Of Price Discriminiation, Rootkits and Flatrates

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> „Copyright owners continue to be ambivalent about the Internet. On the one hand, it represents a fantastic new medium for distribution; on the other, many in the publishing industry see it as one ‚giant, out of control copying machine.' ... The very technological advances that make rights management more difficult – the dramatic reduction in costs of copying and distribution – also offer a fantastic opportunity for owners of intellectual content.“[1]

Without scarcity there is no market. Information by its nature is a public good.[2] Copyright law artificially creates scarcity by granting exclusive rights to it for a limited time. Media technology so far helped enforcability of those rights because the means of production and the means of distribution of informational goods were expensive and therefore scarce.

The digital revolution does away with this scarcity. PC and Internet bring to virtually everyone the power of the printing press and the recording studio. Only now, information's defining qualities of non-rivalrousness and non-excludability come to full bearing. Zero cost for reproduction and distribution is indeed a fantastic value proposition for information vendors. Alas, it is undermined by the fact that for consumers the cost of copying and distribution is zero as well. Peer-to-peer networks show that transporting bits from A to B is now such a low-cost service that users can effortlessly provide it to each other.

The challenge then is how to make money in the digital marketplace. The motto of this section expresses a common perception at the end of the 1990s, i.e. after MP3 and before Napster. The authors of this seminal book on the digital economy are optimistic. Some of the old business models are broken, they write, but a lot of new ones are in the making. „The new opportunities offered by digitial reproduction far outweigh the problems.“[3]

For the economists, information because it is costly to produce but cheap to reproduce constitutes a special market.[4] In a usual competitive commodity market, price tends towards marginal cost which in the case of information would be zero. Therefore, Shapiro/Varian advise their readers „[y]ou must price your information goods according to consumer value, not according to your production cost.“[5] And value-based pricing, they go on, naturally leads to differential pricing.

Information products can be differentiated through versioning, personalisation, discounts, bundling, group pricing, promotions, along the dimensions of features, convenience, support, delay or annoyance.[6] Any information exploiter pursueing this strategy will have to take a number of additional steps:

- To get an indication for the prices at which different customers value a product, the seller has to collect as much information about them as possible, e.g. through registration and observation.[7]

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[1] Carl Shapiro, Hal Varian, Information Rules, Harvard Business School Press,1999: 83
[2] E.g. Joseph Stiglitz: Knowledge as Global Public Good, http://www.worldbank.org/knowledge/chiefecon/articles/undpk2/w2wtoc.htm
[3] Shapiro/Varian 1999: 84
[4] „There are only two sustainable structures for an information market. The dominant firm model ... [and a] differentiated product market...“ (24 f.) Today, one has to add commons-based peer production as a third option, e.g. of GNU/Linux that was just hitting the mainstream media in 1999. Free software with its mix of incentives and rewards has certainly proven to be sustainable.
[5] Ibid.: 3
[6] Ibid.: 37 ff.

- He has to prevent arbitrage, i.e. the reselling of products sold at one price point to a higher-price segment (e.g. through eBay or grey market imports from low-price neighbouring countries).
- If he uses degradation of functionality, quality, timeliness etc.[8] for differentiation, he has to prevent customers or intermediaries from undoing the degradation.
- Finally the seller has to prevent price comparisons. Services like bargain finders on the Internet or least-cost routers for telephone tariffs let customers circumvent much of the differentiation and choose on price alone, which leads to competition driving down price to marginal cost.[9] One of the answers is complex pricing schemes designed to make comparisons exceedingly difficult.

Consumers resent price discrimination. There is a strong sense of unfairness about the fact that different people pay vastly different prices for the same product or service. In case of the information economy, there is a sense of zero marginal cost or at least of massive cost savings e.g. of non-physical online music distribution over the CD over vinyl that are not being passed on to consumers. At the same time, consumers keep reading about authors and artists not getting paid properly and even being made to pay for new distribution technologies the exploiters are introducing.[10]

With all the information collected on them through registration, observation, tracking, surveillance and other forms of market research, consumers have a growing sense of being spied on. On top of that, they sense an information discrepancy: while the seller knows everything about them (without them knowing exactly what the seller knows), the customers do not know the most important information about the product: its price.

Customers resent it when they realize that there is a deliberate degradation of functionality, quality, timeliness etc. for the sole purpose of creating differential price points. Preventing the undoing of degradation requires control over the user's information environment. The user can not but experience this as an intrusion into the private sphere of her own computer or even as an expropriation.

Preventing arbitrage requires prohibition of second-hand markets. When consumers try to resell their legitimately acquired music tracks on eBay, they find out that they don't own what they have paid for. And again there is a sense of expropriation or at least of paying more for getting less.

