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COPYRIGHT AND eCOMMERCE

By

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By Dr. Daniel Gervais¹

1.0 Copyright, eCommerce and the World Wide Web

In the past months, the increasing bandwidth and user base of the World Wide Web as well as powerful new compression algorithms have made it possible to download and use new types of works: PDF published texts, MP3 files and, soon, high-quality (commercial) video files. This expanding power of the Web to deliver content online could have marked the end of copyright as we know it. Paradoxically, the reverse seems to be happening²: a number of “secure” content delivery initiatives have been proposed and several systems are in advanced “beta testing” phase or already commercialized.³ In the text world, companies such as Reciprocal, Intertrust and many others are marketing container-type technology that prevents reuse of online content (except as authorized at the time the content was acquired or in “superdistribution” mode). Video-on-demand and video streaming technology (including the Canadian *iCraveTV* case) are increasingly talked about.

While music is clearly taking center stage in the debate about the impact of e-delivery of content on copyright, text publishers have already been in those digital trenches for a few years. Their content takes up fewer bytes (even in PDF or e-book formats) and can thus be copied and disseminated much more easily and at a much higher level of quality, even with low-speed Internet access such as 56.6 Kbytes modems. Several large publishing houses now offer very high-quality content over the Web. Why? For example, readers of scientific,

¹ - Dr. Gervais is of counsel at the Montreal-based firm of Brouillette, Charpentier, Fortin.

² - “Digital Rights and Wrongs. Computers were supposed to be threatening copyright. Instead, they may end up making it stronger”. The Economist, 17 July 1999.

technical and medical literature can find thousands of high-quality journals offered online (usually in addition to the paper copy).⁴ Users seem to like the new format, which often includes material that could not be made available in the paper edition: 3D images that can be manipulated, complete tables of calculation results (which would be much too long to publish on paper), etc. Hundreds of magazine publishers are following the same path and major newspapers in many countries are available online in full text, often on the same day as (and in some cases before) the paper publication.⁵ One major advantage of e-content is that it can be word-searched and previously unavailable archives are often searchable as well. Hence, if providing online access to content was supposed to be the death knell of copyright, as we know it, these “content providers” should all be six foot under by now!

Business models for providing/delivering content online vary greatly. The most common models in the text world—and, increasingly, in the music and film industries--may be summarized as follows: first, material is made available for free and can be searched and downloaded without identifying oneself. These models are often advertising-based and do not work for high-value content. In fact, even for lower value material users often will have to register. This process provides content owners and service providers with valuable demographic (market) information and allows them to compile possible e-mail lists for future direct marketing efforts. A second option is to provide only an abstract (or a few seconds of the song or a film “trailer”) to illustrate the content, but fees are charged to download/view/listen to the complete work. A third possibility, currently in use mainly in the text world, is the subscription model. This may mean a subscription to the electronic version

³ - To name but one example: the Secure Digital Music Initiative, a file format for music downloads that prevents/controls reuse.

⁴ - From Academic Press' IDEAL, to Science Magazine, to Elsevier's Science Direct and Springer-Verlag's LINK and dozens of other systems that could be mentioned here.

only or an e-subscription combined with a paper subscription (in some cases, the electronic version is offered as a “bonus” for subscribers to the paper version).

What is common among most content providers, however, is that the material provided online is almost always subject to a “mouse-click contract” containing terms and conditions limiting what the user can legally do with the material. Such restrictions typically limit use to a single user and allow that user only to read/listen to/watch (and possibly print) a single copy. Redistribution or reuse of the material is generally prohibited, except in a super-distribution model where a user can forward a copy to a third party who in turn has to obtain a license key to use the content.

In the world of text publishing (newspapers, journals and magazines) electronic delivery is based on an “honor” system supported by law and contract, not technological measures of protection. Other industries (especially music and film) seem to prefer to use also technical solutions, such as digital containers and encryption systems, to enforce their copyright rights and the terms and conditions of user contracts.

Is locking up the content necessarily the best option? Not in all cases, at least for content the main users of which are professionals or businesses. Locking up may require password maintenance, may make it difficult for users to change or upgrade a server or PC and may also be perceived as a lack of trust on the part of the provider/ rightsholder. In other words, locking up content comes at a price and may lead to a competitive disadvantage if similar content is available without protection from another provider. The question boils down to this: is the provider’s (publisher/producer) mandate to minimize unauthorized uses of the

⁵ - In the United States, examples include the New York Times, The Wall Street Journal Interactive Edition, The

content or is it rather to maximize authorized uses? The former option is arguably the priority only in cases of possible mass unauthorized (unpaid) reuse and cases where use is clearly (commercially) unfair. The size of the “mass” is a function of the size of the market for the content in question. It is also worth noting that the latter option is not the same as a free-for-all. On the contrary, a properly organized licensing market, where professional or business users can painlessly and quickly obtain the rights to do (within reasonable limits) what they want with the content is by far a better solution than locking it up, which is too often perceived as an invitation to circumvent/cheat. In addition, there are user groups arguing that free access to content may actually increase sales of that content or of material related to the content. For example, giving music for free may increase the visibility of the performers, thereby increasing sales of future albums, merchandise and concert tickets. Of course, this will not be true in all cases.

There is one common denominator, however: whatever option is chosen, an Electronic Copyright Management System is indispensable to be able to license online quickly and efficiently, whether content is locked up or not. The prime directive is that it should be at least as convenient content to get authorized (licensed) content as to get unauthorized content. Often, the number of steps to be performed is more a cost to a user as the actual payment that has to be made to the provider.

2.0 Defining the Concepts

2.1 Defining Rights Management

Before we can understand electronic copyright-management systems, we need to understand the concepts that underlie such systems, starting with “rights management” itself. Copyright-management systems are basically databases that contain information known as “metadata”, i.e., data about the copyrighted works, manifestations of those works⁶ and related products: authors and other current rightsholders, length/number of pages, date of creation, etc. That information is needed to support the process of authorizing the use of those works by others. A copyright-management system thus usually involves two basic modules, one for the identification of content and one for licensing. In many cases, ancillary e-commerce modules such as payment or accounts receivable (and content delivery) are also considered part of the system, but the core of a copyright management system is (a) content and rights identification and (b) a licensing tool.

