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Content

Editorial:
Knock out by copyright expiration. The JibJab Media Inc. v Ludlow Music Inc. copyright affair watched from a distance

By: Knud Böhle, ITAS, Karlsruhe, Germany

Abstract: This Editorial is about two intertwined success stories, and a third derivative one about copyright. It is about the success of Woody Guthrie's song "This Land is Your Land", and the success of JibJab Media's web animation "This Land. A parody of Woody Guthrie's". Our focus is on the copyright thread, which runs in parallel and ties both stories together. Although at the time of writing the case seems to be settled, many relevant questions remain open.

Keywords: copyright, fair use, public domain

The JibJab success story

JibJab Media Inc., based in California and run by Gregg and Evan Spiridellis, achieved enormous attention with its two minute humorous and satiric flash animation about the U.S. presidential election campaign. In my own words and based on what I have heard and seen I would describe the work (JibJab 2004) as follows: It builds on the well-known Woody Guthrie song in quite an innovative way: the original lyrics are by and large replaced by polemics to be heard in the election campaign, which are elaborated and acuminated here for satirical purposes. The lyrics are sung by „voice talent" Jim Meskimen, who imitates the voices of President Bush and Senator Kerry turning the song into a duet with a new potential to play around with the meanings of the possessive pronouns „my", „your", and „our". In the video the singing protagonists appear as animated caricatures with faces taken from the candidates' Web sites, as Gregg Spiridellis said in an interview (CBS 2004). Adrienne Spiridellis contributed the instrumental part (which sounds like ukulele), which apparently is played without any artistic ambition, almost mechanically. JibJab released its animation on the 9th of July 2004 (EEF 2004b), and drew 10.4 million unique visitors in July (comScore 2004). It was also broadcasted on various occasions on TV (see EEF 2004b).

The Woody Guthrie success story

„This land is your land" was composed by Woody Guthrie in February 23, 1940, and recorded in 1944. Joe Klein, his biographer, writes: „In April, 1944, Woody recorded about 120 of his songs. One of the songs at the last, undated, session was Woody's old Irving Berlin parody, ‚God Blessed America', changed slightly, with a new tag line at the end of each verse (‚This land was made for you and me ...') and a new title, ‚This Land Is My Land' " (Klein quoted in Kochlin 2002). This song also had made a considerable carrier: on the one hand it carried on as protest song with a focus on property and the social inequality (see Spivey 1996). On the other hand it was understood by many as a song of national unity. This double use was facilitated by the different character of the various verses. There are some, which can be easily adopted in a nationalistic way – those which are usually recorded (even by protest singers). In this domesticated form the song made it to the school books, not preventing however pupils to be creative and to reinvent the original focus on property even more drastically than Guthrie himself (e.g. *This land ain't your land, this land is my land / I've got a shotgun, and you ain't got one / I'll blow your head off if you don't get off / This land is private property*; quoted in Walker 2004). Further criteria of success to be applied are uses of the song as an advertising jingle of United Airlines and Ford Motor Company, and as theme song for George McGovern's 1972 presidential campaign (see Klein quoted in Kochlin 2002), and last not least efforts to make the song the national anthem (see e.g. Pete Seeger quoted in Kochlin 2002).

The copyright story of This Land

The history leads us back to at least the 19th century and an old Baptist hymn „Oh my Lovin‘ Brother“ (that‘s what Joe Klein writes). A slightly different category is used by Mark Zwonitzer and Charles Hirshberg who classify it as „African-American sacred song“ (quoted by Chuck Welch on BlogJazz, Welch 2004). In a collection of „Hymns and praise songs“ maintained by Doug Plata, a physician from California, I found the following lyrics: *Oh my loving brother, when the world's on fire / Don't you want God's footstool to be your pillow? / Oh hold me over to the Rock of Ages, / Rock of Ages cleft for me*. Tastes like public domain.

An early recording of this gospel goes (probably) back to the late 20ies when a black singer and guitarist Blind Willie Davis recorded it as "Rock of Ages" (see Welch 2004). Next step, the Carter Family, which had begun to put African-American sacred songs on record, recorded it in 1930 under the title „When the World's on Fire". Text and melody are still those of the old hymn, while the transformation from gospel or blues style to country style is apparent. Michael Rader, incidentally a jazz fan and colleague working for the INDICARE project, used the word „song catcher“ in a LessigBlog on the issue to describe the activity of A.P. Carter, meaning someone copyrighting songs from the public domain (Rader 2004). The Guthrie song was written in 1940, but according to EFF (2004c), „the initial copyright term was triggered when Guthrie sold his first version of the song as sheet music in 1945“. In his first song book (Guthrie, 1945; available as facsimile on the net), which starts with an introduction against copyright for this type of song, he nevertheless claims „Words and music“ for THIS LAND. This might not be the complete truth given the origin of the melody mentioned already. In 1945 the copyright laws granted a copyright term of 28 years, renewable once for an additional 28 (EFF 2004c). Ludlow filed its copyright in 1956 and renewed it in 1984 believing it remains valid, while EFF disputes the claim arguing that copyright on the song then ran out when Ludlow failed to renew its registration in 1973 (see EFF 2004c).

The copyright story of This Land. A Parody…

The copyright story of JibJab is well documented thanks in particular to the Electronic Frontier Foundation and its Online publication Deep Links, to Wired reporting repeatedly about the progress of the controversy, and especially to Ernest Miller making his blog on the subject available at Corante (EFF 2004a-c, Dean 2004, Metz 2004a,b, Corante 2004). A good overview is also contained in the Complaint itself (EFF 2004b). Here are the main steps:

- **09/07/2004:** Release of the web animation „This Land“
- **20/07/2004:** Certified letter by Kathryn Ostien, Director of Copyright, Licensing & Royalties for Ludlow Music, Inc.
- **21/07/04:** Answer by Goldring Hertz & Lichtenstein, litigation counsel for Jib Jab, to the letter
- **23/07/04:** Sonnenschein, Nath & Rosenthal, litigation counsel for Ludlow, Inc. send a cease-and-desist letter to JibJab setting the litigation deadline 30/07/04 (Sonnenschein 2004)
- **26/07/04:** the same law firm sends a cease-and-desist letter to Atom Shockwave, which via its AtomFilms website hosts the video
- **28/07/07:** the Electronic Frontier Foundation, now litigation counsel for JibJab answers the afore mentioned letters (EFF 2004a)
- **29/07/04:** the Electronic Frontier Foundation sends its „Complaint for copyright misuse and for declaratory relief of non-infringement of copyright“ to the Unites States District Court for the Northern District of California (EFF 2004b).
- **24/08/2004:** JibJab dismisses its suit against Ludlow, and Ludlow is not planning to pursue any further legal claims against JibJab (EFF 2004c).

In the letter of July 23 Ludlow claims to be the exclusive copyright owner of the Woody Guthrie song. They accuse JibJab of having copied „the entire melody, harmony, rhythm and the structure" of the song without authorisation or consent, and claim this constitutes a „blatant and wilful copyright infringement". They reject the argument that the animation is a parody, because the „purpose and character of Jib Jab's work clearly is not to parody the original work" as it does „not comment on the themes of the song" and uses „too much word" of the original to be a parody. In addition they envisage „a significant negative impact on the market for the composition and any derivative work".