Price discrimination entails obvious dangers to privacy and free market, let alone customer satisfaction. Nevertheless, Shapiro/Varian justify it by giving the textbook argument: without price discrimination the low willingness-to-pay customers would not be served at all.[11]

Digital Rights Management technology – says the IT industry trying to sell it to the entertainment industry[12] – is ideally suited for reestablishing scarcity and for implementing price discrimination. It has been designed to enforce finely granular usage restrictions of works on the devices of the users, to collect information about them, and to prevent manipulation and arbitrage.

Shapiro/Varian are very aware of „the fundamental trade-off between control and customer value." (97 f.) In contrast to the widely held view of DRM as the single solution path, they are rather unenthusiastic about it. They do talk about „rights management" but in entirely untechnical terms. They are rather concerned with economically wise decisions, e.g. giving some of the information away in order to lock customers in, and with unwise forms of over-enforcement to be avoided, e.g. Disney sueing day care centers and ASCAP sueing Girl Scout camps for copyright infringements. „The instinct to seek out and charge all those who use copyrighted material runs deep and can easily cause otherwise sensible executives to defend their rights past the point of economic return."[13]

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[7] Ibid.: 33 ff.

[8] „If you add a fancy new feature to your software or information product, make sure there is some way to turn it off! Once you've got your high-value, professional product, you often want to eliminate features to create a lower-value, mass-market product." (Ibid.: 63). The most famous example is the IBM Laser Printer Series E where the lower-priced version was identical except for an additional chip that reduced the output speed (Ibid.: 59)

[9] Ibid.: 79 f.

[10] Courtney Love does the math, Salon Magazine, 14. Juni 2000, http://dir.salon.com/tech/feature/2000/06/14/love/index.html

[11] Shapiro/Varian 1999: 63

[12] Because the music and the film industries are most aggressive in lobbying for extending exclusive rights and abolishing copyright exceptions, they tend to dominate the debate, often reducing it to informational entertainment products. Education, science, general and specialised information enabling citizens to participate meaningfully in political debates tend to be backgrounded. E.g. a representative of IFPI in the context of the second round of digital copyright lawmaking in Germany argued that the private copying exception should be abolished for music because it is of no relevance for education, science, of politics. Music is only entertainment, a private copy therefore necessarily nothing but the replacement of a purchase.

[13] Ibid.: 88

They do see a problem with „illicit copying" or „bitlegging" but they also see two factors keeping it in check: 1. Information is most valuabe when it's fresh.[14] 2. When sellers of contraband advertise to potential customers, they also advertise to law enforcement authorities. „Digital piracy can't be eliminated, any more than any other kind of illegal activity, but it *can* be kept under control. All that is required is the political will to enforce intellectual property rights."[15]

The political recognition of a problem and the will to find a solution are certainly there but the debate is still ongoing as to the kind of IP rights (exclusive rights, remuneration rights or what exactly?) and to the right level of enforcement. In the end, it will have to offer a solution to the challenge of how to make money without destroying the promises of the digital environment.

Discriminating Technology: DRM

> „The development of the Internet has ... created significant challenges to any distribution model which depends on scarcity. ... The application of technology to this problem, if it is to be effective, must therefore in some way reestablish a point of scarcity on behalf of the rights holder. However, this raises a fundamental paradox, ... – that ... the business of publishers ... lies in providing access rather than in preventing it. ... Nevertheless, unless copyright is to be abandoned as a mechanism for trading in intellectual property entirely, it will be essential to find an answer to this paradox."[16]

> „Trusted systems presume that the consumer is dishonest."[17]

> „Most people, I think, don't even know what a rootkit is, so why should they care about it?" (Sony BMG Global Digital Business President Thomas Hesse[18])

> „It's very important to remember that it's your intellectual property – it's not your computer." (Homeland Security to Sony BMG)

DRM is designed for controlling who uses what in which way (how, where, when, how often etc.). „Who" and „what" require identification schemes for customers and for copyright protected works. The „what" needs to be protected against unauthorized uses by the „who." The „who," the legitimate customer, is therefore the main enemy. „In which way" requires a vocabulary for naming the various dimensions of usage, a so called rights expression language (REL) in which a machine-readable version of the licensing contract is written.[19] And thirdly, a cryptographic mechanism is needed to enforce the usage restrictions stipulated in the license.

The most problematic element is the enforcement mechanism. Books and records are sold with „all rights reserved." If someone infringes these rights, e.g. by republishing material without permission, the act of publishing makes him vulnerable to public and private investigation. What people do in the privacy of their home is of no concern to copyright law. The presumption here is that the consumer is honest, and enforcement sets in after the fact of infringement.

