM system.

A digital rights management system could therefore constitute an essential facility under this doctrine, if it appears to the court that competing systems can only be offered on the market if they are compatible with the dominant firm's DRM technology. The second condition – that the facility cannot be duplicated – is fulfilled insofar as the dominant DRM technology is patented, as an attempt to “duplicate” it by a competitor would constitute patent infringement, and the DMCA prohibits circumvention of those devices.

The third condition to the application of the Essential Facility doctrine to a DRM technology is that it must account for a dominant share of a properly defined relevant market, at the facility must give the vendor a monopoly.

C. The Need for Interoperability

1. Definition

According to Federal Standard 1037C²⁶, interoperability is “[t]he condition achieved among communications-electronics systems or items of communications-

²⁵ *Otter Tail Power Co. v. U. S.*, 410 U.S. 366, 93 S.Ct. 1022 (1973)

²⁶ Federal Standard 1037C, entitled “Telecommunications: Glossary of Telecommunication Terms,” is a U.S. Federal Standard, issued by the General Services Administration pursuant to the Federal Property and Administrative Services Act of 1949, as amended.

electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users.”

Regarding digital rights management, the point is therefore to allow content purchased on one platform to be used on another platform, so that end users can actually switch from one vendor to another without having to bear the cost of repurchasing any content.

In the long run, the absence of interoperability between competing DRM technologies may fragment the markets, and eventually seriously limit demand on those markets. Moreover, according to Pamela Samuelson²⁷, “[t]he main goal of DRM mandates is not, as the industry often claims, to stop “piracy” but to change consumer expectations. In the content industry’s view, consumers don’t have rights; they have expectations. Consumers may not like DRM systems, but if “legitimate” content is available only on this basis, they’ll get used to it.”

Insofar as almost all DRM technologies are protected by patents, interoperability between the various DRM systems available on a market can be achieved by patent licensing between competitors or by standard setting. In addition, as we studied earlier, the exception of interoperability included in Section 1201 is to be narrowly interpreted, so that unilateral reverse engineering is not the perfect solution either.

This document provides Federal departments and agencies a comprehensive source of definitions of terms used in telecommunications and directly related fields by international and U.S. Government telecommunications specialists.

²⁷ “DRM {and, or, vs} the Law,” P. SAMUELSON, *Communications of the ACM*, April 2003/Vol. 46, No. 4

2. Patent Portfolios

In these conditions, patent portfolios can be viewed as an interesting solution to the problem of the lack of interoperability between competing DRM systems, in that they allow a content vendor to acquire the license for many different technologies in one single purchase.

MPEG LA, LLC, who had already pioneered one-stop technology platform licensing with a portfolio of essential patents for the international digital video compression standard known as MPEG-2, has recently²⁸ issued a call for patents that are essential to digital rights management technology as described in its DRM Reference Model.

The purpose of the DRM Reference Model is to begin a process of evaluating and determining patents that are essential for DRM in order to provide users with convenient, fair, reasonable, nondiscriminatory access to a portfolio of essential worldwide patent rights under a single license.

The DRM Reference Model does not detail how to build a DRM system and does not require, or describe how to achieve, interoperability between DRM devices, systems or methods. Rather, the DRM Reference Model is intended to support the formation of a single license containing as many essential patents as possible that an industry participant may need and thereby encourage the implementation and use of DRM and the rapid availability of DRM products. A patent portfolio license provides users with a convenient alternative to negotiating licenses directly with individual patent owners.

²⁸ “DRM Reference Model and Call for Essential DRM Patents Represent First Step,” *News Release*, MPEG LA, LLC, Denver, Colorado, 2003, available at www.mpegla.com

3. Standard Setting

The first significant standard-setting success in the field of digital rights management occurred in 1996 when the motion picture and electronic industries reached an agreement regarding copy protection for DVD players and discs.²⁹

However, the Secure Digital Music Initiative (SDMI), promoted by major members of the RIAA (Recording Industry Association of America), did not achieve the same result, and failed in leading to the establishment of a standard in the field of digital music.³⁰

Still, new initiatives are rising. The Open Mobile Alliance, a mobile-industry organization, recently introduced³¹ revised technical specifications and a business and legal framework for a digital rights management and copy protection standard. The Open Mobile Alliance's version 2.0 specification is an open standard that can be applied to a range of devices and services, as it can be used by online media service companies, PC software vendors and mobile operators on cell phones, personal digital assistants, PCs, MP3 players, jukeboxes and Wi-Fi devices.

