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ISSUE

What should be done to address the legal and policy challenges presented by peer to peer (hereafter “p2p”) file sharing and file sharing technologies? What specific policies should be taken to meet these challenges, and by whose hand should these policies be enforced?

BRIEF ANSWER

With respect to the specific legal and policy challenges presented by p2p music file sharing, a voluntary collective licensing scheme should be devised and implemented. The voluntary collective license will solve the largest issues in the current debate regarding p2p file sharing – compensating artists while promoting the further technological development of p2p technology. This system will be architected by a coalition of music artists, music copyright owners (i.e., record labels), and technology companies, but the implicit policy actor will be the market. This solution explicitly preserves the *Sony-Betamax* doctrine, which will allow p2p, and other unforeseen innovations, to grow into expected and unexpected areas. If the various parties cannot agree to impose a voluntary collective license, then new business models will arise so as to remunerate artists while preserving the validity of p2p file sharing systems.

FACTS

The design of the Internet has always been content neutral, and has always allowed peers to address each other and exchange data¹. The deployment of the Internet has not always reflected this fact – at first the Internet only allowed for textual display between machines, and later advances in connection technology allowed for CompuServe and Prodigy to carve small niches.² In 1993, the introduction of Mosaic, which would soon morph into Netscape, heralded the growth of the World Wide Web.³ Six years later, Napster burst onto the scene, and in the eyes of many, p2p file sharing had officially arrived.⁴ Napster was soon shutdown because its architecture was prone to legal attack.⁵ Decentralized file sharing soon followed in the forms of Kazaa, Gnutella, etc.⁶ Nevertheless, these systems are not recent innovations – p2p applications have existed since the advent of the Internet but have just not been notable (or notorious).⁷

When viewed simply as a technical solution, p2p is simply a subset of what is known as distributed computing.⁸ Nevertheless, when p2p is deployed to millions of end users who have relatively high bandwidth connections, it can become a massive copyright infringement machine.⁹ This fact has caused p2p to become conflated with file sharing, when in fact file

¹ James S. Tyre, *Brief Amici Curiae of Computer Science Professors*, http://www.eff.org/IP/P2P/MGM_v_Grokster/20050301_cs_profs.pdf

² *Milestones in the Development of the Internet and Its Significance for Education*, <http://www.originami.com/sp/milestones.htm>

³ *Id.*

⁴ Todd Sundsted, *The Practice of Peer-to-Peer Computing: Introduction and History*, <http://www-106.ibm.com/developerworks/java/library/j-p2p/>

⁵ *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001). Interestingly, Napster's architecture was very prone to technical attacks with its reliance on the client-server paradigm.

⁶ Todd Sundsted, *The Practice of Peer-to-Peer Computing: Introduction and History*, <http://www-106.ibm.com/developerworks/java/library/j-p2p/>

⁷ *Id.*

⁸ *Id.*

⁹ Jessica Litman, *Sharing and Stealing*, 26 COMM/ENT L.J., http://papers.ssrn.com/sol3/papers.cfm?abstract_id=472141

sharing is one of manifold potential uses of p2p.¹⁰ This has not deterred the content industry, which owns many of the infringed copyrights, from suing the distributors of p2p software.¹¹ The seminal case in the series of litigation against p2p companies is *MGM v. Grokster*, which is currently under review by the Supreme Court.¹² The main issue in front of the Supreme Court in *MGM v. Grokster* is the continued viability of the *Sony-Betamax* ruling, which held that distributors of technology are shielded from contributory and vicarious copyright infringement liability if their technology is capable of substantial non-infringing uses.¹³

DISCUSSION

This analysis will draw upon various disciplines, most notably software and internet technology design and law and economics. These frameworks will be utilized to argue that the *Sony-Betamax* doctrine is vital to the continued success of the United States technology industry and that a voluntary collective license will fill the vacuum that currently exists in the p2p music file sharing space. In the event that a voluntary collective license is not implemented, new business models that strike a balance between content creators and consumers will likely arise.