In contrast, with DRM the presumption is that the consumer is dishonest as Stefik, one of the founders of the concept clearly stated. It controls not only sales and delivery (e.g. to prevent shoplifting) but after-sales usage on the devices in the consumer's home. Rightsholders are in fact enlisting the user's PC and AV equipment to become enforcers of their use restrictions vis a vis the customer. These enforcers keep works locked up unless the conditions set in the REL are met. And exploiters reserve themselves even the right to change these conditions long after the transaction is concluded.[20] The enforcers are sending information about the works concerned and how they are used back to the rightsholder and request authorisation for operations from them. Rightsholders (or their DRM service providers) remotely control the enforcers, requesting information, sending

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[14] This is not a convincing argument because fresh info can be redistributed instantly.
[15] Shapiro/Varian 1999: 93
[16] WIPO SCCR/10/2, Current Developments in the Field of Digital Rights Management, prepared by Jeffrey P. Cunard, Keith Hill, and Mr. Chris Barlas, 1. August 2003, http://www.wipo.org/documents/en/meetings/2003/sccr/pdf/sccr_10_2.pdf
[17] Mark Stefik, Letting Loose the Light: Igniting Commerce in Electronic Publication, in: Stefik, M. (Hrsg.), Internet Dreams: Archetypes, Myths, and Metaphors, MIT Press, Cambridge Mass. 1996
[18] Sony Music CDs Under Fire from Privacy Advocates, NPR, 4.11.2005, http://www.npr.org/templates/story/story.php?storyId=4989260
[19] The rights restrictions enforced by the major music download services are listed by the EFF: The Customer Is Always Wrong: A User's Guide to DRM in Online Music, n.d., http://www.eff.org/IP/DRM/guide/
[20] For instance, in April 2004, Apple decided to modify the DRM of its iTunes system so people could burn the same playlist only 7 times, down from 10.

instructions, updating the software if fixes to cracks or new control mechanisms become available, and -- if such in situ renewal is not possible – even disabling a DRM altogether, thereby locking away the user's legitimately purchased content it controls for good. It's hard to see how this is not a systematic, pervasive, continous intrusion of the private sphere.

That such powerful, intrusive and far-reaching technology should require legal regulation seems obvious. And indeed in 1996, WIPO established a global framework specifically for DRM. Alas it was not to protect the private sphere or the open architecture of PC and Internet and the promises they hold, but to protect DRM systems themselves. The WIPO Copyright Treaty[21] requires member states to provide „adequate legal protection and effective legal remedies" against the circumvention of what is termed „effective technological measures" for copyright protection.[22] Which is ironic because if the technology itself would be effective it would not need any additional legal protection. But indeed, every single DRM scheme that reached the market was cracked in no time.[23]

The name „Sony" used to stand for a landmark decision in favor of consumer rights.[24] Since November 2005, it stands for the worst in DRM: a ruthless approach of providing maximum security for content while entirely disregarding consumer's rights and security needs.

The story broke, when on 31 October 2005 Windows systems engineer Mark Russinovich posted a remarkable discovery to his blog.[25] Russinovich who maintains a software called RootkitRevealer (RKR) had been using it to scan his own system and was shocked to find that it had been „infected." A rootkit is a set of system tools that hide any trace of their existence and execution. Typically, a malicious intruder installs a rootkit on a compromised system so he can log in, intercept keyboard inputs, copy files, set up network connections e.g. to attack other systems or send spam etc., all completely invisible to the usual system administration tools and virus and spyware scanners.

Through closer inspection Russinovich could trace the cloaked files on his machine to the British company First 4 Internet (F4I) that sells a DRM technology called eXtended Copy Protection (XCP[26]), among others to Sony BMG. He then remembered that he had recently purchased a Sony BMG CD that on a Windows PC can only be played using the proprietary media player that ships on the CD. When he first started it up, the music CD had installed the hidden DRM technology on his computer. The DRM-enabled media player allowed the user to play the audio files on the computer, make a single copy onto he harddisk and up to three copies onto recordable CDs where the copies are also DRM controlled.

After Russinovich had understood what had happened to his system, he wanted to uninstall the files but did not find any indication in the system controls or on the CD how to do this. So he manually uncloaked and deleted the files concerned only to find out that after rebooting, his CD drive had stopped working. He had to apply some more voodoo to the registry before he got his system running properly again. His conclusion:

> „The entire experience was frustrating and irritating. Not only had Sony put software on my system that uses techniques commonly used by malware to mask its presence, the software is poorly written and provides no means for uninstall. Worse, most users that stumble across the cloaked files with a RKR scan will cripple their computer if they attempt the obvious step of deleting the cloaked files."[27]

Russinovich's blog entry generated an outcry that immediately reached the mainstream media. It turned out that since mid-2004 Sony BMG had been selling several million CDs of about 50 albums with F4I's DRM on them.[28] A sample by mid-November 2005 showed that computers on at least half a million networks were affected.[29] The case triggered a consumer boycott[30] and a series of law suits, including one by the Attorney