The July 28 response by EFF basically refers to the First Amendment and the „fair use" legal provisions. They regard the animation a „humorous political commentary of both actual politics and the classic" and as „a work that contains both transformative and original expressions of creativity to be encouraged by copyright". They hold that JibJab is engaging in political speech, and that fair use allows to „build upon, reinterpret, and reconceive existing works", and that transformative works with a non-commercial character do not supersede the original. Parodies are no substitute for the original. In contrast to Ludlow, EFF holds that the animation is a parody exploring the same themes as the original and uses „only a hand full of words". They also reject the argument of financial damage, as „effects of a derivate work on primary market would not be relevant under copyright law". With respect to the copyright of the melody, EFF points to the Carter Family recording and the traditional spiritual.

In the Complaint for copyright misuse of 29.7.04 by EFF, more or less the same arguments are put forward, however there is more emphasis on the weak copyright claim for the composition regarding the Guthrie Composition now a „derivative work" of the Carter Family"s work of 1930. The knock-out-argument however is that the Guthrie composition „is no longer protected by copyright and/or is part of the public domain".

Open questions

Although for the time being the case seems to be settled on these grounds, some questions remain. The overall question is what would have been the result of the conflict if Ludlow had been the exclusive rights owner? Would all these new types of creative works, enabled and pushed by the Internet as technology and repository, be legal or illegal? One should also consider, if a company like Ludlow would have licensed rights to JibJab for their non-commercial creative work under acceptable conditions? I guess they would not have, stifling creativity.

With respect to the character of the JibJab animation I wonder why the EFF did not play the public domain card right from the start. In my feeling the voice imitation as an element of the animation was not taken into account sufficiently in order to underpin the character of work as parody of the original. If the argument that the JibJab animation is a parody of a parody (given that Guthrie's song had been a parody of Irving Berlin's), is good for anything, I don't know. More interesting might be the observation on the „double use" character of the song, because the partisan view always tends to stress just one reception or perception.

Next, the commercial side of the affair seems still to be underexposed. As Natali Helberger of IViR – the legal expert within INDICARE – told me, the non-commercial character of a work is most important for the fair use argument. On the JibJab website there is a donation button. Assume this income mechanism would have generated considerable income caused by those out of 10 million+ spending a Dollar, or assume JibJab gets a share of the advertising income of the web hostsâ€|. How would this change the fair use argumentation? Turning to Ludlow, they probably won't suffer financial damage. On the contrary, they will experience an increase of music sales because the JibJab animation will have raised new interest in the original interpretation and other licensed interpretations of the song. Finally, as INDICARE is a European project we should not forget to ask how the same case would have been dealt with under European law. Volunteers to write the

story from a European perspective for INDICARE Monitor are welcome!

Bottom line

Why does this case matter for INDICARE? The answer is clear: the interests of small creative companies leveraging the new potential of the Internet are at stake as well as the interest of citizens to enjoy freedom of expression and of consumers who long for quality entertainment. A drawback of the preoccupation with „This Land" however is, as Woody Guthrie already noted in his songbook „ you think about these Eight words all the rest of your life", and I would add you will never ever get the tune out of your head.

About this issue

A short remark on what to expect in this issue: You will find three complementary articles dealing with interoperability. While Willms Buhse, among other things Vice Chair of the Open Mobile Alliance (OMA), provides insights into evolution and ambition of OMA standardization efforts, Gergely Tóth from Budapest (SEARCH) gives a well structured introduction to different music formats and their relation to DRMs, before he discusses the question how to achieve interoperability between them. Ot van Daalen, a Dutch lawyer, contributes a thoughtful and provoking opinion article on the tension between interoperability and information security, and suggests compulsory licensing as solution. In the remainder of the issue Lutz Niehüser examines the right to resell, which is of great importance to consumers, with respect to digital online media. Next, Ulrich Riehm, ITAS, presents the opinions of musicians about download, filesharing, DRMs etc. based on two U.S. surveys. Finally Rik Lambers shows – on the occasion of an IViR-workshop – why the abstract "code as code" debate is inherently about consumer concerns.

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Open DRM standards for interoperable mobile services. The Open Mobile Alliance releases OMA DRM 2.0 — moving from OMA 1.0 onwards

By: Willms Buhse, CoreMedia, Hamburg, Germany

Abstract: Media and entertainment content is increasingly used on mobile devices. While consumers want interoperable services that are easy to use and can be shared with others, content providers and mobile operators are looking to protect their investment in high value content. OMA DRM standards aim at fulfilling these demands and allow for superdistribution of mobile content. Within only 18 months, OMA DRM has become the most widely available mobile DRM standard implemented on currently over 80 handsets from all major phone manufacturers.

Keywords: mobile DRM, open standards, superdistribution, mobile content

Introduction

The sharing of media and entertainment via mobile devices is becoming an increasingly popular pastime and one of the most widely used mobile services. Typically, the media consumed on a mobile device today includes light media content types, with a lower value of around $1.00 – $2.00 per item, such as screensavers, wallpapers, or ring tones. As new smart phones and other devices with colour displays and richer audio capabilities penetrate the market, and as network capacities increase thanks to a growing number of W-LAN hotspots, to Bluetooth and IR (infrared), consumers are demanding access to higher value content. Mobile carriers and content providers aim to fulfil those consumer demands, while at the same time looking to protect their investments in high-value content. What they are looking for is a copy protection solution that is specifically designed for the needs in a mobile environment, i.e. mobile digital rights management (DRM).

The OMA approach of defining open standards for interoperable mobile services

This is where the Open Mobile Alliance (OMA), or, more specifically, the OMA DRM open standards for the mobile industry, comes in. Created in June 2002, its member-

ship now includes about 400 mobile operators, content, service and applications providers, wireless vendors and IT companies. Its goal is to deliver high quality, open technical specifications based upon market requirements and to reduce industry implementation effort.

OMA has taken a different approach to DRM when compared to other standards groups. The alliance aims to enable content delivery in an evolutionary process by implementing basic protection as soon as possible and then taking on more complex issues, thereby avoiding spending years addressing every threat before implementing a definite standard. In line with this, OMA and its members identified the market need for various levels of protection depending on the value of the content being protected.

Hence, the OMA DRM v.1.0 enabler release was developed rapidly in order to reduce time to market and to be immediately available for member companies to implement into their mobile products without requiring massive new infrastructure or changes to handsets. The first set of specifications was released in late 2002. Based on a subset of the Open Digital Rights Language (ODRL) rights expression language and entirely royalty-free, the OMA DRM v.1.0 has been adopted by all the major parties in the content value chain. This includes handset vendors, such as Motorola, Nokia and Siemens, and various European and Asian software providers among them the German content technology expert CoreMedia. While handset manufacturers are implementing DRM on their mobile phones, operators are integrating the DRM server components into their service delivery platforms.

The DRM v.1.0 enabler is a suitable protection system for lower value content, appropriate for lower bandwidth networks and simpler devices. Higher bandwidth provided by 2,5G and 3G mobile networks allows for larger content files to be transmitted over the air and smart phones and other mobile devices with removable media and larger colour screens support downloading and streaming of valuable rich media content. Hence, the level of security OMA DRM v.1.0 is no longer satisfying to content providers and mobile carriers who are eager to release high value rich media content such as exclusive music tracks and applications into the mobile marketplace but worry about a „napsterization“ of the mobile space. Nevertheless, in the lack of stronger protection, music labels today already use OMA DRM v.1.0 for full track music delivery.

The above factors contribute to the need for a continuously enhanced OMA DRM solution. OMA,s Browser and Content (BAC) Download and DRM Sub-Working? Group began working on its upgraded DRM v.2.0 enabler in early 2003 and announced it to the public in February 2004. The new specifications take advantage of expanded device capabilities and offer improved support for audio/video rendering, streaming content, and access to protected content using multiple devices, thus enabling new business models. They have added security and trust certificates that allow more complex and rich forms of media content, i.e. premium content, such as music tracks, video clips, animated colour screensavers and games, as well as improved support to preview and share content.