Sony-Betamax: Protecting Innovation in the Digital Age

“[T]he sale of copying equipment, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes. Indeed, it need merely be capable of substantial non-infringing uses.”¹⁴

¹⁰ Todd Sundsted, *The Practice of Peer-to-Peer Computing: Introduction and History*, <http://www-106.ibm.com/developerworks/java/library/j-p2p/>

¹¹ *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 380 F.3d 1154 (9th Cir. 2004). As has been cited, Napster was also sued out of existence, and another popular file sharing program, Aimster, had its doors shuttered.

¹² MGM Petition to the U.S. Supreme Court for a Writ of Certiorari, http://www.eff.org/IP/P2P/MGM_v_Grokster/20041008_Grokster_final_petition.pdf

¹³ *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

¹⁴ *Id.* at 442.

The *Sony-Betamax* rule encapsulates the tension that distribution and copying technologies and copyright law often exhibit. As new technologies allow for easier distribution and copying of digital works, the market for the consumption of digital works also expands. For example, copyrighted digital works have become more useful to consumers as technologies like the iPod have flourished – the utility of CDs to consumers increase in value when they are made ready to ‘rip, mix, and burn’ onto an iPod. Nevertheless, these same technologies enable copyright infringement on an unparalleled scale. For example, p2p file sharing services such as Grokster and Kazaa allow for widespread and facile copyright infringement.¹⁵

Directly at issue in the *Sony-Betamax* case was the continued validity of the video tape recorder (VTR).¹⁶ At the time of its inception, the VTR enabled copyright infringement on a much larger scale than ever encountered – users could archive libraries of recorded programs, make copies of other video tapes, etc.¹⁷ Nevertheless, the Supreme Court did not find that the producers of VTRs liable for contributory and vicarious copyright infringement.¹⁸ The court borrowed from patent law’s staple article of commerce doctrine which validates products capable of substantial non-infringing uses.¹⁹ Since the VTR was capable of substantial non-infringing uses (e.g. time shifting taped programs), plaintiff copyright owners could not use their statutory copyright monopoly to enjoin the distribution of the VTR even where defendant manufacturers were guilty of contributory copyright infringement.²⁰

The effect of the *Sony-Betamax* ruling on how technologists innovate is substantial. Unlike many other legal doctrines, the ruling is a ‘bright-line’ test. It gives clear direction to

¹⁵ *Grokster*, 380 F.3d at 1158.

¹⁶ *Sony*, 464 U.S. at 420.

¹⁷ *Id.* at 465.

¹⁸ *Id.* at 456.

¹⁹ *Id.* at 426.

²⁰ *Id.* at 431.

technologists about what technical designs will be subject to contributory copyright liability.²¹ Technologists are assured that where their innovations are ‘general purpose’, i.e. capable of some substantial non-infringing use(s), they will not be subject to contributory copyright infringement liability.²² An alternate view of the *Sony-Betamax* test is its effect on the cost of innovation. In order to innovate, a person or company needs to expend various costs, including time, money, and other resources. There are less tangible costs related to innovation which economists would designate ‘shadow prices’.²³ One ‘shadow price’ of innovation is the cost of any legal liability resulting from the innovation. The *Sony-Betamax* ruling serves to reduce the ‘shadow price’ of innovation related to legal liability by making the risk of contributory copyright infringement liability predictable *ex ante*. Technologists can easily navigate the bounds of *Sony-Betamax* and can therefore allocate this cost of innovation efficiently.

Critics of *Sony-Betamax* (as interpreted by the 9th Circuit in *Grokster*) argue that the ruling allows technologists to avoid liability from contributory copyright infringement too easily – simply create a device that can copy anything, sell that device to the public, and reap the benefits even though there is constructive knowledge of copyright infringement.²⁴ They reason that the potential or even the presence of small amounts of non-infringing uses is not dispositive – the purveyors of technologies that are used for substantial copyright infringement must show that reducing the infringement would be ‘disproportionately costly’.²⁵ This rationale attempts to balance the costs of a particular technology – where the harm of the technology is so great as to severely outweigh the benefits, technologists should reduce the harm in order to lessen the

²¹ <http://www.eff.org/legal/cases/betamax/>

²² *Id.*

²³ Richard Posner, *Economic Analysis of Law* (1998), 5th Edition.

