

First Sale and the DMCA: What the Copyright Office Got Wrong

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As part of the Digital Millennium Copyright Act of 1998 (DMCA), the Copyright Office was charged with managing an ongoing process of evaluating how technology developments are affecting the copyright law, and the effects of the copyright law on the development of technology. In June, 2000 they asked for comments on the effect of technology on sections 109 and 117 of title 17, United States Code, otherwise known as "first sale."

In August of 2001 the Copyright Office issued its report, a document that is shocking in its misinterpretation of technology and law, and dangerous in its conclusions.

First Sale and Technology

First sale is a part of the copyright doctrine that states that the copyright holder (the author or publisher, usually the publisher in today's world) has rights only on the first sale of the physical item. It is first sale that allows you to sell a book as a used book and that allows you to lend books to friends and for libraries to lend books to their users. The copyright holder cannot claim any rights over the object you have purchased and the wording in the copyright law is that the owner of a copy "... is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy or phonorecord." Title 17, 109 (a)

This concept is very hard to translate into the world of digital objects, especially those that are transmitted electronically and therefore do not have a physical manifestation. The question of whether the concept of first sale should or even could be applied to intellectual products in cyberspace is one that has been hotly debated in legal circles for over a decade. In the "Green Paper" that preceded the development of the Digital Millennium Copyright Act (DMCA), which can be seen as a first draft of the intention to modify the copyright law for digital materials, it was stated confidently that first sale could not be applied to digitally transmitted materials since digital transmission always entails the making of a copy, not just the transfer of a physical copy to another party. Some legal decisions have even declared that the copy of a document in random access memory is indeed a copy as referred to in copyright law and therefore could potentially be an infringement of the rights of the copyright holder. Taken literally, this could mean that reading a file off of your computer's hard drive could be seen as a violation of copyright law.

It is only because a small number of public-minded professionals, mainly lawyers, librarians and educators, objected vehemently to the wording in the early drafts of the copyright law changes that we are still treating the issue of first sale and electronic materials as a question. And it is this question (among others) that the Copyright Office must investigate on a periodic basis, asking essentially "has the DMCA harmed the market or the rights of the public due to limitations on the rights of first sale?"

As is often the case, the answer depends very much on how the question is posed and what responses one chooses to listen to.

Communicating with the Public

To begin with, we need to look at the premise that this document was produced after the gathering of public views on the DMCA. The call for public comment was issued in the usual Washington, D.C. manner through a notice in the Federal Register, something that few people outside of the beltway ever consult. The Federal Register is a direct communication between government agencies and the professional lobbyists who spoon feed them information that benefits the interests they represent. Washington does not hear from the public, as in John Q. Public, and did not in this case. Seventeen individuals and 14 organizations responded to this call. This is a very small sample. However, of these, 14 individuals spoke out against the DMCA, as did seven organizations. Three organizations were proponents of a digital first sale doctrine, two organizations were directly opposed to applying first sale to electronic materials. (Two of the individual replies were in the "eccentric" category: persons who knew exactly how to fix copyright once and for all, if only someone would ask.)

The public, however, has made some of its views on copyright very clear. In particular, the tens of millions of users of Napster have made it clear that they don't intend to respect copyright in the digital age. The gap between the conclusions of the Copyright Office and the actual behavior of the general public is cosmic in proportions. However, the report of the Copyright Office was based entirely on comments received and their own interpretations of law, ignoring the clear statement on copyright that is evident in public behavior.

Now let's look at what they got wrong.

Wrong: Digital Works Do Not Degrade

"Physical copies degrade with time and use; digital information does not." (p. xix)

This is absolutely false. To begin with, digital information must always be stored on a physical device of some type. This can be a disk, a magnetic tape, a CD Rom, a removable disk or drive... but it has to be somewhere. Even the elusive "RAM copy" resides, albeit temporarily, on a piece of hardware. All of these devices can, and do, fail at some point. If most members of our computer literate society have a sense of computer hardware as being reliable it is only because most hardware is discarded as obsolete long before it reaches a likely point of failure. With the average life span of a desktop computer around three years, today's computer users are constantly refreshing their hardware.

Digital information in its stored form does not degrade; it fails catastrophically. Whereas a book may have smudged and discolored pages yet still be readable, the loss of even

one byte within a digital file generally renders it completely unusable. It's either in perfect condition or it's gone.