In the following we will go into more detail with respect to the business models enabled by OMA DRM v. 1.0 and 2.0.

OMA DRM v.1.0 – Basic content protection on three levels

Designed to protect light media content such as ring tones, wallpapers, java games, video and audio clips and screen savers, OMA,s first DRM enabler provides an appropriate level of security for these content types. It includes three levels of protection and functionality: Forward Lock, Combined Delivery and Separate Delivery, each level adding a layer of protection on top of the previous level.

- **Forward Lock:** The first level, Forward Lock, prevents the unauthorized transfer of content from one device to another. The intention is to prevent peer-to-peer distribution, or super-distribution, of lower value content. Often applied to subscription-based services, such as news

or sports, the plaintext content is packaged inside a DRM message that is delivered to the terminal. The device can play, display or execute the content, but not forward the object.

- **Combined Delivery:** Adding a rights definition to the first level, Combined Delivery equally prevents superdistribution (or forwarding), but also controls the content usage. The DRM message contains two objects, the content and a rights object. The rights object, written into the content using OMA Rights Expression Language (REL), a mobile profile of ODRL, defines usage rules that govern the content. The rules include and support all kinds of business models, including preview, time- and usage-based constraints. For example a complimentary preview, the permission to play a tune only once, using the content only for a specific number of days, or an annual subscription with non-interfering price models. When applying the Combined Delivery mechanism, neither content nor the rights object can be forwarded from the target device.
- **Separate Delivery:** The third level, called Separate Delivery, is the most sophisticated mechanism because here, the content is encrypted, thereby providing better protection for higher value content. Encrypted into DRM Content Format (DCF) using symmetric encryption, the content is useless without a rights object and the symmetric Content Encryption Key (CEK), which is delivered separately from the content. OMA requires that the CEK is delivered securely via WAP push directly to the authorized mobile device, where the DRM User Agent uses it for content decryption. An OMA DRM compliant device such as the Nokia 3200 and 6230 or the Siemens SX1 and C62 securely stores the rights objects outside of the consumer,s reach. Only the media player on that device has access to both encrypted content and the rights object including the CEK, in order to enable the consumption of the content by displaying or playing it.

People can download media and entertainment content and forward it to friends via MMS, but the recipient will not be able to use the content until they obtain their own CEK for content decryption. A "rights refresh" mechanism enables recipients of super-distributed content to contact the content provider to obtain rights to either preview or to purchase the content they have received. This so called superdistribution is the key benefit of Separate Delivery. OMA aims to promote superdistribution of content because it maximizes the number of potential customers through peer-to-peer recommendations while retaining control for the content provider through centralized rights acquisition.

Added protection and functionality by OMA DRM v.2.0

Version 2 of the OMA DRM standard, which CoreMedia has already integrated in its latest DRM solution, integrates additional security and trust elements. Security is enhanced by encrypting the rights object and the content encryption key, using the device,s public key to bind them to the target device. Integrity protection for both content and the rights object reduces the risk of either being tampered with. In addition to these enhanced security features, the specifications include additional trust elements. Mutual authentication between the device and the rights issuer, i.e. the content provider, will add trust to the downloading or messaging scenario. The rights issuer can accurately identify the device in order to determine the revocation status of the transaction. The new enabler also supports a wide variety of distribution and payment use cases.

Since February, several draft specifications have been announced as part of the OMA DRM 2.0 enabler release, which hint to the new capabilities in terms of security, trust, and support for business models:

- Enhanced security, enabled by the binding of rights objects to user identity: individually encrypted rights objects use a device's public key to provide cryptographic binding (to SIM/WIM); integrity protection for content and rights objects.

- Explicit trust mechanisms, including mutual authentication between a device and the rights issuer as well as device revocation, i.e. the rights issuer can identify the device revocation status.
- Support of secure multicast and unicast streaming: collaboration with 3GPP and 3GPP2 on a file format for protected streaming and progressive download
- Export to other copy protection schemes, for example the transfer of music to the SD card for a mobile music player.
- Support for a wide variety of business models, including metered time and usage constraints, subscription rights for content bundles and gifting.
- Support for messaging and peer-to-peer (i.e. super-distribution): viral marketing and a reward mechanism.

What are the benefits for consumers?

In general terms enhanced security means that premium mobile content will be available to users. More specifically, the advanced content management allows for example to easily move content and rights between several devices owned by one user, or moved to remote or removable storage and later be restored to the device. OMA 2.0 also provides for sharing of content between multiple users within a domain (i.e. community or family). Furthermore, content can be copied to SD card for a mobile music player thus allowing content use at unconnected devices. OMA also supports the export of protected content to other copy protection schemes, e.g. transfer of music to a DRM-enabled set-top box or computing device. Last not least, OMA provides for complimentary previews, i.e. super-distributed content can be previewed before purchase.

Bottom line

All in all, the standardization effort of OMA strives for a balance between suitable business models for content owners and the demand of consumers. The incremental evolution of OMA has led from OMA v 1.0 to v. .2.0. Handsets and other mobile devices that support OMA-defined DRM technology are already on the market. Currently about 80 models are available in all categories – given that the specifications were released 14 months ago this can be considered a tremendous success. The evolution of OMA enables the step from appropriate protection of „light media content“ to the protection of premium content. The success of premium 3G applications and high value media and entertainment content delivery lies in security, ease of use, and in the market penetration of suitable handsets. Numerous content suppliers have announced support for OMA DRM v.2.0, among them Sony and Time Warner. Carriers and handset vendors, who see significant revenue enhancement opportunities by offering pervasive mobile access to premium rich content, are expected to release handsets that have implemented OMA DRM v.2.0 by 2005.

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About the author: Dr. Willms Buhse became Head of Products & Marketing of CoreMedia and member of the executive board in November 2003. Prior to that he was over five years at Bertelsmann AG in Gütersloh, Hamburg and New York where he co-founded Digital World Services. In various positions, including head of marketing, head of consulting and product management, he has worked with customers such as AOL, AT&T, BMG, HP, Lycos, Matsushita, Napster, Orange and Universal. Before, Mr. Buhse was a consultant in technology and strategy projects at the German top-management consultancy group, Roland Berger & Partner and advised companies like Volkswagen and Deutsche Bahn.

Mr. Buhse is author and editor of two books and has been speaking at about 80 conferences on the subject digital distribution in the media industry. Mr. Buhse holds degrees in industrial engineering (Dipl.-Ing.) and in management sciences (Dipl.-Oec.) from the University of Hannover (Germany) and Madrid (Spain) and a Ph.D. in economics from the Technical University of Munich. His research thesis is titled: Digital Rights Management vs. the DarkNet – Competitive

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Contest of Formats. The race of audio formats is advanced, while the race for interoperability of protected formats is just about to start

By: Gergely Tóth, SEARCH Laboratory, Budapest, Hungary

Abstract: Audio formats are improving in terms of compression ratio as well as of audio quality, and new formats like OGG, FLAC or AAC have started to dethrone the former king of digital music formats MP3. The contest of formats however takes place at the level of protected formats too, i.e. integration of audio codec and DRMs. At this level proprietary formats still prevail, and interoperability - demanded by consumers and expert groups - consequently falls short. This article gives some background on popular audio formats and their connection to DRM systems, and discusses ways to achieve interoperability.