²⁹ “DRM {and, or, vs} the Law,” P. SAMUELSON, *op.cit.*

³⁰ *Ibid.*

³¹ Press Release by the Open Mobile Alliance, Monday, February 2, 2004, available at www.openmobilealliance.org

III. The iTunes Case

A. Presentation of the Case

1. Products and Services Involved

The online digital music industry is a rising one, which debuted in 2002 and represents only 2% of the music industry's total revenue in the United States. Indeed, the first digital rights management systems did not appear in this industry before 2001. As a result, a large majority of the songs are still traded via "peer-to-peer" networks, using the unsecured MP3 format, without any earnings for the authors or the producers. Digital music players also appeared quite recently – by the end of 1999. Apple launched its first iPod model in 2001.

Apple's iTunes Music Store lets customers search a catalog of over 700,000 songs. With one click, users can purchase the songs and download them into their iTunes music library (the user's personal song catalog) for \$0.99 cents per song and \$9.99 per album, without any subscription fees. Songs are downloaded in digital quality and can be burned onto CDs for personal use, played on up to three computers, and listened to on an unlimited number of iPods, the company's flagship digital music player. Access to the iTunes Music Store and its song catalog is embedded in the iTunes software, which includes a music player, CD ripping and burning tools, an interface to the iPod, and access to free Internet radio stations.

According to NPD Group, Inc., the iPod's market share among hard-disk based digital music players went from 82% to 87% in 2004, with a peak at 92%, while Apple's share on the overall digital music players market was of 68.3% as of February, 2005.³²

According to the same source, Apple's competitors on the digital music player market hold shares of 3.6% (Hewlett Packard), 2.8% (Rio), 2.6% (Creative), and 1.5% (iRiver).

The iTunes Music Store, which accounted for 70% of the "legal" music downloads from December, 2003 to July, 2004, with a peak of 1.3 million users per month in April.³³ As a comparison, the iTunes Music Store's most serious competitor, the subscription-based Napster service, had a market share of 11% during the same period, while Real Networks, Music Match and Wal-Mart each reached a share of 6%.

2. Digital Rights Management System Involved

Apple Computer's name for its digital rights management system is FairPlay. It is built in to the company's QuickTime multimedia technology and used by the iPod, iTunes, and the iTunes Music Store. Every file bought from the iTunes Music Store with iTunes is encoded with FairPlay. It digitally encrypts audio files and prevents users from playing these files on unauthorized computers.

FairPlay will allow a protected track to be used in the following ways: the protected track may be copied to any number of iPod portable music players; played on

³² <http://www.npdtechworld.com>

³³ Ibid.

up to five (originally three) authorized computers; copied to a standard CD audio track any number of times. (The resulting CD has no DRM and may be re-converted to MP3.)

Each time a customer uses iTunes to buy a track, a new random user key is generated and used to encrypt the master key. The random user key is stored, together with the account information, on Apple's servers, and also sent to iTunes. iTunes stores these keys in its own encrypted key repository. Using this key repository, iTunes is able to retrieve the user key required to decrypt the master key. Using the master key, iTunes is able to decrypt the audio file and play it.

When the user authorizes a new computer, iTunes sends a unique machine identifier to Apple's servers. In return, it receives all the user keys that are stored with the account information. This ensures that Apple is able to limit the number of computers that are authorized and makes sure that each authorized computer has all the user keys that are needed to play the tracks that that particular user bought.

When the user unauthorizes a computer, iTunes will instruct Apple's servers to remove the unique machine identifier from their database, and at the same time it will remove all the user keys from its encrypted key repository.