Ironically, the next sentence in the report is: "Works in digital format can be reproduced flawlessly, and disseminated to nearly any point on the globe instantly and at negligible cost." This is true, and underlying it is the real truth about the durability of digital information: it is durable because we are constantly making new copies that are as good as the original. Since making copies is exactly what the Copyright Office opposes, it's a shame that they didn't notice that they are attempting to eliminate the very avenue that makes digital works viable over the long term. Any individual copy on a device can only be considered temporary, either because the device will be replaced with new hardware or because the device will eventually fail. It is only through constant re-copying that digital works will have a lifespan of more than a few years.

Wrong: What is in RAM is a Copy

Due to an earlier court interpretation (*Mai, Sys. Corp. v. Peak Computer, Inc.*) the copyright office concludes that when a computer user opens a document to view it a temporary copy is stored in random access memory. This may be true in some cases with small and simple plain text documents, but for most files today this is not what happens. The Copyright Office's report itself provides an excellent example. The report is in Adobe PDF format and the main section of the report is 835 kilobytes in size. This is a relatively large file in a complex format.

Programs that display documents on the screen, like the Adobe Reader, do not make copies of files, they act on files. This is a very different function from what the Copyright Office seems to imagine. Here's a plausible scenario for how a program will handle the display of a file in a complex format like Adobe Acrobat or Microsoft Word:

1. The program reads the document header to make sure that the document is in a format that the program can handle.
2. It reads through a section that describes any settings (fonts, default page sizes, etc.) in the document.
3. It then reads in a section of the actual document. The size of this section may be entirely determined by the program but could also depend on current system resources. This section may or may not be a copy of the bits as they are stored in the file itself. Because programs act on files, the RAM version may have been manipulated by the program and the working version in RAM could be considerably different to the stored digital file.
4. It displays whatever has been determined to be the opening screen. Any text that is not on the opening screen remains in memory or on disk until it is needed.
5. As the user pages through the document or moves forward or backward through sections, some of the sections of the document that are stored in memory are discarded and others are read from disk.

Illustrating this with the Copyright Office document, when I open up the document in Adobe Acrobat PDF Reader I see that there is activity on my hard drive. When I move from one page to the next the light that indicates hard drive activity does not come on so I assume that some contiguous pages are stored in memory. If I jump to a later section in the document, however, the hard drive is accessed, presumably retrieving sections of the document that had not yet been read into RAM.

I can also open the document in the Adobe eBook Reader. This appears to be a more complex piece of software, judging from its activity. The most recent page that I was reading opens by default. I can jump to page 149 where section b is headed "RAM Reproductions as 'Copies' under the Copyright Act." For a brief moment the light flashes that shows that there is activity on my hard drive. I hit the "next page" button, another flash of the hard drive light, and a new page appears. From this simple - and albeit oversimplified - example I conclude that this software keeps in memory only the portion of the file that is needed for a single screen of display, which in this case corresponds to a page in a printed document. If I open the document and look at two pages out of the 232 pages of that PDF document, I have made RAM copies of only those two pages.

Interestingly, the Copyright Office concludes in this same report that "the making of a buffer copy in the course of streaming is a fair use" in reference to streamed audio and video. The streaming that the Copyright Office referred to is related to webcasting where works are played directly from the Internet. In fact, computer programs of all types make use of this kind of buffering although within a single computer it is less obvious to the user that this buffering is taking place because the time it takes for the memory to read the next buffer of information from the hard drive is very short. If this kind of functioning is fair use for webcasting it must be fair use for other programs that invisibly perform that same function.

Wrong: A CD-ROM is an Archival Copy

At various points in the document the Copyright Office concludes that the need for consumers to make backup copies of items they have licensed or purchased digitally is not necessary because most programs today are no longer distributed on unreliable floppy disks, but on CD-ROM. They conclude that "the CD-ROM itself acts as the archival copy." (p. 77)

For those of us who remember struggling to install programs that required twenty or more floppy disks, CD-ROMs are a welcome improvement for software distribution. But if no archival copies are needed of these CD-ROMS it is only because the average lifespan of a software program is less than the average lifespan of the CD-ROM medium. New versions of software are placed on the market with an ever-increasing frequency. Looking at operating systems, and using Microsoft as the example since it has been determined to be running on the vast majority of computers in the country today, we had Windows 95 (1995), Windows 98 (1998), Windows Me (2000), Windows XP (2001). In terms of applications, again using Microsoft, there was Office 95 (1995), Office 97 (1997), Office 2000 (2000), Office XP (2001). Few of us make all of those

upgrades, but upgrading every five years is not unusual. Given the temporary nature of software versions, the original install CD-ROM is often sufficient to get a software user through the occasional hardware failure or even through a machine upgrade.