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[21] And the parallel WIPO Performances and Phonograms Treaty.
[22] Art. 11 WCT.
[23] Which is strong evidence for the conviction of many crypto experts that DRM is impossible in principle, that „digital files cannot be made uncopyable, any more than water can be made not wet." (Bruce Schneier, The Futility of Digital Copy Prevention, in: Crypto-Gram Newsletter, Mai 15, 2001, http://www.schneier.com/crypto-gram-0105.html#3)
[24] See http://www.eff.org/legal/cases/betamax
[25] Mark Russinovich, Sony, Rootkits and Digital Rights Management Gone Too Far, October 31, 2005, http://www.sysinternals.com/blog/2005/10/sony-rootkits-and-digital-rights.html.
[26] „XCP has been in commercial use since 2002 and is actively being used by the four major Record Labels for pre release copy protection. In 2005 XCP will be in use on commercial CDs." (XCP Overview, http://www.xcp-aurora.com/xcp.aspx, as accessed in January 2006)
[27] ibid.
[28] http://cp.sonybmg.com/xcp/english/titles.html
[29] Dan Kaminsky did this research using cached queries from DNS servers (http://www.doxpara.com/?q=sony). Bruce Schneier comments: „Those are amazing infection numbers, making this one of the most serious internet epidemics of all time -- on a par with worms like Blaster, Slammer, Code Red and Nimda." (Sony's DRM Rootkit: The Real Story, November 17, 2005, http://www.schneier.com/blog/archives/2005/11/sonys_drm_rootk.html).

General of Texas for violations of that state's Consumer Protection Against Computer Spyware Act of 2005 and a number of class-action suits also for alleged violation of consumer protection statutes against deceptive business practices and against spyware.[31]

Sony BMG's reaction was initially to deny all wrongdoing, then to stop manufacturing XCP discs, to publicly apologize to its customers,[32] to provide means to remove the software from affected systems (that created new security vulnerabilities), next to recall the affected CDs from the stores and finally – three weeks after the story broke – to offer to exchange all XCP CDs for non-copy protected discs and MP3 files.[33] The company so far managed to avoid a court ruling by agreeing to settle the class-action suits. It announced that it will not put any DRM on its CDs for now and review its content protection strategy.

Several points of interest beyond the spectacular fiasco of the individual Sony BMG/F4I[34] case can be noted.

Security

Security that DRMs supposedly increases, is, in fact, threatened by a range of new attack channels. By installing powerful tools for controlling user's systems, DRM gives third parties the opportunity to exploit them for malicious purposes. The online-transactions involved in DRM (original licensing, authentication, license renewal, revocation etc.) offer access to trojans, viruses and other malware.[35] In the case of XCP, several viruses made use of the rootkit.[36] Department of Homeland Security Assistant Secretary Stewart Baker addressed Sony BMG, saying: „It's very important to remember that it's your intellectual property – it's not your computer. And in the pursuit of protection of intellectual property, it's important not to defeat or undermine the security measures that people need to adopt in these days."[37] XCP shows the attitude of the designers and operators of DRM: customers allegedly use their computers to attack content. In a measure of self-help, the exploiters take away the control over the computer from the user in order to enlist it for providing maximum security for the content. At the same time they are not concerned at all about securing that computer against attacks by third parties.

Expropriation

The attitude of having the right to expropriate the user's machine is most blatantly demonstrated by the fact that Sony BMG did not envisage an uninstaller. Only after the public outcry did the company hesitatingly offer several generations of mor and more functional tools.[38] Sony BMG's attitude was: the DRM is installed for good. The idea that users might wish or need to remove it completely did not even occur to them.

Privacy

DRM systematically undermines privacy. In the case of Sony BMG, it became known that the rootkit is „phoning home," i.e. sending information about the CD being played to a Sony server. The company denied using the information for any other purpose than checking for updated lyrics or cover art. That may well be so, only that there are no safeguards or ways for users to verify this. Users can only take their word for it that they do not abuse it. Expecting users to trust a company that is distrusting its users and has given them every reason to distrust that company is a proposition hard to swallow.

Freedom of Choice

DRM takes away user's freedom of choice. Sony BMG technically and contractually tied the use of its CDs to a number of approved players. Since DRM is deeply embedded into and therefore specific to a certain operating

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[30] e.g. http://www.boycottsony.us/

[31] Twenty-one class action lawsuits that were filed across the United States have been consolidated into one that covers anyone in the US who purchased or used an XCP or MediaMax CD (http://sonysuit.com/). At the time of writing it was in settlement negotiations (http://www.eff.org/IP/DRM/Sony-BMG/sony_settlement.pdf). The Texas lawsuit is not affected by the settlement and will continue (http://www.oag.state.tx.us/oagNews/release.php?id=1266).

[32] To Our Valued Customers, November 18, 2005, http://blog.sonymusic.com/sonybmg/archives/111505.html

[33] Sony BMG's XCP Exchange Program: http://www.upsrow.com/sonybmg/

[34] One might argue that First 4 Internet can not be seen as typical for the DRM industry because the company acted in an exceptionally incompetent and careless way. But F4I is no exception. On a different set of CDs Sony BMG deployed SunnComm's MediaMax which targets Macintosh computers and has many of the same features as XCP and is worse in that it installs even if the user does not accept the EULA (EFF's MediaMax Security Vulnerability FAQ: http://www.eff.org/IP/DRM/Sony-BMG/mediamaxfaq.php).