²⁴ *In re Aimster Litigation*, 334 F.3d 643, 651 (7th Cir. 2003). Petitioners in *MGM v. Grokster* essentially argue this when they cite ‘business models based on infringement’. Stated in another way, the ‘shadow price’ of the *Sony-Betamax* doctrine may be negative, meaning it encourage technologists to build tools that enable copyright infringement.

²⁵ *Id.* at 653.

imbalance. Unfortunately, this *ex ante* approach has a severe failing – it is a case of ‘premature optimization’. A simple definition of premature optimization is optimizing a situation before you need to know what to do.²⁶ An important maxim in computer engineering is that ‘premature optimization is the root of all evil’.²⁷ A legal rule which mandates that technology must balance the costs of how it is used prior to obtaining data about the actual use of the technology might expend resources inefficiently. A technologist might limit the use of this innovation in order to conform with the proposed ‘disproportionate cost’ standard but may as a result limit non-infringing or novel uses, or, worse still, expend resources to fix a situation that would have never materialized.

Therefore, the *Sony-Betamax* ruling, where a technologist can advance a defense to a claim of contributory copyright infringement if his product is capable of substantial non-infringing uses, is sound. The rule reduces the ‘shadow price’ of innovation, thereby promoting the advance of the state of the art. Moreover, the rule’s emphasis on substantial non-infringing uses is an implicit recognition that the use of an innovation cannot be predicted a priori and only after its introduction and experimentation should any regulations regarding this use be constructed.

Voluntary Collective Licensing: Optimizing When Necessary

Given that p2p file sharing either has or potentially has substantial non-infringing uses, and that the main exception to the current situation is a method of remuneration for p2p file sharing of copyrighted content to copyright holders does not exist, it is appropriate to impose a targeted solution. Instead of enjoining the use of p2p file sharing networks altogether²⁸, a targeted solution would allow p2p technology to be adapted to unforeseen uses while satisfying

²⁶ <http://c2.com/cgi/wiki?PrematureOptimization>

²⁷ *Id.*

²⁸ *Grokster*, 380 F.3d 1154.

uncompensated rights holders. This approach avoids the perils of premature optimization mentioned above – now that we know what we need to do (i.e. remunerate rights holders), we can optimize the system appropriately. Moreover, this approach is a corollary of the recognition that we should leave the *Sony-Betamax* ruling undisturbed. Besides the fact that technologists rely on the bright-line nature of the ruling, empirically it has successfully guided technologists and allowed for the introduction of many seminal innovations.²⁹

One targeted solution is for audio recording copyright holders to license their works for exchange on the p2p file sharing networks.³⁰ The basic concept is straightforward:

“[T] the music industry forms a collecting society, which then offers file-sharing music fans the opportunity to "get legit" in exchange for a reasonable regular payment, say \$5 per month. So long as they pay, the fans are free to keep doing what they are going to do anyway—share the music they love using whatever software they like on whatever computer platform they prefer—without fear of lawsuits. The money collected gets divided among rights-holders based on the popularity of their music.

In exchange, file-sharing music fans will be free to download whatever they like, using whatever software works best for them. The more people share, the more money goes to rights-holders. The more competition in applications, the more rapid the innovation and improvement. The more freedom to fans to publish what they care about, the deeper the catalog.”³¹

The voluntary collective licensing scheme is not new – there are analogs in existing rights collecting bodies like ASCAP and BMI, which were formed in order to ensure that radio broadcasts remunerated rights holders. The imposition of a voluntary collective license requires the input of several industries, notably the RIAA, the artists who make our music, the technology industry, and consumer groups. These parties will serve as the ‘policy actors’ such that their

²⁹ For example, the general purpose computer and the iPod. In the recent oral argument in the *Grokster* cases, several justices admitted that without *Sony-Betamax* the fate of these amazing inventions may not have been assured.

³⁰ http://www.eff.org/share/collective_lic_wp.php

³¹ *Id.*

negotiations will create the normative mechanisms that will govern the collective license. The parties will determine what price to levy, how to monitor and mark content transfers, compensation schedules, etc. Though the explicit policy actors are the various industries that affect or are affected by p2p music file sharing, the implicit actor is the market. A voluntary collective license, where the details are dickered for by the competing interests of the participants, will provide an efficient solution.