But software is a tool, not content. What works for software does not work for literary and artistic works. These works are maintained and used much longer than the 3-5 year life-span of a computer program. We still perform and enjoy the plays of Shakespeare and the music of Bach. We have paintings from the early Renaissance, Bibles printed by Gutenberg, manuscripts from many hundreds of years ago. There is a durability to human cultural artifacts that so far has no equivalent in the computing environment.

For this content, CD-ROMs are hardly sufficient. Although CDs can last for a decade or more, they can also fail. When the CD is being used for recorded music, these failures are often not perceived because the loss of a few bits out of a complex of sounds may not even be registered by the audio equipment or the human ear. But if the content of the CD is a digital file that will be read by a computer, the loss of even one bit can render the entire file unreadable. And we have no expectation that CD-ROMs created today will be intact and readable in 50 or 100 years, both because of degradation of the physical medium and because of the rapid change in computing technology.

Wrong: Device-Specific Protection is Not Widespread

The copyright office concedes that the tethering of individual works to specific devices could be a problem in terms of first sale. (p. 75) They refer to the type of controls that are present in some products that use a unique hardware ID to limit access to the content to that particular machine. They conclude, however, that this is not a widespread practice, used only for some e-books, and therefore isn't a problem at this time.

This is an illustration of how quickly change can occur in the computing sector. By the end of this year (2001) Microsoft hopes to roll out their new operating system, Windows XP, which does have exactly these kinds of controls. Already the current version of Microsoft Office, Office XP, contains these controls. I am writing this on a Sony computer with a special device called OpenMG Jukebox that allows you to transfer to an external device downloaded music files that are protected using the SDMI (Secure Digital Music Initiative) specifications; these files can only be played on the computer to which they were originally downloaded.

Although these software products and devices are not currently wide-spread and may not be so for another 6-12 months, there is still reason for concern. The fact is that the tethering of content to hardware is the only effective method of digital access controls that we have. Increasing use of this technology is inevitable.

I must add here a personal note: At about the time that the Copyright Office released its report I had just purchased a new laptop computer. I wasn't happy with the initial configuration of the machine and attempted to install a different operating system on the

machine. This failed, and I had to reinstall everything back to the original configuration. I also reinstalled Microsoft Office. When I opened Microsoft Word to begin this article a dialog box popped up that said I was required to register my copy of Office, which I then attempted to do. Instead, I got an error stating that the copy was already installed on a different machine. It turns out that I had purchased Office XP, and that this product's registration process creates an identifying key based on the hardware configuration of the machine. In reinstalling my new computer to its original state I had had to reformat the hard drive and the XP copy control now saw this computer as a different piece of hardware.

As you can imagine, this experience left me with a renewed interest in writing this particular article. The resolution to the problem was not difficult, however. I called a toll-free number, explained the problem, read off some lengthy numbers to the polite person at the other end of the phone, and was given an even lengthier number to plug into the software that made it work again. It isn't clear at what point Microsoft will refuse to allow me to reinstall the software, or if XP is intended to work through intimidation and the "nuisance factor." Honest folks will be embarrassed to call Microsoft and make up a story about why they need to re-install the software on a different machine; while any half-way decent con artist will have no trouble giving away copies to a handful of friends, chatting up the Microsoft help staff with reasonable excuses to get the authorization numbers.

Wrong: Lending Works Damages Market

"Unlike a typical lending library, where the book, once lent to a patron, is out of circulation for days or weeks at a time, the electronic book in this scenario is available to other readers at any moment that it is not actually being read. Since, at any given time, only a limited number of readers will actually be reading the book, a small number of copies can supply the demand of a much larger audience." (p. 83)

Although the scenario described by the copyright office in their report is possible, they ignore the fact, and it is a fact, that the only system that is doing library lending of electronically distributed documents today is indeed checking out materials to patrons for days or weeks, using a time limit as specified by the library. In fact, technology developers would like to have a system whereby users can check out and return items at will. The system that is doing this lending, netLibrary, does not have such a system in place because the technology is somewhat difficult.