Keywords: audio formats, interoperability, audio codecs, LWDRM

Introduction

In the early times of digital electronic music copy protection was neglected: MP3 stormed the on-line world without DRM at all and people loved it. The main idea behind MP3, soon becoming the standard, was data compression (1:10) to help content providers and consumers to save bandwidth during music downloads. However this very feature also enabled illegal distribution. According to estimates, 3 million illegal MP3 files were downloaded every day in 1999 (Veridisc 2001). The deficiency of audio formats without content protection was soon realized, although it took quite a while for solutions to be developed. The main idea behind all these techniques is to encrypt the encoded (e.g. AAC) audio stream and store the decryption key in a sand-box (i.e. in a well-controlled environment) on the consumer's device. The music may only leave the hardware as sound waves or in the encrypted format. Decrypted data must not leave.

The current situation can be characterized by unprotected audio codecs (coder and decoder of audio signals from analogue to digital and vice versa often involving compression algorithms) on the one hand, which enable file sharing and easy distribution, and proprietary solutions on the other hand by e.g. Microsoft, Sony, Real and Apple, which are still not fully interoperable.

Before we enter into the debate about interoperability we will provide some background on audio formats in DRMs-protected and unprotected mode.

Audio formats overview

In order to better understand our categorization, first let's define two important terms: lossless and lossy compression. They both compare to the original CD audio quality. On a Compact Disc digital audio information is stored without any compression and therefore it consumes a large amount of storage space (1 minute of CD audio is about 10 MB of data), however CD audio offers superb sound quality. Lossless compression means that compression algorithms are used to reduce the storage space without any data (i.e. quality) loss. They typically reduce the size to 50%. On the contrary lossy techniques consider that the human ear has special characteristics that make the audio experience almost the same even if some parts of the sound are missing or are altered, this way a

much higher compression ratio can be achieved, i.e. reduction to less than 10%. In the following we present the different popular formats, distinguishing between unprotected formats, DRMs-protected proprietary formats, and DRM-protected formats.

Unprotected formats

- **MP3:** MPEG Layer 3, the pioneer in the field of audio compression, was developed by Fraunhofer Institute for Integrated Circuits (Fraunhofer IIS, Germany) more than 15 years ago. The main idea was to store audio information using "perceptual coding", a data reduction algorithm that is (almost) imperceptible to the human ear. The original solution achieved a compression of about 1:10. Virtually all music playing devices now support MP3.
- **AAC**: Advanced Audio Coding is the next generation audio compression algorithm, first introduced in MPEG-2 and now also incorporated in MPEG-4, the latest ISO/IEC standard of the Moving Pictures Expert Group. MPEG-4 is a complex specification defining a container for all kinds of media (i.e. audio and video), while AAC is the basis for natural audio encoding within MPEG-4. AAC was developed in order to give better performance over MP3 in compression while keeping or even improving sound quality (e.g. AAC fulfils the requirements for studio sound quality specified by the European Broadcast Union). AAC offers typically 1:16 compression ratio.
- **OGG Vorbis:** This is a compound solution developed by the Xiph.org Foundation, where OGG is the global container specification for containing any kind of multimedia data (just like MPEG-4), whereas Vorbis is the audio codec. The aim of Vorbis is the same as for AAC: to outperform MP3 by offering better compression ratio (i.e. over 1:10) while giving better sound quality. However, unlike AAC, which is commercially licensed, OGG Vorbis is free.
- **FLAC:** The Free Lossless Audio Codec is probably the newest contestant in this race of formats. The main rationale behind the sourceforge-hosted project is to provide lossless compression in a free product. The average compression ratio is about 1:2. DRM is not planned for this format by the developers.

DRM-protected formats

- **WMA:** Windows Media Audio is the proprietary solution from Microsoft for audio encoding. It is part of the Windows Media project (together with WMV, Windows Media Video). It supports several storage formats ranging from lossless compression to high-performance lossy compression and also voice encoding. The copy-protection of WMA is built on the Windows Media DRM architecture.
- **RealAudio:** It is the product offered by RealNetworks?. The core focus of RealNetworks? activity was traditionally on streaming media for which they achieve a compression ratio of about 1:16. The Helix DRM solution is part of the product.
- **ATRAC3**: The Adaptive TRansform Acoustic Coding is the DRM-enabled sound encoding technology used by Sony and it is the successor of ATRAC. It achieves a compression of about 1:10, whereas its companion ATRAC3pro may go up to even 1:20. This format is used in Sony's MiniDisc? or by the online shop Sony Connect.
- **FairPlay:** This is the DRM solution used by Apple's iTunes. The FairPlay? offers protected AAC files in form of M4P (encrypted MPEG-4).
- **LWDRM**: The Light Weight Digital Rights Management is a new approach in the audio DRM field. Like MP3 it has been developed by Fraunhofer Institute. LWDRM currently supports MP3 and AAC, although in principle it could be applied to other formats too. The main idea of LWDRM is that there are LMFs (Local Media Files) to be used only locally, and SMFs (Signed Media Files) to be distributed. There are three levels of participation: level 1: you may only

"read" SMFs, while you cannot create/modify anything; level 2: you may create LMFs. but these will be tied to your computer, and level 3: you may create SMFs but a signature (and watermarks) will be added to them that will identify you as the creator. The idea behind LWDRM is that the consumer may copy the content if he is willing to mark the media as his own. As long as the content does not leak out to the public, it is like using unprotected formats. But an illegal copy caught in the wild could be traced back to its originator. This approach is clearly an alternative to the existing encryption/key based solutions.

Discussion of interoperability

In this section we will put forward three arguments, why current approaches to interoperability are still deficient:

1) One might think any DRM solution could protect any kind of audio format, e.g. FairPlay could be used to encrypt, apart from AAC files (M4P), MP3 or OGG Vorbis files as well. This would be feasible in principle but would not solve the interoperability problem. Let's take OGG Vorbis, an open standard with published specifications, as example: Without DRM a compliant device simply decodes the data stream according to the definitions, and produces the sound output. However if some kind of DRMs was used, the result would not be OGG Vorbis any more and only devices fitted to understand the DRM solution would be able to play the content. Basically this is the main reason why currently only proprietary systems are used, where the chosen DRM solution can be enforced at the device level too. Finally, if the used DRM technology has to be enforced at this level, why bother about different formats? A single method is enough in a closed system environment.

2) While the approach of LWDRM is interesting and holds some promise to be applied to audio formats in a generalized way, we should not overlook one important issue. In tomorrow's world full of computer viruses, identity theft will be a key "black business". How can it be ensured that contents owned by someone won't be stolen when marked as their property and be held responsible for them (e.g. today's viruses are intelligent enough to send e-mails in the name of the infected computers owners, the next step is not that big)?

3) A third approach to interoperability of DRM-protected content could be interoperability of formats by conversion. The RealNetworks company recently introduced Real Harmony (Smith 2004a), which basically transforms its own copy-protected RealAudio? files into other popular formats, this way allowing consumers to play their RealAudio? songs also for instance on Apple's iPod, which was until now not possible. This can be seen as a step towards interoperability, but at the same time it can be interpreted as an effort to invade the domains of other companies (e.g. Apple-M4P, Microsoft-WMA). As this approach is very controversial, one may doubt that it is the best way to achieve interoperability. Notwithstanding, with this move Real has started the interoperability game, and we will see if others will follow (Smith 2004b).

