

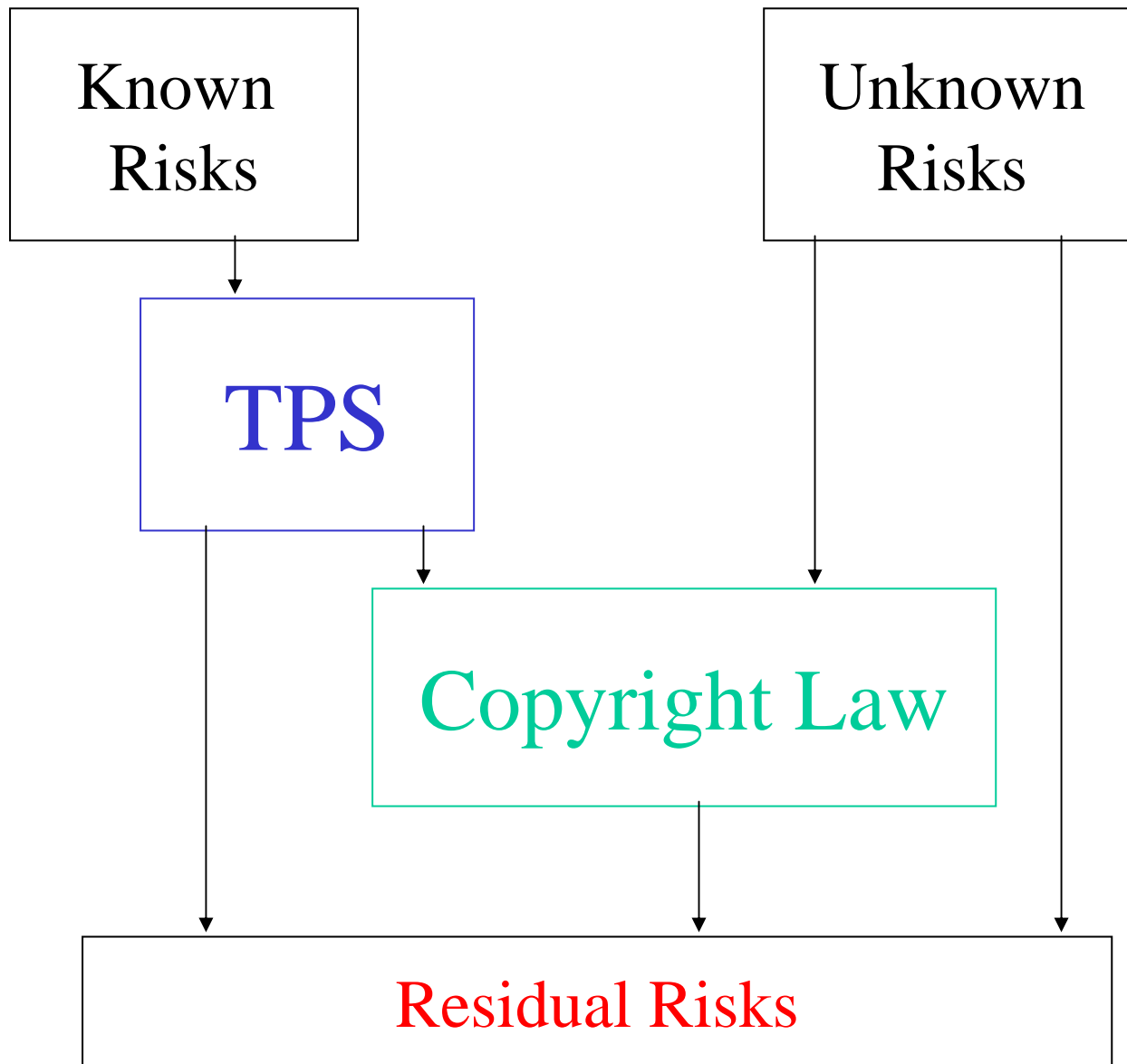
# **CPSC156a: The Internet Co-Evolution of Technology and Society**

**Lecture 12: October 21, 2003**

**Copyright Law, continued: the DMCA**

# Digital Video Disks (DVDs)

- Developed by movie studios and consumer electronics companies in 1995.
- Compatible with CDs. Same size and thickness as CDs. Up to 25 times the storage capacity as CDs.
- TPS for DVDs includes
  - CSS encryption ("content scrambling system")
  - R/W'able copy-control marks (*e.g.*, "copy freely," "one copy," "no copies")
  - Macrovision analog copy protection
  - Other ingredients



# Studios' Overall IP-Management Strategy

- Use TPS to “keep honest people honest.”
- Assume (temporarily) that lack of bandwidth will prevent large-scale Internet distribution of movies.
- Use courts aggressively to punish (alleged) violators of existing copyright laws and *lobby heavily* for new laws that favor rights holders.

# Digital Millennium Copyright Act (1998)

- Illegal, except under narrowly defined special circumstances, **to circumvent effective technological protection measures**
- Illegal to distribute **circumvention tools**
- Gives content owners a property right in TPS as well as the content that the TPS protects. In SAT terms, circumvention is to infringement as breaking and entering is to burglary.