A copyright management system can be used by individual rightsholders or by third parties who manage/sell rights on behalf of others. For example, a rightsholder might use the system to track a repertory of works, manifestations of works or products; an organization representing a group of rightsholders might use a copyright management system to track the use of each rightsholder's rights and works. Such an organization might be an agent representing a number of authors, or, more commonly, a copyright management organization. Examples of such organizations in the United States include ASCAP, BMI and Copyright Clearance Center, Inc. (CCC).

In the copyright management organization model, the mandate to authorize third parties may come directly from rightsholders under a voluntary (contract-based) system, or it may follow

⁶ - In copyright terms, a “work” is an incorporeal creation, such as music, which must take a material form (a live performance, a sound recording of that performance etc.) to be visible/audible. These material forms are referred to herein as “manifestations” of the underlying copyrighted work.

from government regulations that impose a compulsory license (a version of which for non-national rightsholders is known as the “extended” license) or that create a “right to remuneration” that must be managed collectively⁷. With respect to pricing, in some cases, such as CCC, rightsholders set the price for each type of use of each piece of content. In the vast majority of cases, however, prices are contained in “tariffs” applicable to a class of content and/or users. Users pay an annual fee for what is often referred to as a blanket license, which allows them to use a repertory (or catalog) of works. Repertory licenses are useful in cases where more precise management would be either too costly or simply impossible. A good example might be music performing rights, where a radio station typically purchases an annual blanket license to broadcast any legally recorded music.

Another approach of copyright management organizations is the transactional license, which allows users to use a specific work (or manifestations) for a specific purpose. A user typically applies for such a license when he/she knows that he/she needs the rights in question. For example, educational institutions in the United States that produce paper and electronic “coursepacks” (collections of material from various sources used to supplement textbooks) generally obtain an authorization for each piece of content used; another example is the use of music in broadcast advertising. In most cases, the right to make a commercial recording of previously recorded music also requires a transactional fee that covers that specific use. In the United States, these rights, known as “mechanical reproduction”, are subject to a compulsory license.

⁷ - For a discussion of the various collective management organization models, see Mihály Ficsor. Collective Administration of Copyright and Neighboring Rights. WIPO, 1990.

In any transactional model, copyright management systems and organizations either grant a license based on agreed terms set in advance by the rightsholder or act as an intermediary between the rightsholder and the user to establish terms and/or collect payment⁸.

2.2 Defining Electronic Rights Management

Applying the above concepts, we see that rights management functions are made much easier with computers using Web technology. Web-enabled computers act both as huge rights databases and automated licensing engines. Computerized systems allow rightsholders to automatically grant licenses to users online without human intervention. This keeps transaction costs low and makes licensing an efficient, Internet-speed process. Licenses to use a specific work can be granted automatically to individual users. For example, a corporation or an individual author or user can purchase the right to use an image, video excerpt or song to republish/reuse it in a magazine article or on its Web site. A publishing house might purchase the right to reuse previously published material. These systems may also be used to deliver content online, in cases where the user does not have access to such content in the required format. They may also be used to create licensing/clearinghouse sites (*e.g.*, www.copyright.com) where users can search a catalog of works and the rights they need. Computers can also be used to offer licensing options at the point where the content is made available, *i.e.*, after the user has received and evaluated the content.

Digital technology can also be used to track (“meter” or “monitor”) usage and look for unauthorized uses of the material. Programs known as “spiders” scour the Web looking for

⁸ - While this type of application is newer, theatrical performance of theater plays has functioned under this model for a very long time, but does not enter the scope of this paper which focuses on diffusion techniques, *i.e.*, on reception of material by users other than by direct personal access (presence at a live concert, *etc.*).

unauthorized copies of material on Web sites. As mentioned above, technology is available to encrypt material in digital “containers” that limit possible uses (or reuses) of the material.

The value of electronic copyright management systems is most obvious in a transactional licensing environment. Already, there are good implementations of such systems that range from low to very high in technical sophistication. In the least sophisticated cases, users email or fax a license request to a copyright management organization that then processes it manually and returns an answer to the user. With a full electronic copyright-management system, users search available content and rights online, submits a license request electronically and receive a response immediately, without any human intervention. A variation on this theme is where the user first locates the content (using a search engine or portal) and is then offered automated yet flexible licensing options at the point of content.

Such a system can also be used in blanket/repertory licensing environment, but its value is more limited. Users can apply and pay for an annual license or renewal online. Perhaps they will want to search works contained in the repertory. The system may be hooked up with a monitoring system that will report works used to a copyright management organization, which can then use the data to split the monies received among rightsholders⁹. Such systems may be used in a full-reporting mode (all works used at any time) or for temporary surveys of selected users. This technology should greatly improve the accuracy and reduce the cost of distributing repertory-based income, but intrudes on the privacy of users. Appropriate measures and safeguards must thus be found and implemented to strike a balance between the need for accurate data reporting and protection of users’ rights and interests.

⁹ - See, e.g., www.audiosoft.com in the music field.

While transactional licensing on the surface seems fairer: rightsholders can price discriminate and users pay only for what they need,¹⁰ the time and cost factor of individual transactions may lead to a greater reliance on repertory licensing and, in fact, collective repertory licensing, especially for larger users. Indeed, if all providers have different contracts (terms and conditions of use), and assuming a large user of copyright material uses Material from dozens or perhaps hundreds of providers, can they realistically be expected to ask each and every employee to know hundreds of different sets of terms and conditions? Even then does it make sense?

2.3 Positive v. Negative Licensing

One of the most basic question rightsholders and content providers must ask themselves is what their priority is: minimize unauthorized uses (appropriate in some cases of mass unauthorized reuse) or maximize authorized (paid) uses?