Bottom line

It is safe to say that quality of audio formats is constantly improving - a clear benefit for the consumer. It is less clear how DRM-protected formats, which are backed by the record industry, will relate to free formats, which many people still prefer to use for the exchange of music files. The next big question is interoperability of DRM-protected formats. From the consumers' point of view, playing multimedia content on different devices (coming from different manufacturers) is an important requirement. Until now only hacker tools or nifty tricks allowed DRM protected content to be moved between devices from different vendors. Real Harmony is the first clear step in this direction by creating a solution for converting different DRM technologies, but it is not yet clear if this approach put forward by just a single company will be accepted by the entire industry concerned.

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The tension between interoperability and information security. Compulsory licensing of information security technology

By: Ot Van Daalen, De Brauw Blackstone Westbroek, The Hague

Abstract: Digital Rights Management (DRM) systems will become an important distribution channel for music and other content. Because of network effects and switching costs, DRM systems incline to dominance. In the absence of competition, one might consider having third party DRM providers offer parts of the system, in order to safeguard consumer interests. However, this might break the security of the system. A possible solution is to have dominant content providers compulsorily license their security technologies. This however, poses the question what can be considered a security technology and what not. Are, for example, skip-the-commercial buttons an information security technology or not? It should be content providers, not technology providers, who should decide on this distinction.

Keywords: antitrust, interoperability, information security

Introduction

"Tactics and ethics of a hacker"? or "fully legal, independently developed paths to achieve compatibility, choice and quality"? If you happen to be the producer of the popular iPod, you'll probably call RealNetworks attempt to achieve interoperability the former. If you happen to be RealNetworks, producer of the not-so-popular RealMedia player, you'll probably call your attempt the latter.

What gave rise to both statements was RealNetworks' decision to offer its Harmony Technology, which, according to the press release, is „the world's first DRM translation system to enable consumers to securely transfer purchased music to every popular secure music device“ (RealNetworks 2004). Unlike before, music bought at Real's online music store can be encoded in Apple's proprietary music format and listened to with Apple's iPod. And unlike before, the integrity of Apple's music distribution system is threatened and an important reason for buying music from Apple's music store has vanished. And that's why Apple announced that it will investigate the legal implications of Real's decision to sell songs in Apple's format.

Regardless of the legality of Real's decision, its attempt to offer interoperable file formats for music distribution offers a new example of an old problem: how to solve the tension between interoperability and information security.

The problem

To answer this question, and elaborate on why exactly there is a tension between the two, some background on digital music distribution systems (also called DRM systems) is helpful. DRM systems consist of several parts: an encoder and a decoder, sometimes combined with a server and a receiver. These components could be offered by several producers, but in reality they often form an integrated system, offered by one and the same producer.

One important reason for this is that an integrated DRM system offers content providers a complete channel for the distribution of secure content. Content providers value secure channels. As will be discussed in more detail below, there are reasons to assume that integrated distribution channels are more secure. And consumers want high quality, functional music players. If sufficient competition between integrated DRM systems exists (and if one believes in the benefits of the free market), DRM systems will compete for the user, offering better functionality, and higher quality.

However, DRM systems incline to dominance, because network effects prevent alternative DRM systems from entering the marketplace. If alternative DRM systems will not be able to license enough content, they will not attract sufficient users. And if they will not be able to attract sufficient users, they will not be able to license sufficient content. Users will not easily switch to alternative formats if they have a music collection in one format. Given high switching costs and high barriers to entry, in the absence of competition, consumer choice will lessen, and functionality and quality of music players will lower. The question then becomes how to safeguard consumer interests in the face of dominant DRM providers while providing incentives for innovation.

Solutions

One solution might be to allow third-party producers of individual components of the dominant DRM system to enter the market. This, however, creates a threat to the security offered by the DRM system. DRM systems contain complex technologies designed to offer secure content distribution. Third-party DRM-parts might unintentionally or intentionally break this security. For example, third-party decoders could intentionally ignore metadata (the rules describing how the content may be used), and save content on the computer harddisk, contrary to the wishes of the content provider. Or third-party DRM parts might unintentionally contain design flaws which open the system up to attacks from malevolent users aimed at freeing the content from the distribution channel. On the long term, a battle between code makers and code breakers might lead to more secure systems. In the short term, it definitely will

not. This is exactly why interoperability and information security are at odds.

Another solution might be to strictly regulate dominant DRM products. Regulations could for example oblige DRM systems to contain a fast-forward capability, or a skip-the-commercial button. This solution, however, would involve far-reaching governmental intervention, and will therefore not easily be accepted by the marketplace. In addition, the question remains whether strict regulation could sufficiently take into account consumer interests. Consumer demands are pluriform and complex, and the marketplace probably will be better able to address these demands than the government, even in the absence of competition.

The third solution might be to prohibit third-party DRM parts from being offered on the market. Laws in Europe and the United States currently take this approach. Article 6 and 7 of the Copyright Directive, and Article 1201 of the Digital Millennium Copyright Act currently prohibit the circumvention of technological measures to protect content. Third-party DRM parts circumvent these measures, and are therefore currently prohibited, even though they might have perfectly non-infringing uses.

However, this solution not necessarily offers the highest security for content distribution. A dominant DRM provider has only limited incentives to design its system in a secure manner if no realistic competition exists. But content providers might only switch to alternative DRM systems if they have sufficient reach. And if users are locked-in in one DRM system, alternative systems will not acquire sufficient reach.

The better option

The better option is to have dominant DRM system providers compulsorily license their technology to others. This should be done on reasonable and non-discriminatory terms, as has been envisioned in the context of digital pay-TV in the European Access Directive. This would safeguard the security of the distribution channel, while still offering consumers enough choice in price and quality.

There definitely are reasons for not doing this. Some might argue that software producers, faced with the threat of compulsory licensing, will be hesitant to produce innovative secure systems. This is an empirical question, and I do not have an answer to that.

However, assuming that this solution will not forestall the emergence of innovative security technologies, it poses different questions as well. The most pressing question is on what parameters licensees should be allowed to compete. For one, licensees should not be allowed to compete on the core functionality of the distribution channel: the security itself. This solution is adopted in the Access Directive where it states that a potential licensee should comply with ``relevant and reasonable conditions ensuring, as far as he is concerned, the security of transactions of conditional access system operators". Alternative DRM systems should respect metadata and not create leaks in the content. But competition on any other parameter should be allowed. But even still: there is a thin line between „information leaks“ and functionality. Content providers consider a skip-the-commercial-button in a DVD-player an information leak. Users consider it a function. Content providers consider the possibility to copy content to an MP3-player an information leak. Users consider it a function.

These are difficult distinctions, but if anyone should have to decide on what leaks can be considered a function, it should be content-providers, not technology producers. If producers of third-party DRM parts offer a secure system, they should be given a license. Only if content providers fail to respect consumers' wishes, is it time to think about the difference between information leaks and functionality.

Bottom line

All in all, my suggestion is that information security and interoperability are in tension, but can co-exist. If the „tactics and ethics of a hacker“ are being used to create „fully legal, independently developed paths to achieve compatibility, choice and quality“ – I'm all for it.

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The right to resell. Will eBay finally allow secondary markets for digital media?

By: Lutz Niehüser, European Business School, Oestrich-Winkel, Germany

Abstract: eBay has just announced that it is conducting a 180-day pilot to offer music files for download. "Pre-approved" resellers will be able to offer downloadable music within auctions at eBay. Is this the beginning of a legal secondary market for digital media? This article gives a brief background on the legal and technological requirements to resell digital media items and on the economic implications of such a possibility.