[35] As the attacks on Windows Media Players in Januar 2005 proved. Microsoft's answer: it's not a bug, it's a feature. (Microsoft: No flaw in Media Player, ZDNet Asia 17.1.2005, http://www.zdnetasia.com/news/security/0,39044215,39213482,00.htm)

[36] Viruses use Sony anti-piracy CDs, BBC News, 11 November 2005, http://news.bbc.co.uk/2/hi/technology/4427606.stm

[37] Brian Krebs, DHS Official Weighs In on Sony, Washington Post Blog, 11.11.2005, http://blogs.washingtonpost.com/securityfix/2005/11/the_bush_admini.html

[38] Mark Russinovich, Sony: You don't reeeeaaaally want to uninstall, do you?, November 09, 2005, http://www.sysinternals.com/blog/2005/11/sony-you-dont-reeeeaaaally-want-to_09.html

system this amounts to an approval or disapproval of the whole platform. And this amounts to an exclusion of free operating systems like GNU/Linux or BSD. This is ironic in this story so rich with paradox and irony: While XCP excludes users of free software, F4I apparently freely helped itself to free software for building it, and doing so in violation of the license of that software.[39] Again, this might be considered to be especially unconscionable behaviour of a single company. What is true for all DRM is that it systematically excludes free software which is base on the freedom to modify – a freedom that DRM systems necessarily must prevent.

Is it DRM or is it malware?

The slow reaction of antivirus companies to Sony BMG's rootkit has been another core issue in the debate. That the experts of these companies that users pay to keep their computers clean and safe should not have noticed an infection of more than half a million computers over a period of over a year is hard to imagine. But if they knew, why didn't they act? E.g. Symantec took two weeks after XCP's spectacular disclosure to offer an uncloaking tool. About Sony BMG's technology they say: „This rootkit was designed to hide a legitimate application, but it can be used to hide other objects, including malicious software."[40] It seems that these companies had found themselves in a double-bind: If the technology in question is a „legitimate DRM" removing, deactivating, or otherwise impairing it is a violation of the anti-circumvention provision of digital copyright law. On the other hand, knowing about the security risk and not providing their customers with a remedy might make them liable for breach of contract. A fine line to walk. So they took the decision to do nothing and join Sony BMG and F4I in hoping that nobody ever finds out about the rootkit. But the old wisdom proved itself again: that security by obscurity is a really bad idea. From a security expert's point of view the case is clear: „The only thing that makes this rootkit legitimate is that a multinational corporation put it on your computer, not a criminal organization."[41]

Mental Lock-In

The first step to finding a remedy is to assert that there is a problem. But the two companies even after discovery of the rootkit, maintained that XCP is not mal- or spyware, and that it is not compromising user's security. Only after this could no longer be denied, did the companies take action. Today Sony BMG recommends using the Microsoft products „Windows AntiSpyware" and the „Malicious Software Removal Tool" for removing their content protection system.[42] Even when Maarten Steinkamp, CEO of Sony BMG Europe, had to admit that the company „had disgraced itself not just a little bit but a great deal," he defended the approach of regulating the availability of their music in some way. He asserted that XCP was a good idea but a bad implementation.[43] Under these circumstances, it is hard to see what else it takes for him and his colleagues in the content industry to understand that not the specific system but the fundamental idea of DRM is the problem.

The greatest danger of DRM yet might turn out to be the mental lock-in it creates. The pattern becomes blatantly visible in the EU Commission's recent review of its Database Directive.[44] The Commission found that the implementation of this uniquely European protection for collections of facts conincided with a drop in the number of European databases by a quarter, while during the same period the global database market had grown considerably without such protection.

„With respect to ,non-original' databases, the assumption that more and more layers of IP protection means more innovation and growth appears not to hold up." With this clear argument one would expect the Commission to recommend to repeal the Directive, but it finds surprisingly strong arguments for leaving the Database Directive unchanged: „even if a piece of legislation has no proven positive effects on the growth of a particular industry, withdrawal is not always the best option. Removing the ,sui generis' right and thereby

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[39] Close scrutiny of XCP showed that it contains code from Lame and FAAC, free audio decoders under LGPL, and from the VideoLAN media player (VLC) under GPL. From the latter, a function was used that -- more irony -- DeCSS developer Jon Lech Johansen had contributed to VLC in order to circumvent Apples DRM FairPlay. (Sam Hocevar, Johansen's co-author of the GPL'd DRMS code, confirms that the implementation used in XCP indeed originates from his GPL'd code, 21 Nov 2005, http://sam.zoy.org/blog/2005-11-21-suspicious-activity-indeed; J. Alex Halderman found inactive but fully functional code that provides iTunes and iPod compatibility, Hidden Feature in Sony DRM Uses Open Source Code to Add Apple DRM, December 5, 2005, http://www.freedom-to-tinker.com/?p=940.