# Examples of Allowed Circumventions

- Nonprofits may circumvent to “shop.”
- Law enforcement and intelligence agencies.
- Reverse engineering to achieve interoperability.
- “Encryption research.” The “researcher” has to “make a good faith effort to obtain authorization.”
- Protection of “personally identifying information.”

# Techies' Objection to DMCA

- What is an “**effective** technological protection measure?”
  - If a skilled hacker can break it, is it “**effective**”?
  - If an average computer-literate person can break it, *but few do*, is it “**effective**”?
- Weakens incentives for content owners to pay for good IP-management technology.
- Shifts costs from content owners to society at large, by shifting responsibility from TPSs to courts and police.
- **Exceptions for R&D are vague.**

# DMCA vs. Copyright Violations

## Questions:

- What does the DMCA actually do to existing copyright law?
- What happens to fair use?
- Are there differences between violations of copyright law and violations of the DMCA?



# DeCSS Violates DMCA

- DeCSS is software that **reads** CSS-scrambled video from a DVD and **writes** unscrambled MPEG-2 video. (**Copying?**)
- DeCSS provides Linux users with access to DVD content.
- In effect, DeCSS **circumvents** the TPS for DVDs.
  - **Question:** Is CSS an **effective** copy-protection mechanism?

# DeCSS Violates DMCA (continued)

- Magazine that published the DeCSS algorithm got sued.
  - **Question:** Is this different from "a reputable journal" publishing **research**?
- **Question:** Is DeCSS different from a regular DVD player?
- **Questions:** Does DeCSS fit under any of the DMCA exceptions? Where is the **copyright violation**?

# Adobe eBook Processor

## Violates DMCA

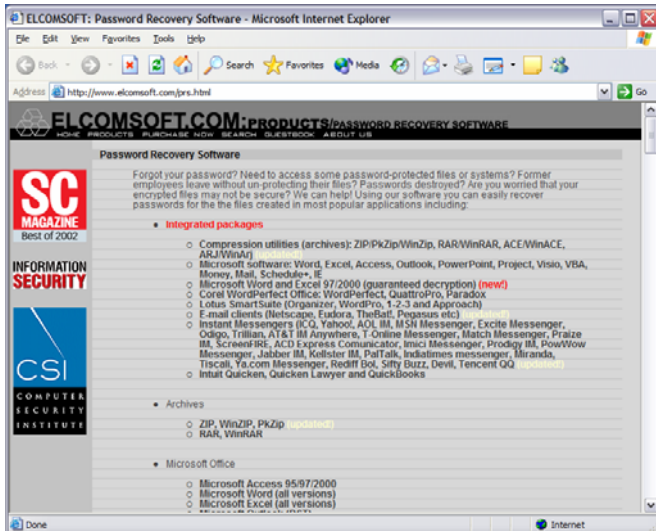
- Adobe established one format for electronic books: the **eBook**.
- To use eBooks, purchase and download them, and view them using a special reader (Adobe eBook software).
- The eBook format contains provisions for publisher controls on:
  - Text-to-speech processing
  - Copying to another device or making a backup
  - Translating between formats

# Adobe eBook Processor Violates DMCA (continued)

- ElcomSoft, a Russian company, created AEBPR, the eBook Processor.
  - AEBPR translates eBooks to Adobe PDF.
  - Software available for purchase on ElcomSoft's website and through a U.S. firm, RegNow (used for handling payments).
- Dimitri Sklyarov, one of the designers, presented his methods at DEF CON, a conference in the U.S.

# ElcomSoft's Product Webpage

<http://www.elcomsoft.com/prs.html>



Here is a partial list of products for which ElcomSoft has developed “**password recovery**” software:

Compression archives: ZIP, RAR, etc.

Microsoft software, including Word, Excel, Access, PowerPoint, Project, Visio, Money, etc.

Corel WordPerfect Office

Lotus SmartSuite

E-mail clients, including Netscape, Eudora, Pegasus, Microsoft Mail

Instant Messaging clients, including ICQ, Yahoo!, AOL, MSN, etc.

Intuit Quicken, Quicken Lawyer  
Adobe Acrobat

# Adobe eBook Processor Violates DMCA (continued)

- Sklyarov was arrested for **violating the DMCA** by circumventing Adobe's protection built into the eBook format.
- **Question:** Does it matter that Sklyarov was working for a company?
- **Question:** Does it matter that the company is Russian, and that its software is legal in Russia?

# Adobe eBook Processor

## Violates DMCA (continued)

- **Question:** Does the software simply allow “fair use” that was prevented by Adobe’s format? (Does that even matter?)
  - People can **make backups** of eBooks they bought and don’t want to lose.
  - People can **transfer copies** to their laptop or handheld.
  - People with visual impairments can have the computer read the eBook.
- **Other Questions:** Is AEBPR a product of research? Is the eBook an **effective** TPS?