Keywords: secondary markets, first sale doctrine, consumer rights, online music market

Introduction – The „Double Dutch Bus“

At the beginning of September 2003 U.S. citizen George Hotelling offered the digital music file „Double Dutch Bus“ for auction on eBay. Originally, he had bought the song at iTunes for the usual price of 99 US-cents. After a while the auction had gained popularity and the bids for the music file had risen to 15.000 dollars, which Hotelling wanted to donate to the Electronic Frontier Foundation (EFF, a consumer interest group in the digital arena). Only a few days later, eBay cancelled the auction explaining its „downloadable media policy“ prohibits any listing of items or products to be delivered electronically through the Internet. Hotelling argued he just wanted to sell his legally acquired property – the music file – as others sell CDs. He assured he would transfer the music file and delete the original afterwards. iTunes – advertising with the slogan „You own the Music“ – stated it would in principle be legal to sell a purchased file, but technically unfeasible.

Following last year,s incident, eBay.com has recently announced the introduction of a new category called „digital downloads“, within which pre-approved sellers can offer digital media items, such as music files. These sellers must prove that they either are the holder of the copyright or have contractual permission from the rights owner to resell the listed media items. Furthermore, the transfer of the digital media item must take place in the secure environment of the seller, to which the buyer will be redirected after the auction is completed.

Primary or secondary market?

The question arising from the above background is, whether the new category „digital downloads“ constitutes a real secondary market or merely an auction-based primary market. To put it simply: Can George Hotelling at last sell his iTunes song? The answer is no.

In the note to the press announcement eBay clearly states: „A buyer of downloadable media through eBay cannot re-list or resell the media on eBay.“ With this restriction, eBay is explicitly excluding consumers from the opportunity to resell purchased items. Furthermore, the common consumer will not be able to meet the different criteria, which must be fulfilled by the „pre-approved sell-

ers“. Presumably, only commercial power-sellers will have the opportunity to offer digital media items within the category „digital downloads“. A secondary market in the sense of a C2C-market? will not emerge under these conditions.

The rationale behind secondary markets

As mentioned above, secondary markets for digital media have not emerged so far. However, do we also need such markets for digital media? From an economic perspective, there are several reasons why secondary markets are generally desirable (see Reese 2003):

- Secondary markets lead to more competition in the market, as the supplier of the primary market has to compete with its own products offered on the secondary market. Without this competition, primary market suppliers have an incentive to offer products at higher prices resulting in a lower level of economic welfare.
- A secondary market leads to a better allocation of items among consumers. From an individual, but also from a macro-economic perspective, it is only reasonable to sell property, which is not to be used anymore and which other consumers are willing to pay for.
- Secondary markets extend the affordability of media items to the public. „Used“ or older media items are typically being sold at lower prices leading to a situation of natural price discrimination. People, who can afford it, purchase items earlier on the primary market and people with a lower willingness to pay are able to buy media items on the secondary market.
- Secondary markets extend the availability of media items. For instance, media items can be accessed through a secondary market long after they are „out of print“ or withdrawn from primary markets.

Legal requirements for secondary markets

Most American and European music download services explicitly exclude the option for consumers to resell media items in their terms of sale. Thus, consumers who purchase physical media items, such as CDs, and those who acquire digital media items by downloading are treated differently.

The reason why consumers can resell physical media items, lies in a principle, which in U.S. copyright law is called the *first sale doctrine*, but also exists in a similar form in EU copyright law. Originally, copyright holders are given an exclusive right to

(re-)distribute media items. However, this exclusive right is limited by law, in order to balance the interests between copyright holders and consumers, who purchase media items. Once sold to consumers for the first time, the exclusive right of the copyright holder to (re-)distribute the media item concerned exhausts. As a consequence, owners of CDs, DVDs or books can resell or give away their property without asking the copyright holder for permission.

After the introduction of the Digital Millenium Copyright Act (DMCA) and the European Copyright Directive (EUCD) legal experts have argued whether the First Sale Doctrine and the corresponding European principle are applicable not only to physical media but also to the online world. The DMCA does not explicitly state a non-applicability, whereas the EUCD implicitly does with its „right of making available to the public„. Hereby the EUCD generally classifies all types of content made available in digital networks as a service and not as a product, with the consequence that it cannot be resold. Thus, under European copyright law content on a website or in a newsgroup is treated the same way as music files downloaded at iTunes. Nevertheless, the latter have more similarities to physical media items, regarding economic characteristics such as exclusiveness and rivalry in consumption due to copy protection.

There are two legal options under which secondary markets can emerge:

- Music or other media download providers, such as iTunes, grant permission to resell media items within their terms of sale. However, this option is very

unlikely, because providers are giving away market power, as media items offered on the secondary market cannibalize their own primary market (see Coase 1972).

- The *first sale doctrine* and its corresponding principle in European copyright law must be applicable not only to physical media items, but also to downloadable media items. Against the prevailing opinion, some legal experts argue that the principle of *first sale* must be applicable to downloaded media items as long their economic characteristics are similar or equal to physical items such as books or CDs.

Technological requirements for secondary markets

In order to enable consumers to resell digital media items, certain technological requirements have to be met. The digital media item must be exclusive in a way that it cannot be used anymore by the seller after being resold. Instead of copying the digital media item, it must be forwarded and deleted.

Apart from the functions to copy-protect and manage the media items, also the transfer of the items in the manner of „forward and delete“ can be basically implemented with DRM systems. In order to do so, two main technological problems have to be solved:

- The option to resell – as part of the terms of sale or licence agreement – has to be modelled with Rights Expression Languages (RELs) in order to be processed by DRM systems. Compared to the fairly complex concept of *fair use* due to many exceptions, the task of modelling the *first sale doctrine* can be regarded as quite simple.
- As far as users want to interchange media items between different DRM platforms, problems of interoperability arise. From a technological point of view, this problem could be solved (see Mulligan and Burstein 2003). However, different interests of competing market players can hinder or delay agreements on industry-wide standards and the goal of interoperability.

Threat of efficiency

As described in the rationale behind secondary markets, the right to resell digital media items would be to the consumers, advantage for several reasons. Nevertheless, a potential right of consumers to resell has to be balanced with the interests of the copyright holders. Compared to a secondary market for physical media, such as CD auctions on eBay, a secondary market for digital media can be significantly more efficient, due to electronic transmission and automatic delivery. Additionally, digital goods are not subject to physical „wear and tear“, which makes „used“ goods a perfect substitute for „new“ goods. The devaluation of a media item only depends on the topicality of the content, which is the same for both „new“ and „used“ media items.

In comparison to a secondary market for physical media, the increased efficiency of a secondary market for digital media items can lead to a situation where every single media item can be traded among consumers significantly faster. Thus, the potential revenue from primary market sales could erode at the expense of the authors, interests. Such a market could regulate itself, as providers could ask for higher prices to include all future usage of each individual media item. Another solution to balance the consumers, right to resell with the interests of copyright holders could lie in DRM. For instance, an artificial „resell delay“ could slow down the circulating rate of a „too efficient“ secondary market in favour of an increased demand for items on the primary market. By adjusting the period of an obligatory „resell delay“, the market power can be shifted slightly (but not entirely!) to the primary market. Such a scenario would resemble the current situation on markets for physical media items, where the sellers on the primary markets usually have an advantage over the competitors on the secondary markets leading to significant differences in prices.

Bottom Line

This article described the rationale behind secondary markets, which have not emerged in the digital era so far. Furthermore, legal and technological requirements for such

markets were analysed. From the consumers, perspective secondary markets for digital media are desirable for several reasons. Unfortunately, the aspects regarding the right to resell have been neglected too long, as the public and scientific discussion focussed on the appropriate balance of DRM and Fair Use (especially private copying). Nevertheless, the right to resell goods is an essential consumer right and – not least – one of the pillars of the social market economy. The non-existence of secondary markets for digital media can lead to an unbalanced and non-efficient supply of goods. The more the whole media market is shifting from physical to digital media, the more impact a non-existence of secondary markets in the digital era will have.