To truly limit unauthorized reuse, negative licensing tools are necessary: encryption, digital containers and other technology solutions that limit the options available to users. In most cases, contracts and law alone are perceived as not offering sufficient guarantees. Using protection technology (reinforced by the *Digital Millennium Copyright Act* which greatly limits legal circumvention of those protection measures) usually prompts negative reactions from various user groups and may be perceived as an invitation to work around the protection. Laws are not always effective in backing up the use of such technologies and courts (*e.g.*, in the Rio player case) have not supported certain efforts by rightsholders to

¹⁰ See Julie Cohen. Copyright and the Perfect Curve. 53 Vand. L. Rev. 1 (2000).

enforce negative licensing, although more recent efforts (Universal v. MP3, RIAA v. Napster, DVD-DeCSS) have been decided in the rightsholders' favor.¹¹

Positive licensing, on the other hand, assumes that users find what they want and are given an easy option to determine terms of use, both at the time they acquire the content and later on. This is especially useful for content used by professional or business users, much less so for music, software or film used by individual consumers¹². Indeed, very often in business-to-business environment users want more rights *after* having received and reviewed the content. For example, a company may find a newspaper or journal article that they want to e-mail to customers, post to their Intranet or republish in their corporate newsletter. They don't know this *before* reading the article (*i.e.*, at the time of acquisition). It makes little sense (in most cases) to ask a user that he/she acquire in advance a right to reuse anything in any form. If available at all, this option would likely be much too expensive. This is where positive licensing comes into play: it allows users to acquire the content on appropriate terms (and at the right price) and then acquire new rights as their needs change and grow.

¹¹ - See Kudalis, Timothy J. "Hacker, 16, Arrested For Writing DVD Decoder. Allegedly Broke Intellectual Property Codes", Channel 3000, 1/26/2000; Menta, Robert. "Court Shuts Napster Down", MP3Newswire, 7/27/00; "RIAA says online piracy is climbing", ZDNET News, 9/19/2000.

¹² - Although rightsholders may want to use technology to allow peer-to-peer transmissions (with payment by recipients), a process known as superdistribution.

3.0 ECMS Issues and Obstacles

There are several clusters of issues that are hindering the development of ECMS solutions. They are grouped below in three main areas: legal, standards-related, technology and privacy.

3.1 Legal Issues

The principal legal issues that need to be addressed in electronic copyright management systems are ownership of rights and works, rights to be conveyed, what the conveyance allows, and whose laws apply in case of a conflict involving more than one country.

3.1.1 Rights issues

3.1.1.1 Who owns the rights?

While the author usually owns the rights to a work at the time of creation, legal relationships like employment or work for hire may vest those rights in someone else. The issue is more complicated in the case of a motion picture or sound recording, because in certain countries other rightsholders (*e.g.*, producers or performers) are involved not (only) as assignees of the author(s)' rights but as holders of their own rights, known as neighboring rights. The electronic copyright management system needs to know who owns the right to authorize the use of a work in whole or part *at a particular point in time* and for each territory concerned-- and then possibly also who may be entitled to a share of the royalties.

3.1.1.2 Which rights are involved?

Copyright is not a monolith. It comprises a number of different rights, and those rights have a separate existence in each country. We thus have to deal with a three-dimensional matrix, i.e., with a multitude of copyright rights that can be separated territorially¹³.

An inventory of the components of those “copyright rights” is contained in the Berne Convention and most national laws. There are two principal categories: moral rights and economic rights. Within the former are the right of paternity or authorship and the right to oppose so-called “mutilation.” In the latter category, the most important rights are the reproduction right, the right of communication to the public (which includes, according to Article 8 of the WIPO Copyright Treaty, the right to “make available”¹⁴ and, e.g., in the US, the right of public performance¹⁵), and the right of adaptation¹⁶. An electronic copyright-management system is concerned mainly with rights that are licensed or traded on a routine commercial basis. Economic rights such as public performance or reproduction are much better candidates for electronic rights management than, say, moral rights.

3.1.1.3 What rights are conveyed?

A digital transmission of content implies making a copy, usually both on the server from where the transmission originates and the recipient’s computer. That may not always be the case. A user listening to music in streaming mode may not be making a copy. There may,

¹³ - The adoption of international exhaustion in countries such as Australia (a territory of exhaustion might be the European Union) may impact on the application of this principle, but the principle remains nonetheless.

¹⁴ - *E.g.*, posting material to a Web site.

¹⁵ - Which applies to broadcasting, Webcasting (streaming) and probably also to file downloads from a public server, although no final court decision is yet available on this point. See next section and *A&M Records, Inc. et al v. Napster, Inc.* No. 00-16403, 00-16403 (9th Cir. Feb 12, 2001).

however, be a number of transient or technical copies, for example on cache or mirror servers. Although some argue that digital transmission involves the right of distribution, a copy is not distributed in the physical sense. In fact, whenever a protected work is accessed on a server and a user gets a copy, the right of reproduction rather than the right of distribution may be invoked with greater certainty. This seems to be the position taken in the first of the Agreed Statements accompanying the WIPO Copyright Treaty (WCT):

“The reproduction right, as set out in Article 9 of the Berne Convention, and the exceptions permitted thereunder, fully apply in the digital environment, in particular to the use of works in digital form. It is understood that the storage of a protected work in digital form in an electronic medium constitutes a reproduction within the meaning of Article 9 of the Berne Convention.”

Still, an open question remains about exceptions to the right of reproduction. Article 9 of the Berne Convention provides that such exceptions, including “fair use” and “fair dealing,” should have a limited scope whenever a commercial activity or any other wide-scale diffusion that interferes with the normal exploitation of the work is involved. The definition of the scope of fair use in a digital environment is one of the most difficult outstanding issues. The US Copyright Office has published a detailed study on this issue as it pertains to distance education¹⁷ and has now been tasked to prepare a “report for the Congress examining the effects of the amendments made by title 17 of the Digital Millennium Copyright Act, (“DMCA”) and the development of electronic commerce on the operation of sections 109 and 117 of Title 17, United States Code, and the relationship between existing and emerging technology and the operation of such sections.”¹⁸ Section 109 deals with the right to sell or dispose of the copy of a “phonorecord” (such as a compact disc). How does this rule apply to digital downloads? Section 117 allows owners of a copy of a computer program to make a

¹⁶ That is, the right to reuse a copyrighted work to create a “derivative” work.