The iPod also has its own encrypted key repository. Every time a FairPlay-protected track is copied onto the iPod, iTunes will copy the user key from its own key repository to the key repository on the iPod. This makes sure that the iPod has everything it needs to play the encrypted audio file.

FairPlay is the only DRM-secured file format the iPod will recognize. Except for the iTunes Music Store, all the major online music retailers use Microsoft's WMA file

format and digital rights management system. As a result, music purchased on the iTunes Music Store cannot be played on another digital music player than the iPod, and music purchased from any other online retailer cannot be played on the iPod. The only lawful “loophole” available to the user is to burn the songs he purchased on a CD, and then copy that CD onto his digital music player – a long and inconvenient process.

Two antitrust claims have already been brought against Apple Computer regarding the FairPlay digital rights management system and its implementation into the iTunes Music Store and the iPod.

3. The French Case

The first case was brought in France by Virgin Mega, before the “Conseil de la concurrence”.³⁴ Virgin Mega, a French corporation, launched its online music store in the Spring of 2004 and tried to enter in negotiations with Apple Computer, in order to obtain a license for Apple’s FairPlay DRM, so that songs purchased from Virgin Mega’s online store could be played on the iPod. Apple’s refusal, Virgin Mega claims, constituted an abuse of dominance under Article 82 of the Rome Treaty. As a consequence, Virgin Mega asked for a compulsory license over FairPlay.

First, the court accepted the existence of a relevant market for digital rights management systems, but without any further distinction, considering that “*[i]t is very difficult to foresee the evolution of such markets, even only a few months away from*

³⁴ Décision n° 04-D-54 du 9 novembre 2004 relative à des pratiques mises en oeuvre par la société Apple Computer, Inc. dans les secteurs du téléchargement de musique sur Internet et des baladeurs numériques, Conseil de la concurrence, République Française

now.” Regarding the music players, the court admitted that DRM-secured hard-disk based digital music players could constitute a relevant market. The online digital music industry was also recognized as a relevant market – separate from both the peer-to-peer networks and the “physical” music industry.

Second, the court assessed Apple’s position on each of those three markets. Concerning DRM systems, the court noted that Microsoft’s WMA competing DRM was granted a very large distribution among personal computer users, because of its integration into Windows. As a result, considering that Microsoft was the actual leader on the market, the court refused to view Apple’s position as one of dominance. On the market of secured, hard-disk based digital players, it was decided that although competition was very changing and dynamic, Apple’s had a strong leadership. As for online music stores, even though it was admitted that *“every platform has its own competitive advantage,”* the court considered that *“it cannot be denied that Apple’s iTunes Music Store is in a position of dominance.”*

The following factors were then taken into account: the possibility to circumvent the lack of interoperability by burning a CD; the apparition of many WMA-compatible new digital music players; the link between iTunes’s market share and FairPlay. As a consequence, the court decided that FairPlay could not be considered as an “essential facility” in this case, and that no relevant link could be established between Apple’s position on the market of digital music players and the situation concerning online music stores.

4. Slattery v. Apple

On Monday, January 3rd, 2005, an individual iTunes user from California, Thomas Slattery, filed a class action lawsuit against Apple Computer before the U.S. District Court in San Jose, claiming that “*Apple has turned an open and interactive standard into an artifice that prevents consumers from using the portable hard drive digital music player of their choice, even where players exist that would otherwise be able to play these music files absent Apple's actions.*”³⁵

The suit further states: “*Within the relevant market for online legal sales of digital music files, Defendant Apple, through its iTunes online music store, possesses and has possessed through the Class Period monopoly market power sufficient to exclude competition.*”

According to Ken Fisher, “[t]echnically, that specific claim is false. There is nothing stopping a user from converting protected AAC audio files from the iTunes Music Store to MP3s, which can then be played in almost any music device of late. The problem is that converting a compressed, lossy music file to another compressed, lossy music format will result in a further loss of quality.”³⁶

The mere fact that Apple’s digital rights management policy obliges users to use a specific procedure to use the purchased tracks with other portable devices should not constitute a breach of Antitrust law or of Fair Use: in *Universal City Studios v. Corley*³⁷, the Court of Appeals for Second Circuit stated that “[f]air use has never been held to be

³⁵ More information at <http://www.legalreader.com/archives/002247.html>

³⁶ <http://arstechnica.com/news.ars/post/20050106-4508.html>

³⁷ *Universal City Studios, Inc. v. Corley*, 273 F.3d 429 C.A.2 (N.Y.), 2001

a guarantee of access to copyrighted material in order to copy it by the fair user's preferred technique or in the format of the original.”