[40] http://securityresponse.symantec.com/avcenter/venc/data/securityrisk.aries.html

[41] Bruce Schneier, Sony's DRM Rootkit: The Real Story, November 17, 2005, http://www.schneier.com/blog/archives/2005/11/sonys_drm_rootk.html

[42] http://cp.sonybmg.com/xcp/english/faq.html

[43] "Der Blues ist vorbei", Die Welt, 19 November 2005, http://www.welt.de/data/2005/11/19/805809.html

[44] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=en&numdoc=31996L0009; First evaluation of Directive 96/9/EC on the legal protection of databases, 12.12.2005, http://europa.eu.int/comm/internal_market/copyright/docs/databases/evaluation_report_en.pdf

allowing Member States to revert to prior forms of legal protection for all forms of ‚non-original‘ databases that do not meet the threshold of ‚originality‘, might be more costly than keeping it in place.“[45]

The same kind of mental lock-in also characterises the debate about DRM: Circumvention-protected DRM has failed to produce measurable improvements in the production of copyright works. The number of artists and independet publishers who speak out against DRM is rising.[46] Nevertheless, rights-exploiting industries claim that DRM and its legal protection are crucial to the continued success of their activities. While DRM is dysfunctional by all rational standards, the attachment of the rightsholders to the new anti-circumention provision is „a political reality.“ This is all very complex, so that the benficiaries of exceptions, in particular the academic community, get confused and start complaining because of a lack of (proper) understanding. Reverting to forms of copyright protection prior to circumvention-protected DRM might be more costly than keeping the DRM infrastructure established at high cost over the last 15 years in place. It doesn't do any good, it does do harm, but industry likes it, so let's keep it anyway.

Clearly, we need to break through the mental lock-in and think of a fundamentally different approach.

L'Alliance public.artistes: the Global License

> „The online transmission right, collectively administered, and subject to a statutory license, is the best model for music rights administration in the digital age; it is a full, fair and feasible solution to the dilemma of online music licensing. If implemented, it will allow an online music marketplace to flourish.“ (Bennett Lincoff, former Director of Legal Affairs for New Media at ASCAP, 2002)[47]

When in 1965 the private copying exception was ‚invented‘ in Germany, the protection of the private sphere played a crucial part in it. In the 1950s, audio tape recorders came into household reach. The music collecting society GEMA demanded that dealers take down passport information of customers buying tape recorders and reporting them to GEMA. The German Supreme Court decided that the producers and retailers of recording equipment could indeed be held liable for copyright infringement, but that the kind of controls GEMA was asking for would conflict with the consumer's right to inviolability of his home. Against this background, the novellation of the German Copyright Act of 1965 introduced the private copying exception with a levy on recording devices, and from 1985 also on recordable media, on photocopying machines and on each photocopy. The privat copying exception was a reasonable reply to a situation prevalant everywhere. Many countries around the globe therefore adopted it as well.[48]

Today we are in a comparable situation. Filesharing continues to grow. DRM is not a solution but a collective illusion of the content industry. The IT industry selling these technologies to the content industry actually knows better. That's why Apple is not using Digital Restrictions Management on iTunes but ‚Digital Inconvenience Management.‘[49] Steve Jobs is not shy about the reasons behind this. He told Rolling Stone Magazine: „We said [to the record companies]: None of this technology that you're talking about's gonna work. We have Ph.D.'s here, that know the stuff cold, and we don't believe it's possible to protect digital content.“[50]

As an alternative model, a permission to fileshare compensated by a levy paid flatly by Internet service subscribers, collectively managed and allocated to rightsholders according to download-count of their works has been proposed. Since 2001, there has been a lively debate among law scholars, authors and musicians, publishers and representatives of collecting societies, among them William Fisher, Lawrence Lessig, Jim

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[45] See also James Boyle: Two database cheers for the EU, Finanancial Times.com, January 2, 2006, http://news.ft.com/cms/s/99610a50-7bb2-11da-ab8e-0000779e2340.html
[46] E.g. the US band My Morning Jacket told Sony BMG to drop its DRM and sent unrestricted CDs to their fans (Music group revolts over Sony DRM, PC Pro, 15 Dec 2005, http://www.pcpro.co.uk/news/81368/music-group-revolts-over-sony-drm.html). Campaign by the federation of German independent labels (VUT): „Respect The Music – Copy Protection Free“ (http://www.respect-the-music.com/). See also „Why DRM Everything?“ by David Pakman, CEO, eMusic.com, the world's second largest music download service offering one million songs from 3,800 indie labels (http://www.groklaw.net/article.php?story=20051231013858642&mode=print).
[47] Bennett Lincoff, A Full, Fair And Feasible Solution To The Dilemma of Online Music Licensing, New York, New York, November 22, 2002, http://www.bennettlincoff.com/music.pdf
[48] For the history of the private copying exception see Bernt Hugenholtz, Lucie Guibault & Sjoerd van Geffen, The Future of Levies in a Digital Environment, Final Report, Institute of Information Law, University of Amsterdam, March 2003, http://www.ivir.nl/publications/other/DRM%20Levies%20Final%20Report.pdf
[49] Richard Stallman in p2pnet interview, http://www.p2pnet.net/story/7840
[50] Steve Jobs: The Rolling Stone Interview, December 03, 2003, http://www.rollingstone.com/features/featuregen.asp?pid=2529

Griffin, Bennett Lincoff and Neil Netanel.[51] The model has also been positively explored by a number of collecting societies in Scandinavia, Australia, Canada and France.