That the Copyright Office willfully ignored the facts and provided, instead, a deceptively negative view of library lending shows their prejudice in this area. This statement should not have appeared in this document as a statement of current fact because it is false. It also makes a statement that no one can substantiate: that digital lending, with return, will result in fewer copies being sold than the current hard copies. The question of the ratio of digital works to hard copy works, and how they will serve the needs of patrons, has no answer at this time because we have very little experience with the digital model of document delivery. My own observation is that as technology progresses the quantity

and range of documents that deliver to users increases. In the place of lending a few book or journal titles to a few patrons we are purchasing or licensing and lending large numbers of titles that previously were not available to our patrons. The amount of information has also increased and library users expect a broader range of titles and services. Technology is not allowing libraries to serve more patrons with the same documents; it is allowing libraries to serve more patrons with many, many more documents. And those documents are purchased or licensed by the library.

Wrong: No Consumer Demand for First Sale

"Given the expanding market for digital works without a digital first sale doctrine, opponents questioned the consumer demand for such a change in the law." (p. xi)

This is a wonderful bit of doublespeak which, although attributed to the representatives of copyright industries ("opponents," meaning opponents of a digital first sale doctrine in this context), it is accepted by the Copyright Office without question. There are two things wrong with this acceptance.

The first is that there IS consumer demand for first sale, and it comes from libraries. Libraries are significant purchasers of intellectual property, primarily in textual form. They are able to allow use of these works, either in the library or through lending, because of the first sale doctrine. A group of library associations was one of the respondents to the Copyright Office's call for comments and they made very clear their need to allow use of digital works that they purchase. Anyone in the business of selling digital content to libraries knows very well that the two big issues for libraries are lending and archiving of digital materials. The lack of a viable model for the lending of digital materials is unquestionably stalling the market for these materials. The greatest struggle is taking place in the e-book arena because these longer works cannot be easily printed or read within the library, and therefore without the capability to lend there is no delivery system for electronic books.

The other thing wrong with this reference to consumer demand is that copyright law is not now, and has not been for a long time, based on anything resembling consumer demand. (reference Litman) There was no consumer demand that brought on the creation of the Digital Millennium Copyright Act. What this argument actually reveals is that the Copyright Office has accepted that copyright law today is about sales and market capabilities, not about law or rights. In fact, our copyright law is terribly market-driven. The translation of the quote above could be something like: "People are buying the stuff anyway, so we can get away without giving them a First Sale Right." There is no consumer interest being represented here, only the interest of the copyright industries.

Wrong: No Harm is Done

"There are two principal ways that consumers could be harmed: by refraining, to their detriment, from activities because they do not fall within the scope of the exemption; and by being subject to legal claims from copyright owners for conduct that falls outside the scope of the exemption. Neither appears to be occurring." (p. 151)

This report comes about because, during the drafting of the DMCA, many advocates for the public interest expressed fears that the restrictions in the DMCA would harm the public. Congress's solution to this was to task the Copyright Office to preparing periodic reports in which it assessed whether or not such harm had come to pass. Exactly what would be considered "harm" was not clearly defined, nor was how the assessment would be carried out. The Copyright Office appears to have chosen to recognize two kinds of harm: the harm of not being able to do something because of the legal restrictions, and the harm of being taken to court for something you did do. The former can be probably be assessed by following court cases; the latter, unfortunately, is caught in the catch-22 of needing to prove a negative.

How can you prove that if a library had been able to lend electronic books it would have purchased a particular book that a particular patron then would have found in the library's catalog and would have checked it out. Not only that, there has to be harm, so you'd have to show that this particular patron was therefore not able to complete a school assignment that then led to the student getting a lower grade that was the main reason that a university rejected the student's application.

Obviously, you can't prove anything based on what didn't happen. Therefore, in the logic of the Copyright Office and the framers of the DMCA, no harm has been done. In reality, we have no way to detect or measure the harm and therefore it will always be concluded that it doesn't exist.