The plaintiff's assertion that *“Apple has unlawfully bundled, tied, and/or leveraged its monopoly in the market for the sale of legal online digital music recordings to thwart competition in the separate market for portable hard drive digital music players, and vice-versa”* is based on the belief that the iTunes software, the iPod and the iTunes Music Store constitute one specific market – and, as the French decision studied before shows, this is not self-evident.

B. Defining the Relevant Market

1. General Principles

The European Commission recently issued a report regarding market definition in the media and music publishing sectors.³⁸ The author, Europe Economics, notes that *“little reliance can be placed on similarities or differences between products, for example in terms of the technology that they use, as a guide to market definition. In particular, convergence of products and/or technologies is not a good guide to changes in market definition.”* Moreover, *“the value of market definition precedents will often be quickly eroded by rapid change, and conclusions on market definition can rarely be transferred to new cases even if they appear superficially similar.”*

³⁸ *Market Definition in the Media Sector, Report by Europe Economics for the European Commission, DG Competition, Information, communication and multimedia – Media and music publishing, November 2002*

However, the report states, the media and music publishing sectors do not require a different, specific test for relevant market definition purposes: *“We have not found any fundamental weaknesses in the traditional test for market definition based on the analysis of substitutability. The hypothetical monopolist test is applicable to the media sector in the same way as to other industries, and is a valid framework for defining markets in competition cases relating to the media sector.”*

These conclusions are very close from the French Conseil de la concurrence’s findings, which stressed the point that, especially concerning the online music distribution industry, the market was a very changing and dynamic one. As a result, it is very difficult to “spot” the relevant market with certitude, as substitutability does not appear very clearly on “younger” markets.

2. Application to the Case

As shown both in the French Virgin Mega case and in the pending *Slattery v. Apple*, defining the relevant market in an antitrust case over Apple’s FairPlay DRM and its iTunes Music Store and iPod music player is the most important and yet most difficult task.

Reckon LLP, a British consultancy firm specialized in regulation and competition economics, considers in a recent paper about the iTunes case that *“[d]efining the relevant retail markets requires a detailed, fact-based analysis.”*³⁹

³⁹ “The iTunes Music Store: does competition law hold the key to a closed shop?,” RECKON LLP, September 2004, published at <http://www.reckon.co.uk/ReckoniTunesSep2004.pdf>

Indeed, under US law as well as under the European Rome Treaty, the applicability of the Essential Facility doctrine to Apple's FairPlay DRM depends on how the court will define the secondary market on which the iTunes Music Store operates. As a reference, Reckon provides the European Commission's merger case of AOL/Time Warner⁴⁰, where the Commission distinguished between the online and physical music markets. Even though this decision would narrow the relevant market for iTunes, we have seen that precedents are not always the best advisers concerning relevant markets in the media sector.⁴¹

According to Reckon, *"a key question would be whether the relevant retail markets supplied by the iTunes Music Store should be defined to include music content other than downloads in FairPlay-secured AAC."* Indeed, a narrow definition, where the FairPlay-secured downloads would constitute the relevant market, would by definition lead to the application of the Essential Facility doctrine, since the right to use Apple's DRM system is obviously necessary to read (for music players other than the iPod) or write (for iPod users wishing to use another online retailer than the iTunes Music Store).