Voluntary collective licensing has several advantages (besides the obvious advantage that artists and rights holders get paid), all of which are made possible since cooperation between the technology and content industries will exist (as opposed to the current stalemate that frames the *Grokster* debate). First, the imposition of a fee for deposit into the licensing collective is straightforward to administer. Since the voluntary collective license will legitimize p2p file sharing services, determining who to charge is trivial – users of p2p file sharing services will 1) either have to pay the p2p file sharing companies for use of their software, or 2) will have the option to buy ‘upgraded’ internet service plans which will allow them to use p2p file sharing software. In order to access works in the collective license, the p2p file sharing software or the user’s ISP can validate that the host computer has a ‘collective license pass’ credential. This ‘collective pass’ credential would be a cryptographic key that allows access to the licensed works. The key would be difficult to generate by third parties³², so only users who have paid the fee will be allowed into the collective. This fee will be deposited into the collective for eventual disbursement to artists (described *infra*). Some will argue that software that allows music to be traded without being part of the license will be created in order to bypass the collective licensing

³² The details would need to be worked out a bit more, but in general a secure system would not be hard to devise. http://en.wikipedia.org/wiki/Public-key_cryptography

system. This is not a huge concern – the large majority of users will be willing to pay for access to the legitimate service.³³

Second, since p2p file sharing services will not fear legal liability, they can revert from their current inclination to disavow themselves from any knowledge of infringement via technical architecture decisions.³⁴ While this won't necessarily mean the return of Napster-like centralized systems, p2p file sharing software purveyors will implement more mechanism to (anonymously) monitor their users. This will allow them to create new revenue opportunities, such as advertising. Furthermore, p2p file sharing services will be inclined to open their software or protocols for inspection (perhaps with an accompanying licensing fee) by third parties to offer ancillary services, such as popularity indices.³⁵ The foremost use of popularity indices will be to determine what artists have the most popular songs. This will allow the licensing fee to be distributed to rights holders as appropriate. 'Opening up the hood' of these file sharing systems will also remedy a long-standing fear of any collective licensing scheme – the ability to skew the availability of content on the network to favor one rights holder over another. Though this will always be a threat to the system's efficient functioning a transparent architecture will spawn a host of indexing services such that any skew will likely be minimized.

Third, the voluntary collective licensing mechanism does not necessitate any government involvement. Some have called for a government imposed compulsory license.³⁶ While the details of compulsory licensing schemes do not differ drastically compared to the EFF's

³³ For example, charging a fee via the ISP would ensure that payment occurs at the first point of access. If a user is given a choice between 'Internet for Web and E-mail' and 'Internet for Web, E-mail, and Music', they will gravitate towards the latter option if so inclined. Furthermore, the latter option can be provisioned with faster bandwidth speeds, making the overall experience more convenient.

³⁴ This doesn't mean that p2p file sharing software can control infringement – it just means that what is currently thought of as infringement will stop being regarded as such.

³⁵ This is already happening in some cases: <http://www.bigchampagne.com/>

³⁶ Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 Harvard J. Law & Tech. 1 (2003)

collective licensing plan, it does require that the government set a licensing fee. Governments are notoriously bad at setting prices so as to ensure efficiency in the marketplace.³⁷ The voluntary collective licensing scheme will set prices much more efficiently since its very creation must involve the voluntary acquiescence of the many involved parties. The EFF advocates a government intervention insofar as to force a settlement between budging parties³⁸. Such a threat is not necessary as other targeted solutions can operate to solve the problem. If the music industry or any participant will not agree to a voluntary collective license, they will in time be supplanted by creative business models that preserve p2p as a technology while generating compensation for their artists (*see infra*).