¹⁷ - See <http://lcweb.loc.gov/copyright/disted/>.

copy or adaptation of that program if necessary to use it with a particular machine or for archival purposes. These copies may be sold if transferred with all rights to the program. It may be that this provision is no longer as necessary in the current environment.

Another important right, namely the right of communication to the public (including public performance), which certainly applies to broadcasting, also applies to most cases of interactive, on-demand transmissions. Article 8 of the WCT says that the exclusive right of communication to the public includes “the making available to the public of their works in such a way that members of the public may access these works from a place and at a time individually chosen by them.” A number of countries have created specific rights in the face of the WIPO Treaties. To take two examples, Japan added a digital transmission right to its Copyright Act in 1997, and the United States created a right with respect to the digital delivery of “phonorecords” and public performance of sound recordings “by means of a digital audio transmission.”¹⁹

The communication/transmission right may be owned by a rightsholder who does not also own the right of reproduction. If a particular use on the Web requires an authorization for both rights, two different clearance transactions may thus be necessary. One would hope that both authorizations would be available at the same place and at the same time and that independently of the rights that may be involved, only one licensing transaction would be necessary. This is easier said than done, especially in countries where there are different organizations managing these rights on behalf of rightsholders, as is the case for music in, *e.g.*, Canada and the United States.

¹⁸ - See http://www.loc.gov/copyright/reports/studies/dmca/dmca_study.html .

¹⁹ - Section 106(6) of the US Copyright Act, Title 17 USC and the Napster case, *supra*, note 10.

3.1.2 Applicable law issues

3.1.2.1 Which country's laws take precedence?

The traditional theories of emission, according to which the law of the country of origin of the communication applies and of reception, according to which the law of the country of reception of the communication applies, are both very hard to transpose literally into the digital environment. One of the reasons for this is the multiplicity of countries that may qualify under either theory. When a user browsing the World Wide Web clicks to obtain remote content, he/she does not know whether that content comes directly from the site -- and the host country -- that the user is browsing. It may come from a mirror site in a third country. In that case, should we apply the fiction that the content came from the “mother site”? In other cases, sites or parts thereof are cached so that the content can be downloaded from a server closer to the user. Do we need a legal fiction to ignore the *actual* country of origin versus the *perceived* country of emission? With the country of emission approach, servers could be located in so-called copyright havens.

The reception theory seems simpler, and to a certain extent it is. The laws that take precedence are those of the country where the user is located. But that location is not always evident. As a resident of country A, I can use telephone lines to connect to the Internet in country B. To the system, I am located in country B. That problem may be evidentiary only, but it matters nonetheless.

After a close reading of the Berne Convention, Professor André Lucas of Nantes University (France) proposed an amended version of the reception theory, according to which the law of

the country *where protection is required* would apply – i.e., the country *for* which protection is claimed (*lex loci delicti*). In most cases that would be the law of the country *in* which protection is claimed (*lex loci*), but not necessarily so: courts in a third country might also be given jurisdiction by a contract between the litigants, who may also (in most international transactions) pick the applicable law, arguably within the parameters of each country’s “public policy” (*ordre public*).

In the music field, copyright management organizations representing authors and publishers seem to disagree among themselves. US organizations apparently want to license in the country where the server is located, while their European counterparts prefer to license the content provider, which may or may not be in the same country as the server²⁰. In Canada, the Copyright Board issued a decision (now being appealed before the Federal Court of Canada) in which it concluded that the communication to the public right had to be cleared in the country where the server is located.²¹

3.1.2.2 Who gets to choose the applicable law?

Can someone choose the applicable law? If the rightsholder or service provider chooses the copyright-management system's environment, he/she is likely to prefer the laws of the country of emission, *i.e.*, generally speaking, the law where the server is located. If the access provider makes the choice, it could be the country of emission, the country of reception, or a third country, depending on where that provider is located. If rights were managed at the user

²⁰ - *CISAC News*. September 1999, at p. 7.

²¹ - “Statement of royalties to be collected by SOCAN for the performance or communication by telecommunication, in Canada, of musical or dramatic-musical works; Tariff 22” [Phase I: Legal Issues]. October 27, 1999. [2000] 1 Can. Pat. Rep. 1. Available at <http://www.cb-cda.gc.ca/decisions/tocmusic-e.html>.

level (using a set-top box, for instance), the country of reception (or even the country in which the boxes are sold) could provide the legal environment. In practice it seems much simpler to license the *business* of internet transmissions from the country of origin of the transmission, independently of whether the end-user makes a copy that needs to be licensed or not. The fee formula may of course reflect the number of times a work is downloaded/ listened to, and appropriate monitoring and encryption technology could allay the fears of rightsholders.

That said, from a practical standpoint electronic copyright management system (or modules thereof) should eventually be produced for a world market. Rights management could thus tend to become independent of any national law's idiosyncrasies. The WIPO Copyright Treaty and other efforts by WIPO itself have significantly increased the level of harmony among national laws; gaps among national laws are closing. Yet, those gaps are not closing fast enough for ambiguities to disappear. For instance, the Berne Convention, the Trade-Related Intellectual Property Rights Agreement (TRIPS), the WIPO Copyright Treaty, and the WIPO Performances and Phonograms Treaty impose limits on exceptions to common rules, but they *do* allow exceptions and those exceptions vary considerably from one country to another. Depending on which law applies, an act may or may not require an authorization or may or may not be covered by a compulsory license or equitable remuneration scheme. It is still not clear what would happen if a French user were to download material from a U.S. site for educational uses in France: would the **U.S. Fair Use Guidelines** be relevant?

Probably not: the law of the country of reception almost certainly applies to *reuse* of the downloaded material, but the download itself should be cleared once, preferably in the country of origin of the transmission.