Secondary markets can be facilitated with DRM systems as soon as similar P2P-alike? distribution mechanisms such as „Superdistribution" are technologically feasible. Nevertheless, the threat of efficiency of such markets could possibly erode sales on the primary market. Therefore, the consumers, right to resell must be balanced with the interests of copyright holders. Perhaps, a solution to readjust this balance could lie in DRM repeating a quote from Charles Clark: „The Answer to the Machine is in the Machine".

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Musicians' voice to be heard! What musicians think of file sharing, DRM, and copy protection

By: Ulrich Riehm, ITAS, Karlsruhe, Germany

Abstract: Two surveys of musicians in the USA are examined here with a focus on sharing music files over the Internet, downloading, protection by technical measures, and copyright law. While there are different and even converse opinions among musicians in many respects, there are also common views. In particular most musicians appreciate the promotional effects of the Internet for their work, and most argue against strict technical control and fierce prosecution.

Keywords: USA, musicians, survey, copyright

Introduction

We have heard many complaints from the music industry about P2P music filesharing causing financial damage to creating and performing musicians, composers, songwriters, singers, instrumentalists, etc. To quote the International Federation of the Phonographic Industry (IFPI): Unauthorised use of music „has hurt sales of music worldwide, causing artist rosters to be cut and thousands of jobs to be lost“ (IFPI 2004, p. 10). But have you ever heard the musicians, own voice on peer-to-peer file sharing, DRM and online music? If you have met musicians face to face you will probably understand why they seldom raise their voice in these matters. Generally speaking, musicians are sensitive individualists, scarcely organised, and often show little interest in dealing with economic affairs. Some indications what musicians think can however be derived from the two surveys we present in the following.

NEA Survey of the worklife of jazz musicians

In 2000 the National Endowment for the Arts (NEA) in the United States commissioned a study of jazz musicians in four U.S. metropolitan areas (Detroit, New Orleans, New York, and San Francisco). The aim of this conventional survey was „to enhance the quality of statistical information, which will be used to help devise strategic ways to further the work of jazz artists“ (Jeffri 2003, p. 4). The survey was conducted in 2001 in cooperation with the American Federation of Musicians (AFM). 1,900 persons responded. The survey results were published in 2003 under the title „Changing the beat. A study of the worklife of jazz musicians“ (Jeffri 2003). Besides a host of questions dealing with demographics, income, health-care, jazz styles of the musicians, there were some queries addressing copyright issues, which we pick up here.

First of all, copyright is in fact a matter that is important for jazz musicians too. This is not self evident as we can imagine many jazz musician earning their living by gigs and jam sessions – not by composing, arranging, or recording. Following the survey results however, four of five of the responding jazz musicians (79 %) reported that their music has received airplay (sometimes), three of four (75 %) have (some) of their work been recorded by a professional recording company, more than half of the musicians (55 %) have recorded works themselves, nearly half (48 %) hold copyright in some of their artistic work, and 35 % said that their music has been broadcasted over the Internet (in the year 2001).

The latter group of „Internet broadcasters“ was asked how they feel about people downloading their music without paying. Their answers (multiple answers possible) were as follows: 63 % want to be paid, 52 % object downloading their music, but 37 % like the exposure they get, and 29 % do not mind downloading. In other words one of two musicians do not raise objections against downloading, and one of three appreciate the promotional side of downloading for their works.

PEW Survey of musicians and songwriters

A more recent study has been conducted by the PEW Internet & American Life Project. Preliminary results were published in May 2004 (Rainie and Madden 2004). The Web-based survey was conducted in March and April 2004. The aim was to know more about the way musicians and songwriters use the Internet, and about their views on copyright and file sharing.

Before presenting the data we have to send ahead two methodological remarks: First, although 2,755 persons responded, the sample can not be regarded as representative for the entire population of musicians and songwriters, because of the bias due to „self selection“ of participants in this web-survey. Second, the percentages we present are calculated irrespective of the answers „do not apply“ and „don,t know“ in order to draw a more accentuated picture based on the knowledgeable answers.

Impact of file sharing and downloading

There are 72 % musicians who believe in the promoting function of file sharing. They either agree with the following statement: „File sharing services aren,t really bad for

artists, since they help promote and distribute an artist,s work to a broad audience", or they say that file sharing has a positive as well as a negative side for them. Only 24 % of the respondents say file sharing services are bad for artists because they allow people to copy or use an artist,s work without permission and without compensation for the artist. 3 % disagree with all of these statements.

While 57 % see no effect of free downloading on sales of own CDs, 35 % claim that sales of their CDs have increased by free downloading, and only 8 % claim their sales have decreased.

53 % of the respondents see no effect of the Internet on protection of music from piracy and unlawful use. 27 % say the Internet has a small negative effect on the protection of music from piracy or unlawful use, while 21 % see a big effect.

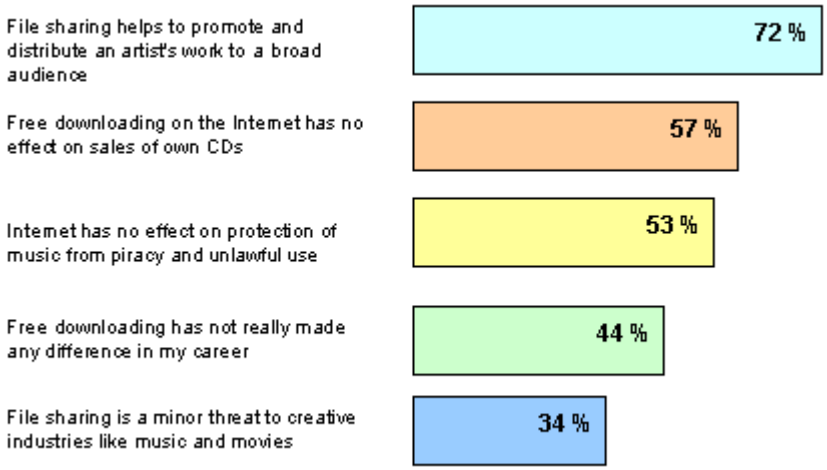
In general more musicians say that free downloading has a positive effect on their career. Here are the figures:

- 44 % Free downloading has not really made any difference in my career
- 41 % Free downloading has helped my career
- 9 % Free downloading has both helped and hurt my career
- 6 % Free downloading has hurt my career

A similar picture appears when respondents were asked about their overall opinion on file sharing: 33 % agree with the statement that file sharing is no real threat to creative industries like music and movies, 34 % say file sharing is a minor, 32 % a major threat.

First conclusion: Musicians doubt the negative effects of downloading and file sharing, and point out the opportunities of file sharing to promote their work. This result underlines the findings of the NEA investigation. Figure 1 depicts those statements of the different questions, which were strongly supported.

Fig. 1: Impact of file sharing and downloading (most supported items of different questions)



Source: Own calculations from PEW Internet & American Life project, see Rainie and Madden (2004)

Copyright law and copy protection

The majority of 75 % respondents support the view, that copyright laws do more to protect those who sell art than to protect the artists themselves. 68 % agree or strongly agree with the statement that current copyright law does a good job of protecting artists, rights (31 % disagree).