Fourth, the voluntary collective license will rectify the short term problems of the current content industries, but it may also lead to an explosion of content as artists who are currently without a “big name record deal” or the like will now have a method to offer their content and get compensated for doing so. The importance of this effect should not be underestimated. The potential capabilities of the Internet as a method for promotion and advertising have lately been validated with the success of sponsored advertising supported by the migration of key demographic groups from broadcast TV and radio to the Internet. A voluntary collective license may be the perfect complement to these recent developments. Artists can license their music for inclusion on the p2p networks and advertise on the Internet, obviating some of the functions of the standard record labels.³⁹ The cries that p2p music file sharing would kill the music industry

³⁷ <http://en.wikipedia.org/wiki/Communism>

³⁸ http://www.eff.org/share/collective_lic_wp.php

³⁹ It should be noted that this sort of activity is not necessitated on the existence of a voluntary collective license for payment. WeedShare, described *infra*, has created an alternative.

may turn out as wrong Jack Valenti's famous rant⁴⁰ – p2p music file sharing may lead to an explosion of music diversity and availability.

Finally, the imposition of a voluntary collective license, besides being a targeted solution that should ameliorate the issues posed by p2p music file sharing, will serve to highlight basic lessons about how digital content can be consumed as the Internet revolution progresses. As mentioned, the Internet is based upon the facile copying of digital material, so the voluntary collective license for music should serve to elucidate any normative changes that will accompany this feature. Given empirical data about the functioning of a voluntary collective license, other industries like the movie, software, and video games industries may adopt the voluntary collective licensing methodology.

New Business Models: If it is Broke, Fix it

In the event that a voluntary collective license is not implemented, another targeted solution to the p2p music file sharing problem is to allow the market to formulate new business models that allow creative artists to get paid. If p2p music file sharing is truly deleterious to rights holders, then eventually there should be disinvestment in content creation. For example, if p2p music file sharing reduces the expected profit of creating a new work, then artists and investors will spend less of their resources creating content.⁴¹ For example, if the expected profit of creating content falls from \$4 to \$2 for every \$1 invested, would-be content creators would substitute money spent for the production of content to more profitable ventures⁴². This reasoning is employed (implicitly and explicitly) by various members of the content industries in

⁴⁰ http://www.spectator.org/dsp_article.asp?art_id=6343

⁴¹ Richard Posner, *Economic Analysis of Law* (1998), 5th Edition, page 8. This also assumes that music, movies, etc. are only created for eventual pecuniary profit, which is patently false. As a simplifying solution it is acceptable because it serves to demonstrate the worst case scenario.

⁴² When the profit per \$1 spent on creating content falls to \$1, then theoretically no profit maximizing individual or entity will invest in creating content.

their arguments against p2p music file sharing.⁴³ Nevertheless, it is only one side of the story since it only focuses on the supply side of the equation. It may be true that eventually creating content will become unprofitable such that none will ever be created, but this assertion assumes that the demand for music will have evaporated too. As long as there is a demand for music, movies, etc., some suppliers will stand to profit from this demand.⁴⁴ Furthermore, they can only profit by charging a fee that exceeds their marginal cost in producing the content. Therefore, even if p2p music file sharing reduces the expected profit from content creation (i.e., because p2p enables some people to pirate music), new business models that reduce the marginal cost of production may arise to offset the reduction in expected profit.

An example of a new business model that reduces the marginal cost of producing content is WeedShare.⁴⁵ WeedShare allows p2p sharers to sample DRM-protected songs up to three times, and then prompts for payment. Moreover, users who upload songs via p2p networks get a cut of future sales credited to their account so they can purchase other songs.⁴⁶ This system is notable for several reasons. First, it is a middle ground in the p2p music file sharing debate such that it allows limited uses as opposed to the usual ‘all-or-nothing’ approach. It is an instance of the market adapting to a new technological landscape, just as the MPAA did when the VCR became a mass-market device.⁴⁷ After their defeat in the *Sony-Betamax* case, the MPAA adapted their business model to take advantage of the fact that consumers now had a method to watch movies easily in the confines of their home. This new market is now a huge profit center for the movie studios.⁴⁸ Second, the WeedShare system does not ignore nor condemn p2p music file

⁴³ <http://www.riaa.com/issues/music/downup.asp>

⁴⁴ Richard Posner, *Economic Analysis of Law* (1998), 5th Edition, page 9, Figure 1.2.