Copyright is still negotiated and traded country-by-country and right-by-right. If I, as an author, have transferred the right to digitize and disseminate my work electronically to a publisher in, say, Hungary, what happens if a corporation in France downloads and copies my work from a site authorized by the publisher? Does that publisher have the right to authorize use in France? How does the Hungarian publisher even know that the user corporation is in France? An electronic copyright-management system thus might include a function (*e.g.*, a digital certificate or signature) that would check whether the user is located in a valid country, and that function could even include a digital-signature-based registration module that would confirm, *e.g.*, the mailing address of any user²².

The iCraveTV example²³ illustrates the problems that can arise when users in foreign countries gain access to material posted (presumably legally) on a server in another country, by virtue of a compulsory license, extended license or any such arrangement. In those cases, a rightsholder in country A sees its right taken away by a foreign government's regulations in country B. A user in country B takes advantage of the compulsory/extended license to put the material on a Web server in his/her country. If use is considered to happen in country B (which may or may not be the case for iCraveTV under Canadian law²⁴), that is defensible. But another user living in country A accesses the material from the server located in country B. A problem arises if the rightsholder in country A has an exclusive right and prohibits Web postings of its material.

²² - See Daniel Gervais, "The Law and Practice of Digital Encryption". Amsterdam, Institute for Information Law, 1998.

²³ - See "They Crave Suits v. iCraveTV." *Wired News*, December 16, 1999. <http://www.wired.com/news/business/0%2C1367%2C33093%2C00.html> .

²⁴ - The decision hinges on whether this is retransmission (subject to a compulsory license) or whether the combination of many programs with banner ads on the screen makes it a new primary transmission subject to the authorization of the rightsholder concerned.

3.1.3 Moral rights

The question also arises to know how will the so-called moral right apply? While the business of electronic copyright clearly involves economic rights, one cannot completely ignore moral rights, except perhaps in the United States where those rights tend to be much more limited.

Moral rights allow authors to oppose mutilation of a work and to claim its authorship even after a full assignment of all economic rights. Their scope varies greatly from country to country. Technology may help bridge some of those gaps. A good electronic copyright management system should be able to handle ambiguity; in other words, they should not be limited to answering Yes and No. In fact, sophisticated electronic copyright-management systems currently in use help protect moral rights two ways. First, since the system allows a contract to be agreed upon between rightsholder and user (with or without an intermediary), the parties may stipulate that alteration of the work is not allowed and/or that authorship must be recognized in a certain way. Second, rightsholders can impose special conditions. For instance, with an electronic copyright-management system a photographer could insert language to restrict the use of her work to companies that she considers appropriate, specifically excluding tobacco, firearm or alcohol-producing companies²⁵.

3.2 Standards Issues: Identification and Metadata

3.2.1 Identification of protected material

Identifying what travels on digital networks is another essential part of a real-time electronic

²⁵ - See for example the on-line contract for Mira uses, Article 3, <http://www.mira.com/Services/MoreTermsConditions.htm>.

copyright management system. The system must be able to precisely identify works, manifestations, and rightsholders in order to secure authorizations from the right person, assign permissions, and then send payments to the rightsholder. There are several competing standards under consideration or in use today, many of them already recognized by or submitted for approval to the International Organization for Standardization (ISO).

3.2.1.1 International Standard Work Code (ISWC)

This system, proposed by the International Confederation of Societies of Authors and Composers (CISAC), an umbrella organization representing a number of copyright management organizations mainly in the music field, is being used for musical *works* and developed for literary works. The identification codes are “dumb” (or mute) numbers, in the sense that they do not in themselves contain any information. Unique for each object, the identification number is essentially key to a database where relevant information is contained. The version of this draft code used for music, known as ISWC-T, consists of the letter T followed by a sequentially allocated ten-digit numeric code, the last digit of which is a check digit that allows the computer to validate the other nine digits. Numbers for literary works (ISWC-L) will be similar²⁶.

3.2.1.2 International Standard Recording Code (ISRC)

As stated by the International Federation of the Phonographic Industry (IFPI), the material traveling on electronic networks does not consist of “works” in a pure copyright sense, but rather of “manifestations” of works (also referred to as “digital objects”). Such manifestations might include a recording of a specific performance of a musical work (which, in the United

States, may become a new work), or an HTML or PDF version of a scientific article published on the Web, including graphs and illustrations from various sources. Current IFPI identifiers for manifestations include the ISO-recognized International Standard Recording Code (ISRC), which identifies a musical recording (*e.g.*, a track on a CD). Although it was adopted by ISO more than 10 years ago, still not more than 50% of recordings on the market have an embedded ISRC code. It is very likely, however, that efforts concerning encryption and protection of music files over the Web will affect the standardization process.

3.2.1.3 International Standard Music Number (ISMN)

Another identifier in the music field is the ISO-recognized International Standard Music Number, which is used mainly for sheet music.

3.2.1.4 International Standard Book and Serial Numbers (ISBN/ISSN)

Books may be considered manifestations of works, although they are also finished commercial products. For approximately thirty-five years they have been identified worldwide using the International Standard Book Number (ISBN). The ISBN is composed of a one-digit region code, a publisher prefix, and then sequentially attributed numbers, followed by a check digit. Periodical publications are similarly identified at the title level by the International Standard Serial Number (ISSN), but that number applies to a periodical publication, not to the articles, graphs, charts, and images that it contains.

²⁶ See CISAC News, September 1999, at 11-13. Available at <http://www.cisac.org/cisac/index2e.htm>.

3.2.1.5 Publisher Item Identifier (PII)

Used in the publishing industry, the Publisher Item Identifier was developed in 1995 by an informal group of scientific and technical publishers: the American Chemical Society, the American Institute of Physics, the American Physical Society, Elsevier Science and the Institute of Electrical and Electronics Engineers (IEEE). The Publisher Item Identifier is composed of seventeen alphanumeric characters that indicate publication type (whether it is a book or a journal), and other information depending on the type -- such as the year of a serial publication. It contains no other intelligence, however, and is not linked to a central database²⁷.