In France, at the initiative of the music collecting societies ADAMI and SPEDIDAM, fifteen organisations of musicians, photographers, designers, independent producers, education, Internet users and consumers joined hands in the Alliance public.artistes in order to promote what they termed the Licence Globale that would legalise file sharing.[52]

The envisaged legal construction in Francre extends the interpretation of the existing private copying exception to include downloads. For uploading no exception to the newly created right of making available is introduced. Rather, the exclusive right remains in place but is made subject to mandatory collective administration and still provide payment to rightsholders.[53]

When proposing new models, the issue of their compatibility with the international and European copyright framework alway comes up. Therefore l'Alliance asked France's most renowned copyright scholar to look into this matter. The study conducted by Carine Bernault and Audrey Lebois under the direction of Prof. André Lucas at the Institut de Recherche en Droit Privé de l'Université de Nantes concludes that a system of compensation for the exchange of works on the Internet is indeed feasible.[54] They find downloading strictly for private use within the range of the private copying exception. Adapting the existing system of remuneration, by analogy, the ISP would be the one owing the payment to a collecting society, that he might or might not pass on to his customers. The study does not find a conflict with the three-step test of the Revised Berne Convention.

For the act of making available, the authors are comparing the impact of photocopying on the sale of books in 1994, to today's impact of peer-to-peer file-sharing on the sale of audio CDs. The solution that French lawmakers adopted in 1995, was to make the reproduction right by reprography subject to mandatory collective management. „Loin d'être perçue comme une remise en cause des principes fondateurs du droit d'auteur, la gestion collective obligatoire doit au contraire permettre de ,renforcer et (….) organiser la protection accordée aux auteurs contre les violations de leurs droits fondamentaux, reconnus d'une manière absolue depuis 1793 dans le droit français.'"[55] It is the best system, it was argued then, for safeguarding the payment of royalties, while respecting rights that also must be protected: those of all the users. While the reasoning in 1995 was deliberately restricted to copies on paper, the principles were formulated already with the increasing dematerialization of media in mind. In the case of cable retransmission, mandatory collective management was imposed by the EU Directive of 1993, which was fully approved by French lawmakers as ensuring the balance of interests. In both cases, a decisive argument here was the pratical impossibility of exerting the rights individually because of the massive scale of uses, the great number of works involved and the impossiblity for users to identify and locate the rightsholders in order to negotiate a license individually.[56]

Nothing thus prohibits today, conclude the authors, to consider such a solution for the comparable challenges of peer-to-peer file-sharing. In addition, they find nothing in France's international obligations that could constitute an obstacle to the Global License insofar as it does not impose a limitation or exception on the exclusive right.

At the time of writing, France is in the process of implementing the EU Copyright Directive. The first reading of the French DADVSI bill (droit d'auteur et aux droits voisins dans la société de l'information)[57] and its more than 250 amendements[58] started on 20-22 December 2005. The parliamentary debate could not be concluded, was withdrawn from the agenda and is expected to be continued in March 2006.

The Global License was introduced to the DADVSI bill by two amendments in identical wording, one introduced by Alain Suguenot from the conservative government party Union pour un Mouvement Populaire (UMP) and in by a group around Socialist Christian Paul.[59] It prevents the author from prohibiting the reproduction of works, with the exeption of software works, from an online communication service by

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[51] For an extended link-list on ACS see http://crosscommons.org/acs.html. For a discussion of the model in context see V. Grassmuck, Alternative Kompensationssysteme, in FIfF Kommunikation 4/2004, p. 49-51.
[52] http://alliance.bugiweb.com
[53] For similar exclusive rights subject to mandatory collective administration in the Hungarian Copyright Law, see Silke von Lewinski, Mandatory Collective Administration of Exclusive Rights. A Case Study of its Compatability with International and EC Copyright Law, e.Copyright Bulletin, No. 1, January - March 2004.
[54] Peer-to-peer et propriété littéraire et artistique. Etude de faisabilité sur un système de compensation pour l'échange des oeuvres sur internet, June 2005, http://alliance.bugiweb.com/usr/Documents/RapportUniversiteNantes-juin2005.pdf
[55] ibid., p. 61
[56] ibid., p. 63 f.
[57] http://www.assemblee-nationale.fr/12/dossiers/031206.asp
[58] http://recherche.assemblee-nationale.fr/amendements/resultats.asp?NUM_INIT=1206
[59] Amendements No. 153 and 154 (http://recherche.assemblee-nationale.fr/amendements/resultats.asp?NUM_INIT=1206&ResultStart=151)

individuals for private use and noncommercial purposes, provided that these reproductions are subject to remuneration.