A remarkable majority (73 %) does not believe that RIAA,s (Recording Industry Association of America) legal action against individual downloaders will benefit musicians and songwriters (27 % welcome these actions). Assuming that someone has broken or disabled the copy protection mechanism on a CD or DVD after purchase, 57 % of the sur-

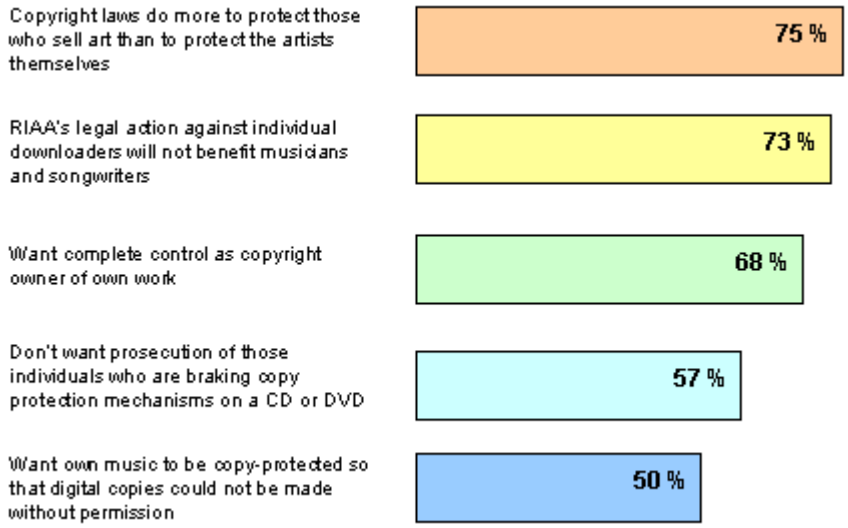
veyed musicians do not want prosecution of those individuals, while 43 % want it.

More than the majority (68 %) want complete control as copyright owner of their work, 29 % want some control, 3 % very little control. We see a clear dichotomy between proponents and opponents of copy protection. 50 % say „yes“ and 50 % say „no“ to the following statement: „Current technology makes it possible to Œcopy-protect, digital forms of music such as CDs and audio files so that unauthorized copies cannot be made. If you had the choice, would you want your music to be copy-protected so that digital copies could not be made without your permission?“

Second conclusion:

The responding musicians don,t feel protected best by copyright law and RIAA,s legal actions against individuals and their prosecution. They want more or complete control as copyright owners of their own work, and dislike the influence of the music industry, which presently exerts the greatest control. Figure 2 depicts the most frequently chosen answers to the different questions on copy protection, copyright law and prosecution.

Fig. 2: Copy protection and copyright law (most supported items of different questions)



Source: Own calculations from PEW Internet & American Life project, see Rainie and Madden (2004)

Bottom Line

We have looked at musicians, responses addressing file sharing, copyright and DRM based on two surveys. The surveys revealed a huge divergence of opinions among musicians. Nevertheless, the majority acknowledges the opportunities of the Internet and file sharing. Only a minority gives more importance to the risks. While it is neither surprising that musicians want to be paid by those who consume and use their works on the Internet, nor that they are in favour of better control of their files, it is indeed surprising that the majority does not want more severe prosecution of individual downloaders of music. Maybe this mixed view is due to their double role of creators and consumers of music using the Internet themselves to satisfy their needs. Another result of the survey is that musicians don,t see their interests represented best by the music industry, which often claims to act in their interest. In the view of musicians it is often more important to make their works widely available than to have them well secured, but nobody listens to them.

We warmly welcome pointers from readers to other surveys of creative workers on Internet use and DRM issues, and would also appreciate statements by artists and artists' organisations.

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Code is NOT law. A short report on the "Code as Code" workshop in Amsterdam, 1-2 July

By: Rik Lambers, IViR, Amsterdam, The Netherlands

Abstract: This is a short report on the "Code as Code" workshop in Amsterdam, 1-2 July. It presents some highlights of the two-day discussion on regulation of behaviour through technical code, rather than traditional law. Finally the article explains why the "code as code" issue is not only of interest to legal scholars, but also to consumers.

Keywords: Lex Informatica, Code, Workshop

Introduction

Guru to some, populist to others, one thing is certain: Lawrence Lessig,s legal thinking has achieved wide attention on both sides of the Atlantic. Five years after its publication, the heart of his first book *Code and Other Laws of Cyberspace* (Lessig 1999) functioned as the basis for a workshop in Amsterdam on 1 and 2 July: *Code as Code*.

Organised by the Institute for Information Law, in cooperation with Tilburg University, the workshop derived its name from the core statement of Lessig,s book: „Code is law.“ (Lessig 1999, p.6). That is, code as in technical code is the true regulator of behaviour in the digital environment, not traditional law. It is the notion, or hype, that software and hardware impose a set of normative rules. Lessig popularised this notion, but Joel Reidenberg already referred to the set of rules as Lex Informatica in a 1998 essay of the same name. More precisely Reidenberg speaks of „the set of rules for information flows imposed by technology and communication networks“ (Reidenberg 1998, p. 554). Examples of regulation through technical code are the online filtering of content, the use of cryptography to prevent unauthorized access to data, and the copy protection on CDs in the form of Digital Rights Management Systems (DRMS).

Workshop debate

A select group of international experts discussed if code can be considered law, and how code is used in different fields of law: freedom of expression, privacy and intellec-

tual property law. Several papers on these subjects served as a basis for the discussion. They will be published at the beginning of next year in the international *Information Technology & Law Series*. In his keynote speech Reidenberg noted that the papers showed a deep scepticism of technology as a legitimate means of rule making, specifically of code as a substitute for law. He stated that he shared this scepticism and that „*Lex Informatica* is inherently unfair and the state has to intervene."

The papers proved to be fertile ground for an often abstract, though high-level interaction between the participants. An introductory paper and related presentation provided a list of criteria to test if code can indeed be considered law. These criteria were derived from legal theorist Lon Fuller,s criteria for law and projected on Lessig,s „Code is law" metaphor. Key criteria were: *transparency*, *legitimacy*, *accountability* and *consumer choice* towards the use and working of technical code. Overall regulation through code was thought not to adhere to these criteria for law, and to have a negative impact on the discussed fields of freedom of expression, privacy and intellectual property.

On the last day of the workshop no concrete conclusions were reached. However, in an unofficial and somewhat playful final declaration it was stated that „code is *not* law", and that the „Code is law" metaphor is dead – a statement that Reidenberg however thought to be too strong. In his opinion the participants had agreed on the illegitimacy of code as a substitute for law in establishing behavioural control rules.

Code as code as consumer concern

It is this very illegitimacy, due to a lack of the aforementioned criteria for law, which makes the „code as code" phenomenon important from a consumer,s perspective. The transparency of the implementation of technical code solutions and the related accountability of the users of these solutions are primary consumer interests. For example, it is in the interest of a consumer that he can hold a record company accountable if it has not sufficiently informed him through labeling that the used DRMS may prevent him from playing a purchased CD on all his devices. This has already been the subject of litigation in both Belgium and France (Tribunal 2003).

Bottom line

When technical code replaces legal code, when „code is law", rules are enforced automatically and in an absolute fashion, and consumers may loose traditionally enjoyed legal protections. Consequently, also consumer oriented organisations and projects may look out for the *Code as Code* papers, providing a general, meta-view of the subject matter to which DRMS belong.

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Masthead

The INDICARE Monitor is an electronic periodical of the EU-funded project INDICARE being published every last Friday of a month. Articles having passed an internal review process are immediately posted at the INDICARE homepage for public debate. Authors are encouraged to revise their articles in the light of previous discussion before publication in the monthly issue.

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