Copyright, Copy Protection, and Trusted Systems

Tech+Law to Fight Back? DMCA, 17 U.S.C. §1201

- 17 U.S.C. § 1201(a)(1)(A) No person shall circumvent a technological measure that effectively controls access to a work protected under this title.
- (a)(2) No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that
  - (A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under this title;
  - (B) has only limited commercially significant purpose or use other than to circumvent a technological measure that effectively controls access to a work protected under this title; or
  - (C) is marketed by that person or another acting in concert with that person with that person's knowledge for use in circumventing a technological measure that effectively controls access to a work protected under this title.

§ 1201, definitions

- (a)(3)(A) to "circumvent a technological measure" means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner; and
- (B) a technological measure "effectively controls access to a work" if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work.

Access v. Copy

- 1201(a)(1): unlawful to circumvent access controls
- 1201(a)(2): unlawful to traffic in tools to circumvent access controls
- 1201(b)(1): unlawful to traffic in tools to circumvent *copy* controls
- Unlawful to circumvent *copy* controls?

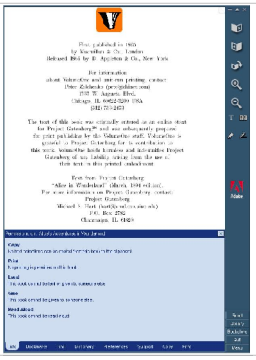
Access v. Copy

act	1201(a)(1): circumvention of *access* control	*circumvention of copy controls?*
tools	1201(a)(2): trafficking in tools to circumvent *access* controls	1201(b)(1): trafficking in tools to circumvent *copy* controls

- To introduce buyers of their new album to songs from their back catalog, the Weevils load the old songs on an encrypted partition on the CD. An application on the CD lets users hear 30-second clips of these songs for free. If they like what they hear, they can pay at the Weevils' website for “unlock codes” good for three tracks at a time.
- Una Hacker buys the Weevils' CD, and thanks to her computer science training, bypasses the encryption to gain access to all the old songs without paying anything extra.
- Has Una violated the law?

- Doc Music wants to use excerpts from some of the Weevils' old songs in his music history teaching materials. He buys unlock codes, but finds the CD's software doesn't allow him to take excerpts from the songs.
- Can Doc use the excerpts in his teaching materials?
- Can Una give Doc the software he needs to extract the audio clips?

Alice in Wonderland eBook

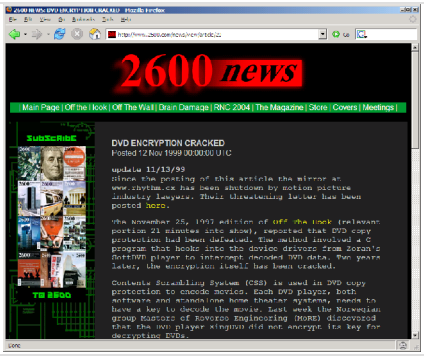


Permissions:
"This book cannot be lent or given to someone else"

"This book cannot be read aloud"

Universal v. Corley

- Major movie studios v. *2600 Magazine*, "The Hacker Quarterly"
- *2600* posted and linked to DeCSS
- Movie studios sued under §§ 1201(a)(2) and (b)(1)



DVD Decryption in Perl

```
#!/usr/bin/perl
# 472-byte qrpff, Keith Winstein and Marc Horowitz <sipb-iap-dvd@mit.edu>
# MPEG 2 PS VOB file -> descrambled output on stdout.
# usage: perl -l <k1>:<k2>:<k3>:<k4>:<k5> qrpff
# where k1..k5 are the title key bytes in least to most-significant order

s"$/=\2048;while(<>){G=29;R=142;if((@a=unqT="C*"._)[20]&48){D=89;_=unqb24,qT,@
b=map{ord qB8,unqb8,qT,_^$a[--D]}@INC;s/...$/1$&/;Q=unqV,qb25,_:H=73;O=$b[4]<<9
|256|
$b[3];Q=Q>>8^(P=(E=255)&(Q>>12^Q>>4^Q/8^Q))<<17,O=O>>8^(E&(F=(S=O>>14&7^O)
^S*8^S<<6))<<9,_=(map{U=_%16orE^=R^=110&(S=(unqT,"\xb\ntd\xbz\x14d")[_/16%8]);E
^=(72,@z=(64,72,G^=12*(U-2?0:S&17)),H^=_%64?12:0,@z)[_%8]}(16..271))[_]^((D>>=8
)+=P+(~F&E))for@a[128..$#a]}print+qT,@a}';s/[D-HO-U_]/\$$&/g;s/q/pack+/g;eval
```