In addition, the Paul amendement, following the Lucas study, argues that the Global License fulfills the criteria of the three-stept test because 1) the exception is limited to a special case: it relates only to the copies carried out for a private use for noncommercial purposes carried out by downloading from online communication services; 2) it does not cause an unjustified injury since it is directly related to a remuneration; 3) it does not interfere with the normal exploitation of a work insofar as there will be no alternative for several years to cover the massive number of reproductions without authorization by rightsholders.

These two core amendements for the Global License were passed late on 22 December 2005 by a narrow margin with only one tenth of the Members of Parliment present. In subsequent amendements, the neigbouring rights are to be included as well and the system of compulsory collective management has to be adapted to include remuneration for the right of communication to the public concerning noncommercial uploading between private individuals. ISPs are made responsible for paying the levy. They will offer their customers the option to express their wish to benefit from the downloading exception and their agreement to the contract on the making available to the public.[60] Internet users who do not sign the single agreement will remain liable to prosecution and legal sanctions for infringement if the fileshare.

An amount of 10 Euro per month is being discussed. With an estimated eight to ten million regular users of filesharing networks in France this would add up to more than one billion Euros per year.

If the textbook argument for price discrimination is that without it the low willingness-to-pay customers would not be served at all then the global license is even better. Everyone is served. The interest in a work is not distorted by price.

A flatrate is privacy-friendly. No personal data has to be registered and retained for centuries as in the case of DRM. It makes mass-criminalization of users unecessary and therefore eases the burden on filesharers and on law enforcement agencies alike. It creates significantly smaller transaction costs compared to DRM, and it is competition-friendly because it prevents market-distorting effects by technology monopolies that are to be expected for DRM. It ensures a compensation to authors and performers that is negotiated and managed transparently and fairly by collecting societies under public supervision. Therefore, for consumers, for authors, performers and publishers alike a flatly levied permission like the French Global License is the best solution.

But will it hold? At the time of writing it looks unlikely. During the Midem 2006, Libération titled „Au Midem, guerre totale à la licence globale.“[61] Government has made it a point to undo the Global License. The real issue in the ongoing French copyright law reform lies at the other end of the scale: one powerfully backed amendement calls for making DRM compulsory in all software „commonly utilised for the use and the illicit sharing of works.“ DRM mandates have been suggested a few times and rejected even in copyright-maximalist USA. Most infamously, the Consumer Broadband and Digital Television Promotion Act (CBDTPA)[62] formerly known as Security Systems and Standards Certification Act (SSSCA), was a US bill proposed by Senator Fritz Hollings which would have prohibited any kind of technology which can be used to read digital content that does not incorporate DRM. It was killed in Congress in 2002. In France it was originally introduced by a group around Vivendi Universal, the largest music collecting society SACEM and the Business Software Alliance. In February 2006, two amendements to the same effect appeared, one signed by the Ministry of Justice, the other supposedly by the Présidence de la République.[63]

Even if the global license at this point is repealed or watered down to cover only works that its authors have agreed to release for filesharing, the French initiative is makes a strong point and puts some Commons Sense back into the debate. It provides legal arguments for the feasibility of a flatrate solution. It shows that an increasing number of authors, musicians, publishers and consumers find it a preferable alternative to DRM. And even a growing number of politicians are hearing the message.

The fundamental paradox can be resolved in both directions: Publishers can make it their business to prevent access in an environment of generalized open access in order to sell access under controlled conditions, i.e. DRM. Or they make it their business to provide access and add value while ensuring payment based not on

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[60] Amendement N° 212
[61] http://www.liberation.fr/page.php?Article=352912
[62] http://www.eff.org/IP/SSSCA_CBDTPA/20020321_s2048_cbdtpa_bill.pdf
[63] Amendement VU : le retour de l'amendement qui a mis le feu au Net, Chungos, 3 février 2006, http://chungos.free.fr/article.php3?id_article=15

privileged access but on actual use. Our choice for the future of the digital revolution is marked by the concluding quotes:

> „IT is a powerful tool with diverse applications. Our challenge is to put that power at the service of all humankind." (Kofi Annan, UN Secretary General[64])

> „We are well on our way to perfecting the ‚Read-Only' internet – that network in which every bit of culture can be bought in a single click, but bought with the rights to consume only." (Lawrence Lessig[65])

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[64] Secretary-General call on Governments to do their Part in Bridging the Digital Divide, 24 January 2001, http://www.unis.univienna.org/unis/pressrels/2001/sg2768.html
[65] Lawrence Lessig, Creatives face a closed Net, Financial Times, 28 December 2005, http://news.ft.com/cms/s/d55dfe52-77d2-11da-9670-0000779e2340.html