3.2.1.6 Serial and Book Item and Contribution Identifiers (SICI)

The Serial Item and Contribution Identifier (SICI)²⁸ is a standard used by serial publishers, subscription agents, and libraries, but no one has found a good way to use it in the digital environment because it does not identify individual articles. An expanded SICI and a new Book Item and Component Identifier (BICI) are now under development for this purpose. They will be able to identify any part of a book or serial such as a chapter, an article, a foreword, an illustration, or a table.

The BICI is a flexible identification system with a fairly loose set of rules. The absence of firm rules here and in identifiers like the Digital Object Identifier (see 3.2.1.8) reflect the

²⁷ - Brian Green and Mark Bide. Unique Identifiers: a brief introduction.

<http://www.bic.org.uk/bic/uniquid.html>. IEEE has published a number of papers on ECMS. Among the most interesting ones, see A.K. Choudhury, N.F. Maxemchuk, S. Paul, and H.G. Schulzrinne. "Copyright Protection for Electronic Publishing Over Computer Networks". *IEEE Network*, Vol 9, Iss 3, p 12-20, May-June 1995.

²⁸ - ANSI/NISO standard Z39.56.

amorphous and changing nature of the data to be identified, and the way in which it is stored, made available, and used or reused.

A similar initiative known as the International Standard Textual Code (ISTC) has also seen the light of day.²⁹

3.2.1.7 Compositeur, Auteur, Editeur Code (CAE/IPI)

The CAE code is used by copyright management organizations in the music field to identify those who create music and -- more recently -- other forms of information. Created in 1992 by the International Confederation of Societies of Authors and Composers, the code has been superseded by the IP number to identify “Interested Parties” to a work -- a full range of rightsholders. The format of the number itself did not change, and previously allocated CAE codes were converted into IP numbers. As with some other identifiers, the numbers convey no meaning. At present, use of and access to the IP database is restricted to confederation members. If it is made available, it could lead to a standard identifier for people by all copyright industries.

3.2.1.8 Digital Object Identifier (DOI)

The Digital Object Identifier (DOI)³⁰ is not an identifier *per se*, but it offers both a structure for an identifier and a persistent routing system to a database containing relevant information.

²⁹ - An ISO/TC 46/SC 9 Working Group 3 Project. See <http://www.nlc-bnc.ca/iso/tc46sc9/istc.htm> .

³⁰ - The Digital Object Identifier Initiative: Current Position and View Forward. Version 3, August 1998. <http://www.doi.org/white-paper-3.pdf>, at page 10. See also Norman Paskin. “DOI: Current Status and Outlook”, in *D-Lib Magazine*, May 1999, vol. 5 No. 5 (available online at <http://www.dlib.org/dlib/may99/05paskin.html>).

Launched by the Association of American Publishers in conjunction with the Corporation for National Research Initiatives at the 1997 Frankfurt Book Fair, the DOI was designed to “provide persistent and reliable identification of digital objects via a proven technology -- the CNRI Handle System® -- and an efficient administration system to link customers with publishers, facilitate electronic commerce, and enable automated copyright management systems.” The CNRI Handle System is a distributed computer system that stores names of digital items and can quickly find the information necessary to locate and access the items. The DOI is thus mainly two things: an identification system, potentially applicable to any and all categories of works and manifestations (even though at present its beta users are mostly book and journal publishers), and a central directory or database which, when queried using a DOI number, will route the user to the appropriate source of information.

3.2.1.9 International Standard Audiovisual Number (ISAN)

The International Standard Audiovisual Number (ISAN) is a joint development of the International Confederation of Societies of Authors and Composers, the International Federation of Film Producers Associations, and the Association de Gestion Internationale Collective des Oeuvres Audiovisuelles (AGICOA). The audiovisual number has reached the level of “Committee Draft” within the International Standards Organization, and has been submitted to national ISO committees³¹. The proposed identifier is a sixteen-digit dumb number that may be used to identify audiovisual works of all kinds³². It is a “dumb” identification number, i.e., without any legal implication or meaning. It has no *prima facie* evidence value as regards the copyright status or ownership of the work. It does not identify

³¹ - Document ISO/TC 46/SC 9/WG 1 N 64, dated September 24, 1998.

³² - "3.1 audiovisual work: Work consisting of a series of related images, with or without accompanying sound, which is intended to be made visible and/or audible through the use of devices, regardless of the medium of initial or subsequent fixation."

rights owners, even though it will be a tool used by people concerned with rights management as well as by many people interested in precise identification of audiovisual works. In other words, the number is a mere pointer to a database where information necessary for the identification of content is maintained. The proposal is to affix the number onto the work -- on masters and copies, whether in analog or digital format, on packaging, contracts, etc. The system is administered by an *ad-hoc*, non-profit-making international agency. The system and the information in the identification database will be open to interested users. A fee will be charged to access the database.

3.2.1.10 Persistent Uniform Resource Identifiers (URN/PURLs)

There are various proposals to upgrade the standard Internet Uniform Resource Locators (URLs). The problem is that when a digital resource moves from one page or file on a server to another, or from one server to another, the URL also changes. A user who enters the original URL in the browser gets the infamous “Error 404” message, meaning that the resource is no longer available at that address. PURLs are URLs that point to a server that can be updated (a system not unlike the DOI directory). “Instead of pointing directly to the location of an Internet resource, a PURL points to an intermediate resolution service. The PURL resolution service associates the PURL with the actual URL and returns that URL to the client. The client can then complete the URL transaction in the normal fashion. In Web parlance, this is a standard HTTP ‘redirect’³³.”

3.2.2 Metadata issues

Until and unless a single global identification system can be agreed upon, electronic

copyright-management systems must be able to function in a multi-code environment. And that means that information about the information -- metadata -- must be made available in a usable format.

While there are existing standards for bibliographic metadata that go back many decades, the situation is less clear in other sectors. In the audiovisual sector, there are databases that contain information like film credits, but currently there are no worldwide standards.