It also seems the case that few, if any, individuals have been taken to court for violation of this particular section of the DMCA. What they fail to mention is that it is very rare for individuals to be charged with copyright violation. Copyright law comes into play generally in business rivalries. Even in the massive individual infringement that took place over the Napster system, the lawsuit was against Napster, the company, not the individuals using it, even though Napster itself was not making the copies. Taking individuals to court, especially on the scale of Napster users, if it is possible at all is expensive and unlikely to be lucrative. Napster is paying \$25 million to settle its suit; it would have been much harder to get one dollar each out of 25 million Napster users who had made an unlicensed copy.

Wrong: Limitation to a Device is Just the Nature of Technology

A number of people commented on the limitations built into the DVD players that is intended to place certain restrictions on the playing of DVDs. The main function of these controls is to allow copyright owners to limit the use of their works geographically. This

means that if your DVD player is coded for Hong Kong and you purchase a DVD coded for the United States, you can't play it in that machine. This is not really a copyright issue but a market one: it allows the film industry to stage the release of films in theaters before the film is available for home use, thus exploiting the "gotta see it first" market and protecting the theatrical release from competition.

My own commentary in this area related to the tying of encrypted files of content to individual pieces of hardware. This is the only currently viable technique for selling digital content over networks that actually limits piracy. As you download the file it creates a key, essentially a password, that is linked to some hardware identifier, such as a unique number in your CPU or your hard drive. The file can only be opened on that particular piece of hardware, so making a copy of it for a friend is useless because the friend can't open or play the file on her machine. This also means, however, that when you upgrade from one computer to another you lose access to your own, legally obtained files.

The Copyright Office dismissed the arguments in this area with:

The need for a particular device on which to view the work is not a novel concept and does not constitute an effect on section 109. VHS videocassettes for example, must be played on VHS VCRs." (xvi)

They have the wrong analogy here. Yes, the technology itself means that to view digital content I must have a machine that can transform that digital content, much like a VHS VCR transforms the tape to a screen image. But I can take my tape around the world and play it in any machine that understands the basics of that technology. I can also upgrade my VCR to a new model, and still play my tapes. The restrictions that we are seeing for DVDs and for electronically transmitted digital content are not technological necessities - they are artificial controls that go beyond the technology itself. Some of these controls, such as the encryption of digital files and tethering them to individual machines, fall under the copyright protection device description that is protected by other sections of the DMCA. But they cannot be likened to the VHS vs. BETA debate.

Right: There is No First Sale for Digitally Transmitted Works

The one thing that I must agree with in the Copyright Office's report is that we do not know how to apply the first sale doctrine to digitally transmitted works today.

"The transmissions that are the focus of proposals for a 'digital first sale doctrine' result in reproductions of the works involved. The ultimate product of one of these digital transmissions is a new copy in the possession of a new person. Unlike the traditional circumstances of a first sale transfer, the recipient obtains a new copy, not the same one with which the sender began. Indeed, absent human or technological intervention, the sender retains the source copy." (p. 78)

The first sale doctrine was developed around analog works, ones that could be physically handed from one person to another; ones that had some of the natural

qualities of property. Digital works do not follow that model, at least not while they are transmitted digitally. There has been some interesting speculation about the creation of massively complex systems that will essentially keep the "state" of a digital work as it passes from hand-to-hand, such that only one version of the work is "live" at any given time. (See the work on rights management and trust systems by the Electronic Book eXchange (EBX)). This would emulate the giving and lending of analog works; as you give the work to a friend, their copy becomes "live" while yours goes dormant. If the friend returns the work, hers becomes the dormant one and yours re-awakens. While theoretically intriguing, nothing of this type exists at the moment, and when it does it still might not fall under the letter of the first sale portion of our copyright law, primarily because a copy is being made and copyright law is about copies not about access to works.

Conclusion

We have a long way to go before we have a good understanding of how intellectual property will work for digitally transmitted content. It may be a mistake to even consider applying the old laws to these new materials, but the alternative is worse: letting the intellectual property industries redefine copyright law entirely to their advantage. This report is evidence that even when individuals weigh in with their opinions, facts and (sometimes) misconceptions, their voices are unlikely to be heard. They weren't heard during the five or more years that the DMCA was being formulated, and they are not being heard by the Copyright Office, whose job it is to listen. Yet there are those who will continue to struggle for public rights, in the hopes that some difference can be made. Our future depends on it.

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