⁴⁵ <http://www.weedshare.com/>

⁴⁶ <http://www.wired.com/news/digiwood/0,1412,65774,00.html>

⁴⁷ *Aimster*, 334 F.3d at 649.

⁴⁸ *Id.*

sharing, but rather utilizes it to promote its own ends. By encouraging and rewarding users to share their Weed songs, Weed artists save on bandwidth costs and get value-priced promotion. The WeedShare system is a huge boon to the creation of content since it reduces the costs of content creation. Independent artists who were without a distribution channel can now create markets for their content. In economic terms, the WeedShare system serves to greatly reduce the marginal cost of producing music by negating the cost of negotiating and securing a deal with a major record label.

WeedShare demonstrates one potential business model that adopts, rather than rejects, the p2p model. There are many others that may be adopted. One example would emphasize the increasing importance of search. The rise of Google and the importance of the Internet search function implicitly recognize that the amount of information encountered by the average person is steadily rising. For example, the most heralded feature of Apple's latest OS release is their Desktop Search mechanism, Spotlight.⁴⁹ Spotlight is a search mechanism for user data. Google has a similar product called Google Desktop Search.⁵⁰ Google Desktop Search, like Spotlight, allows a user to search his personal data for specific pieces of information, but takes the process a step further by integrating Web and Desktop search results on the same result screen. Microsoft is also planning a similar feature for its next major Windows OS release, Longhorn.⁵¹ This emphasis on search has been largely ignored in the p2p file sharing debate. At a base level, p2p file sharing is all about data search and retrieval – copyright infringement is simply one application of p2p's generic search mechanism. Internet search focuses on finding content in the World Wide Web, but the latest Desktop search offerings are more similar in spirit to p2p search

⁴⁹ <http://www.apple.com/macosx/features/spotlight/>

⁵⁰ <http://desktop.google.com/>

⁵¹ <http://www.pcworld.com/resource/article/0,aid,120445,pg,1,RSS,RSS,00.asp>

since they locate files⁵². It isn't hard to imagine p2p software that offers targeted sponsored ads to the user, or a combined search program that searches the Web, other user files, and the user's desktop, and provides relevant sponsored ads.⁵³

The example of WeedShare and p2p sponsored ads reinforce the validity of the *Sony-Betamax* substantial non-infringing uses tests. Instead of prematurely optimizing the file sharing situation by estopping its use, the market needs time to foment innovative (and profitable) applications of this technology. *Sony-Betamax* implicitly trusts the competitive nature of markets to produce value for producers and consumers.⁵⁴ Even if a voluntary collective licensing mechanism is adopted new business models may prove to be more attractive to consumers.

CONCLUSION

In conclusion, the p2p music file sharing controversy will likely be viewed as another example of entrenched moneyed interests crying wolf when confronted with disruptive technology. Unfortunately, it may also result in inefficient changes to the legal rules that impact the progress of technology. If the *Sony-Betamax* doctrine is not preserved by the Supreme Court's ruling in the *Grokster* case, it is possible that the pace of technological innovation will be severely impeded.⁵⁵ The *Sony-Betamax* ruling implicitly recognizes that making an evaluation about the merits of a certain technology is difficult *a priori*. Any movement away to a rule that necessitates that technologists make value decisions regarding the potential use of their innovations will likely reduce the pace of innovation.

⁵² Web pages are technical also 'files', but semantically they are not thought of as such.

⁵³ Some p2p programs already have advertising, but they are more static like Webpage banner ads. Sponsored search results would probably be less offensive and more useful to consumers.

⁵⁴ <http://www.sims.berkeley.edu/~hal/people/hal/NYTimes/2005-04-07.html>

⁵⁵ Well, perhaps only in the United States.

The *Sony-Betamax* ruling should be preserved by the Supreme Court and a targeted solution to the p2p music file sharing problem should be implemented. A market-imposed voluntary collective licensing would solve the p2p music file sharing problem by remunerating artists and will likely lead to an explosion of content. If the market is not ready to formulate an acceptable voluntary collective licensing mechanism, new business models that balance the interests of the relevant parties will likely arise.