Following are some of the efforts to develop metadata standards.

3.2.2.1 The Dublin Core

The Dublin Core is an attempt to identify the core elements of metadata that are needed to satisfy the needs of all those involved in the exchange of or commerce in electronic-information resources. It was developed over a three-year period at workshops in which “experts from the library world, the networking and digital library research communities, and a variety of content specialties” participated³⁴. This metadata “core” was named after the city in Ohio (not Ireland) in which the first meeting was held.

Originally, the Dublin Core contained fifteen core elements: Title, Subject, Description, Creator (or primary contributor), Contributor, Publisher, Date, Type, Format, Identifier, Source (previous resource), Language, Relation (to another resource), Coverage (geographical or temporal) and Rights. In further meetings, other elements were added including the concept of a sub-element, which is used to qualify an element (for example,

³³ - Stuart Weibel, Erik Jul and Keith Shafer. PURLs: Persistent Uniform Resource Locators. 12/9/1998. Available at <http://purl.oclc.org/oclc/purl/summary>.

³⁴ - Participants came from the following countries: Australia, Canada, Denmark, Finland, France, Germany, Japan, Norway, Sweden, Thailand, United Kingdom and the United States.

‘date’ can refer to a date of publication, or of a revision); a scheme, a label used to identify the method followed to identify the data (e.g., Dewey or MARC); and the language in which the metadata is entered, as opposed to the language of the resource itself.

A number of other groups are working on standards that could have a direct impact on the future of the Dublin Core. While those standards are not for metadata *per se*, they affect the way metadata is coded, transmitted, used, retrieved, and accessed. For example, the World Wide Web Consortium is developing new markup languages and a new language for representing metadata in XML, the markup language designed to replace HTML³⁵.

3.2.2.2 MARC

A well-known public repository of metadata in the United States is the machine-readable cataloging-records database (known as MARC or US MARC). The MARC formats are standards for the representation and communication of bibliographic and related information in machine-readable form. The MARC was developed by the Library of Congress, the Canadian National Library, and the American Library Association along with the Australian National Library, the Online Computer Library Center, the Music Library Association, and the Special Libraries Association. The US MARC database contains approximately seven million records of publisher titles. It can be searched online. A MARC record contains three elements: the record structure, the content designation, and the data content of the record. The MARC benefits from the fact that it already applies to a vast number of titles. The question is whether (and how) it could be extended to apply to other types of content.

³⁵ - HTML or Hypertext Markup Language is a form of SGML, the Standard Generalized Markup Language, which is ISO standard 8879. SGML could be viewed as a system that allows one to define and use documents, in particular, on the World Wide Web. XML is the Extensible Markup Language. XML is a more transaction-

3.2.2.3 The INDECS Project

A promising project, known as Interoperability of Data in E-Commerce Systems, or INDECS, was launched in November 1998, funded by the European Commission. It is worth mentioning here because it seems to have the support of many international representative organizations. In addition, the project partners have significant experience working with identification and metadata issues in a copyright environment, and understand the difficulties encountered by the various ongoing standardization efforts. INDECS posits the existence of several identification schemes and, rather than try to achieve worldwide harmonization, is aiming for interoperability. At the heart of the project will be an effort to achieve agreement on a proposed standard for descriptive and rights metadata. Such a standard would provide a means of integrating data from the different rights-based sectors. To produce those deliverables, INDECS will also need to achieve agreement on a data dictionary to address the numerous vocabulary problems that stem from the participation of people and companies with widely different backgrounds and practices. Its latest progress report was presented at an evaluation conference held in Sydney on March 9th and 10th, 2000³⁶.

3.2.2.5 Other metadata concerns

While the music and audiovisual fields have taken some steps to standardize metadata, there is no standard for data concerning rights ownership, licensing and trading. Thus, while the metadata may be used to identify a particular piece of content, it may not be sufficient or even useful for electronic-commerce transactions. If, for example, the rightsholder is not the

friendly SGML-based system. It is thus probably better suited to enable e-commerce. For a history, see “The

“original” rightsholder indicated in the bibliographic metadata, the data could do more harm than good.

3.3 Technology and Privacy Issues

Protection of rights management information requires a synergy between law and technology, and there are several projects that are looking at that interface. Some important issues include:

3.3.1 The Protection of Electronic Copyright-Management Systems

Electronic copyright-management systems themselves need protection. They need standard identification and delivery formats and tools to work automatically. With the growing use of digital networks to access protected content, it is highly likely that rightsholders will invest heavily in identifying and permanently marking digital works. Worldwide implementation of the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty (as was done in the US *Digital Millennium Copyright Act*) should ensure that rights management data are not deliberately altered.

3.3.2 Privacy and confidentiality issues³⁷

Two issues often raised by users of copyrighted material are:

Road to XML”, <http://www.xml.com/xml/pub/w3j/s1.discussion.html>.

³⁶ - See <http://www.indecs.org/news/sydpog.htm> .

³⁷ - For the purposes of this paper, “privacy” relates to protection of consumer data, while “confidentiality” applies in a corporate environment.

1. As a private individual, can I browse/read/watch/listen without giving my identity (and then receiving mail and telephone solicitations, etc.)?
2. As a corporate user (say a pharmaceutical corporation), can I download this scientific article without the whole world knowing that I need this for my R&D efforts?

There may be legal grounds on which to base a claim for privacy or confidentiality in accessing protected content. In fact, two scholars in the United States have argued that the Constitution protects a right to read anonymously³⁸. In many European countries, private data are protected and may be used only within strict guidelines.

An electronic copyright-management system does not in and by itself protect privacy, but it is one of the best tools to do so. If the rules under which the electronic copyright-management system operates are correctly designed, the system returns to rightsholders *aggregated* information on use of his/her works. For example, the system could say that clearance was granted to use Scientific Article X to 11 pharmaceutical companies in the last month, or that 2,345 teenage users in a part of Chicago downloaded a given musical work. The rightsholder thus gets market data without violating anyone's confidentiality or privacy.