However, the iPod Music Player can read other formats than FairPlay: unsecured MP3-encoded files and albums copied from a CD via the iTunes software. A narrow definition would therefore ignore these possibilities – and a mere inconvenience, or even higher costs, for iPod owners wishing to use a competitor's online music store is not likely to justify such a definition.⁴²

⁴⁰ Case No IV/M.1845, 11 October 2000

⁴¹ *Supra*, General Principles

⁴² See *supra*, under US law, Universal City Studios v. Corley

In addition, this definition would not take into account the iTunes customers who do not own an iPod, and purchase songs from Apple in order to listen to them on their computer, or on audio CDs.

A broader definition of the relevant market seems therefore more appropriate in this case. Still, the success of Apple's iPod and its record sales⁴³ call for more interoperability.

C. Interoperability between DRM systems?

1. Reverse Engineering

RealNetworks, one of Apple's competitor on the market of online music store with its Rhapsody website, developed a technology called "Harmony," that allows Rhapsody customers to copy their purchased songs on an iPod.

Apple quickly responded, by upgrading the iPod's core low-level software ("firmware"), disabling the use of Harmony, and stating: *"We are stunned that RealNetworks has adopted the tactics and ethics of a hacker to break into the iPod, and we are investigating the implications of their actions."*

Individual users have also started initiatives in order to disable the restrictions created by the FairPlay DRM.⁴⁴ In addition to being questionable as to their compliance

⁴³ By 2008, 100 million Windows users will own iPods, according to a leading Wall Street analyst. More information at <http://www.macworld.co.uk/news/index.cfm?NewsID=10252>

⁴⁴ For example: "So sue me," J. L. JOHANSEN, weblog available at: <http://www.nanocrew.net/blog/apple/huntingplayfair.html>

with the DMCA,⁴⁵ such solutions cannot last in the long run, as a vendor can always modify its proprietary DRM technology to preserve its market share.

2. Interoperability Achieved by Law?

On Wednesday, April 6, 2005, the U.S. House of Representatives Judiciary Committee's Subcommittee on Courts, the Internet, and Intellectual Property conducted a hearing about interoperability in digital rights management systems in the online music industry.⁴⁶

During this hearing, four industry representatives (William Pence, chief technology officer of Napster, Michael Bracy, policy director of the Future of Music Coalition, Ray Gifford, president of the Progress and Freedom Foundation and Mark Cooper, director of research at the Consumer Federation of America)⁴⁷ testified on the question of proprietary digital rights management systems and the opportunity for the legislature of mandating one of the technologies currently available, or a new one.

All four witnesses strongly advocated for a market-driven solution rather than government intervention, as Mark Cooper stated: *“Those who had foresight and created a digital music platform with portable digital music players and digital music download stores now have a lead, winning a first-mover advantage. But as the entirety of the music industry makes the inevitable transition to digital distribution, there are no guarantees*

⁴⁵ See *supra*, Digital Millennium Copyright Act

⁴⁶ <http://judiciary.house.gov/oversight.aspx?ID=129>

⁴⁷ Apple reportedly refused to testify:

http://www.betanews.com/article/Apple_Skips_US_Congress_DRM_Hearing/1112891589

that the initial advantage will persist, especially if mistakes are made with regard to interoperability.”⁴⁸

3. Conclusion

Richard Owens and Rajen Akalu, from the Centre for Innovation Law and Policy of the University of Toronto, noticed: *“There is considerable potential for DRM to make premium content available in a reliable and secure way over open distribution networks.”*⁴⁹

Indeed, digital rights management is very challenging for many areas of the law – copyright, antitrust, but also privacy –, but it remains the best solution to promote “legal” content downloads, as opposed to peer-to-peer networks, which are a source of loss for the content industry and of insecurity for computer users.

But the content industry has not won its fight against piracy and copyright infringement yet. As the market for online music distribution is only rising, and no equivalent exists for motion picture downloads yet, it appears that an antitrust regulation of digital rights management – whether by the courts or the legislature – would, at this point, more of a danger than a benefit for competition in these areas

⁴⁸ <http://judiciary.house.gov/media/pdfs/cooper040605.pdf>

⁴⁹ “Legal Policy and Digital Rights Management,” R. OWENS, R. AKALU, Centre for Innovation Law and Policy – University of Toronto, February 2005