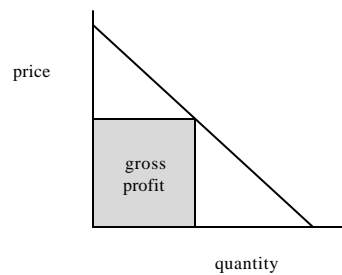# License: Closed and Open

Content Protection redux

- The contract solution:
  - Not the "against the world" provisions of statute
  - Not the common-law of misappropriation
  - But bilateral agreements
- Recall off-line contract law
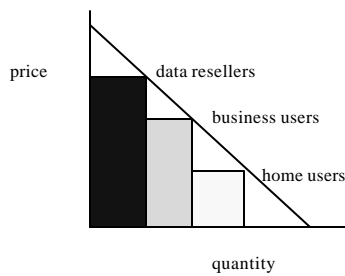 - offer and acceptance
  - battles of the forms

Uses of Contract

- "The license is the product"
- Limit liability
- Protect investment
- Price discrimination
  - differentiate among users willing to pay for different levels of use
  - prevent arbitrage

One Price Fits All

price

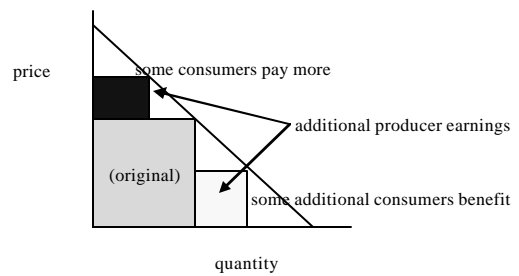gross profit

quantity

Price Discrimination

price

data resellers

business users

home users

quantity

Price Discrimination

price

some consumers pay more

additional producer earnings

(original)

some additional consumers benefit

quantity

The Market

- Does the market work?
- How many click-wraps do you read?
  - If the license is the product, are you an informed consumer?
- Should some policy goals be non-waivable?

Shrinkwrap, Clickwrap, Browsewrap

- Vault v. Quaid
- ProCD v. Zeidenberg
- Specht v. Netscape

Vault

- "[y]ou may not ... copy, modify, translate, convert to another programming language, decompile or disassemble" Vault's program.

- Quaid reverse engineers

ProCD

- You may only use the application program and listings for non-commercial purposes.

- Zeidenberg re-sells access.

Squashing arbitrage

- Macrosquish offers an Academic Version of its popular office suite for less than half the retail price. Can Bernie BigCo, CEO, send Sam Student to buy a copy and pay him $5 more than the academic cost as a delivery fee?
- Does it matter what the license agreement says? When a purchaser sees it?

The Rewrite-Wrap

- Oracle's software downloads include a click-through license, in a text-box on the web form you must "accept" before proceeding. Among other things, the Oracle click-through prohibits disclosure of benchmark tests. Tara Tester wants to compare Oracle's performance to IBM's, so she changes the text before clicking "accept." Is there a contract? What are its terms?
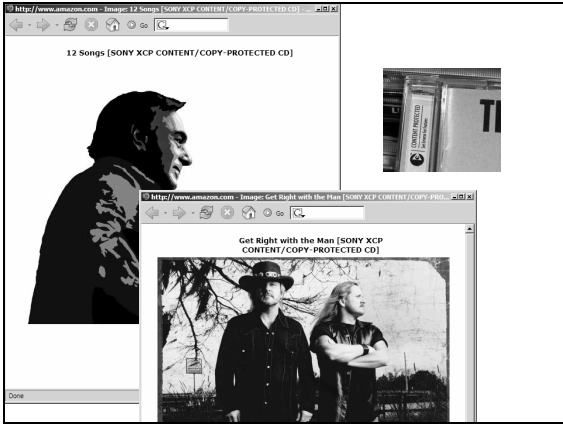
The SonyBMG Rootkit

- You buy Van Zant's "Get Right with the Man" and put it into your PC. A dialog pops up saying "the CD will automatically install a small proprietary software program onto YOUR COMPUTER." (Even before you click "Accept," the CD has installed several files.) You just want to hear the music. Have you agreed to let Sony add kernel-level drivers to your computer?

Free Software / Open Source

- Source Code:
  - human readable, "best form for making modifications"

```
voidCSSdecrypttitlekey(unsignedchar *tkey,unsignedchar *dkey)
{
    int i;
    unsigned char im1[6];
    unsigned char im2[6]={0x51,0x67,0x67,0xc5,0xe0,0x00};
        for(i=0;i<6;i++)
            im1[i]=dkey[i];
        CSStitlekey1(im1,im2);
        CSStitlekey2(tkey,im1);
}
```

- Object Code:
  - compiled, executable, much harder to read or modify

```
0000120 6d74 6162 002e 7374 7274 6162 002e 7265
```

Source Code

APPENDIX A: C source file fact.c

```
#include <stdio.h>
void main(int argc, char *argv[]) {
 int i, result;
 result = 1;
 for (i = 1; i<6; i++) {
  result = result * i;
 }
 printf ("Result is:  %d.\n",result);
}
```

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Object Code

APPENDIX C: binary file fact.o (produced by: gcc -c fact.c;
        dumped by: od -x fact.o)

```
0000000 7f45 4c46 0102 0100 0000 0000 0000 0000
0000020 0001 0002 0000 0001 0000 0000 0000 0000
0000040 0000 0234 0000 0000 0034 0000 0000 0028
0000060 0008 0001 002e 7368 7374 7274 6162 002e
0000100 7465 7874 002e 726f 6461 7461 002e 7379
0000120 6d74 6162 002e 7374 7274 6162 002e 7265
0000140 6c61 2e74 6578 7400 2e63 6f6d 6d65 6e74
0000160 0000 0000 9de3 bf88 f027 a044 f227 a048
0000200 9010 2001 d027 bfe8 9010 2001 d027 bfec
...
```

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Free Software Definition

- "Free software'" is a matter of liberty, not price. [free speech, not free beer]
- "Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:
  - The freedom to run the program, for any purpose (freedom 0).
  - The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
  - The freedom to redistribute copies so you can help your neighbor (freedom 2).
  - The freedom to improve the program, and release your improvements to the public, so that the whole community benefits. (freedom 3). Access to the source code is a precondition for this.

GNU General Public License (GPL)

1. You may **copy and distribute** verbatim copies of source code, with appropriate copyright notice and disclaimer of warranty
2. You may **modify** your copy, and distribute modified copies under the same terms
   with notice of changes
   under this GPL
3. You may distribute **modified object code (binaries)** iff you make source code available

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Viral or Antibiotic?

- The hypothetical Sysco Cistems writes embedded software. A programmer finds that someone else has written the function she needs, so she incorporates that code into her program. Sysco sells the product without including source code or any reference to third-party code.
- What liability if the code is copyrighted?
- What liability if the code is copyrighted and licensed under the GPL?
- What options does Sysco have in each case?