A related issue is how to identify individual digital copies (which presumably have been sold to a specific user), without creating a risk to privacy or confidentiality. If, indeed, individual copies are identified, using a watermark containing a transaction code for instance, a viable solution could be to number individual copies, without including data identifying the user

³⁸ - Anne W. Branscomb. Anonymity, Autonomy and Accountability: Challenges to the First Amendment in Cyberspace. 104 *Yale Law Journal*, 1639 (1995); Cohen, Julie. "A Right to Read Anonymously: A Closer look at 'Copyright Management' in Cyberspace," 28 *Conn. L. Rev.* 981 (1996).

who ordered the copy in question. Copy numbers could be linked, in a secure database, to the individual users. Should there be a good reason to make the link between the copy number and the user -- for instance, under court order -- that link could be made. The role of trusted third parties acting as aggregators of usage data might be especially important to users. An aggregator or copyright management organization using an electronic copyright-management system could thus maintain the confidentiality of the link between a given copy delivered on-line and a specific user. The content owner would receive with the payment for use of his works a report on the number of uses, possibly with an indication of the type of users concerned, but no information about individual users. Without this type of confidentiality guarantee, it may be very difficult for electronic copyright commerce to prosper. In other words, properly tuned electronic copyright-management systems that aggregate data so as to protect privacy and confidentiality are probably essential ingredients of the success of electronic copyright commerce.

4.0 Inventory of Existing Systems

There are a number of working electronic copyright-management systems in operation today, even though the field is still fairly new -- so new that a 1996 report concluded that the systems were still nascent, but today there are real products. The examples below include only systems that bring together the works of several rightsholders, not those run by and for a single rightsholder. The list is not exhaustive, and its purpose is only to illustrate that the concepts discussed above can work in practice, even though much remains to be done to find workable global solutions. The emphasis here is on systems that can authorize users to actually use content that may or may not already have in their possession (in the required format). In the introduction, examples of technologies used to control reuse were given.

4.1 Copyright Clearance Center (CCC)

US-based Copyright Clearance Center, Inc. (CCC) offers an electronic copyright-management system available on the World Wide Web that allows rightsholders to set their prices, establish acceptable uses, and view their accounts directly. The service is offered for universities interested in clearing photocopied coursepacks and electronic course content, and for general photocopying permissions. CCC also offers on-line licensing of specific titles for reuse and republication of text and non-text portions of printed works, whether on paper or electronically.

As a member of the International Federation of Reproduction Rights Organizations, CCC has an interface to the copyright-management systems (some of them off-line) of IFRRO members such as the UK Copyright Licensing Agency's Rapid Clearance Service (CLARCS) and the Australian Copyright Agency Limited's "Copyright Xpress."

CCC also launched RightsLink, a content point clearance system that allows users to acquire additional rights from the point where they acquired the content. At the time of this writing, it was in use by, *inter alia*, the New York Times and the Wall Street Journal. A company known as iCopyright.com also recently announced a similar service.³⁹

4.2 Media Image Resource Alliance (MIRA)

The Media Image Resource Alliance (MIRA) is an online digital-stock agency. Users can browse, download, and clear rights to use professional-quality images. The entire licensing

function and access to content is done automatically online via an electronic copyright-management system. Photographers and other rightsholders provide images directly to Mira, and set prices and conditions for use.

4.3 Japan Copyright Information Service (J-CIS)

The Japanese government helped launch a very interesting project called J-CIS (Japan Copyright Information Service). This service would provide information on copyrighted material of all types and allow users to contact the current rightsholder easily to obtain necessary permissions. Certain conditions of use may also be predetermined by the rightsholder⁴⁰.

5.0 Conclusion: The Way Forward

It is not probably realistic to see the world as a series of completely separate, parallel, watertight delivery systems. Interoperability is Ariadne's thread in the labyrinth of digital copyright commerce. Several large entertainment and publishing companies have developed, or are currently developing, solutions for identification, rights management, and digital delivery of copyrighted content. While that may meet their immediate needs, it may not meet all the needs of users, especially business users. Users must find the content easily and efficiently. The reason why the Web is so successful is that portals and search engines allow access to almost all the content that is available. Specialized portals, vertical “communities”

³⁹ - See <http://www.icopyright.com/news/pr070201b.html>.

⁴⁰ See the paper presented by Ms. Mikiko Sawanishi at the First session of the WIPO Advisory Committee on Management of Copyright and Related Rights in Global Information Networks. WIPO document ACMC/1/2. Available at www.wipo.int.

and other forms of content access are gaining ground. The point is simple: users are more likely to use/buy content if they find it easily, and they will be happier as users if they can decide what they want to do with the content (within reasonable limits) and pay accordingly. This is particularly true in a business-to-business environment.

Waiting for a worldwide standard to emerge from several competing proprietary systems may be risky, except as regards basic ‘dumb’ numbers such as ISWC and ISAN. Solutions that strive towards great interoperability and a certain degree of harmony should of course be pursued and hopefully one day offered by those who seek out, analyze, and, where appropriate, help to develop those solutions.

High quality content is there. In almost all cases, it is in digital form or can be digitized. Networks with sufficient bandwidth are being built, and many business users and individual consumers are already connected. They are hungry for content. Fortunately, many copyright industries, not just certain specialized text publishers who have been doing it for a few years by now, are coming to the view that global networks represent a great business opportunity. The digital world, though it may be different, is extremely interesting commercially and may greatly impact traditional financial flows and business models. In fact, it may be one of the only major future growth areas⁴¹. To put it simply, for all content providers digital is inevitable and is a resource to be harnessed, not feared. The Internet train is coming; it will not stop.

In fact, the ingredients for successful digital copyright commerce are already assembled. Several good rights management solutions are being created, tested and implemented. Viable

electronic copyright-management systems that provide both blanket and transactional solutions, with or without content delivery, have been available for over two years. Answers have been proposed; content providers now need to implement them.

⁴¹ - It must be said that some “newer” rightsholders who started to play that role due to the possibilities of digital technology have (impatiently) held that view since the very beginning.