Is it illegal to display this slide?
(David S. Touretzky's Gallery of CSS Descramblers)

Is this wardrobe illegal?

- John Roe pays $19.95 for a DVD of "Tarzan." When he puts it into his standard DVD player, he finds that it shows promotional trailers at the beginning – and he can't fast-forward past them. He doesn't want his young children to be exposed to this commercialism in their own home, so he programs DVD software on his Linux-based computer to skip directly to the beginning of the movie when he inserts the DVD.
- Should the law penalize John for what he did? Does it?

DRM and the smart cow

- All it takes is one cow to push open the gate; the others just have to follow.
- On the Internet, it's easy to follow.

Darknet

- The idea of the darknet is based upon three assumptions:
  1. Any widely distributed object will be available to a fraction of users in a form that permits copying.
  2. Users will copy objects if it is possible and interesting to do so.
  3. Users are connected by high-bandwidth channels.

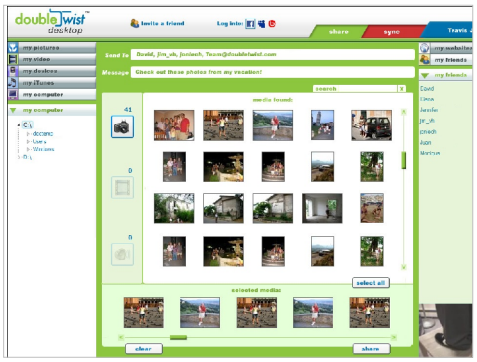
The *darknet* is the distribution network that emerges from the injection of objects according to assumption 1 and the distribution of those objects according to assumptions 2 and 3.

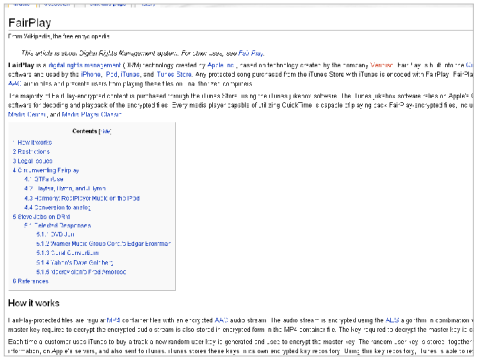
Lexmark

SCC

Lexmark v. Static Control

- Printer company v. toner cartridge remanufacturer
- Lexmark claims SCC microchip circumvents access-controls limiting access to copyrighted printer software
- But the program is available, unencrypted, to anyone who buys a printer





© with a DoubleTwist

- "DVD Jon" Lech Johansen is back in the game of trying to free digital media from corporate strictures on its use. …. Now, he's a founder of doubleTwist, which released a beta version of a new desktop app that makes it possible to play content purchased at iTunes on other devices, including Nokia phones, Sony's PSP and Windows Mobile smart phones. But is it legal? The company says yes… Its argument is that its software doesn't do anything millions of people don't already do when they want to move an iTunes song (or for that matter, any DRM-protected song) onto a non-compatible device: they burn it to a CD, and then re-rip it in MP3 form.

- **Johansen points out that when you install doubleTwist's software, it actually plays all of the songs as it copies into the client application—just as you would when going through the burning & re-ripping process.[22] We**

Peter Burrows, *BusinessWeek*