

Legislation & Embedded Software

Fundamental Ambiguities in Law and Computer Science

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Opening Question

- ⇒ What is the difference between embedded and non-embedded software?
- ⇒ Suppose that
 - a product includes software,
 - two different laws could apply to the product,
 - what factors could you list to help a judge decide whether the software is embedded or not?

Examples of Embedded(?) Software: How Should We Classify These?

- ⦿ Fuel injectors
- ⦿ Anti-lock brakes
- ⦿ Hot water heater control
- ⦿ Refrigerator control
- ⦿ Home medical devices
- ⦿ Rice cookers
- ⦿ Sewing machines
- ⦿ Cockpit control software
in a jet
- ⦿ Computer OS
- ⦿ Computer BIOS
- ⦿ Printer firmware
- ⦿ Computer games on
cartridges
- ⦿ Computer games on
disk
- ⦿ Computer games
bundled with the
computer

Why Does This Matter?

- ➲ The two laws are
 - Article 2 (Law of Sales) of the Uniform Commercial Code (*aka Article 2*), and the
 - Uniform Computer Information Transactions Act (*aka UCITA*)
- ➲ As we speak today, the drafting committee for revised Article 2 is debating whether they can distinguish between embedded and non-embedded software.

Background: Article 2

⇒ Uniform Commercial Code

- Written by the National Conference of Commissioners on Uniform State Laws (*aka NCCUSL*) and the American Law Institute (*aka ALI*).
- Adopted (most of it) as law in all 50 states
- Separate Articles, including Article 2 (Sales) (other Articles govern wire transfers, cheque payment systems, secured loans, etc.)
- Careful, thoughtful, balanced treatment of buyers' and sellers' rights.

Background: Article 2 and Software

- ⇒ Courts have applied Article 2 to contracts involving off-the-shelf software since 1970.
- ⇒ Back then, software was not considered copyrightable or patentable, so software companies tried to *license* their software.
(They had to do something to protect their intellectual work products.)
- ⇒ A license grants and restricts rights.
- ⇒ Since then, the patent and copyright laws have been extended to protect software IP.

Licensing vs. Sales

Licensing tradition

- Non-anonymous contracts
- Often, signed contracts, sophisticated parties
- Disclosure and use restrictions
- Examples:
 - ➔ Technology license
 - ➔ Evaluation license

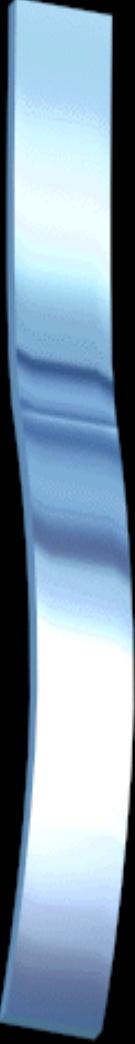
Sales tradition

- Anonymous contracts
- Form contracts
- No restrictions on use or disclosure. Key doctrines:
 - ➔ Alienation
 - ➔ First sale
 - ➔ Exhaustion
 - ➔ Fair use

Background: Article 2

- ⇒ Early 1980's, Louisiana passed the Software License Enforcement Act (SLEA)
- ⇒ Vault Corp v. Quaid Software, federal courts reject the SLEA
 - (Additional details in *Testing Computer Software*, ch. 13)
- ⇒ 1991, federal courts rejected disclaimer of implied warranties in software contract b/c they didn't conform to Article 2 requirements. The appellate court said:

Background: Article 2 & Software



"TSL has raised a number of public policy arguments focusing on the effect on the software industry of an adverse holding concerning the enforceability of the box-top license. We are not persuaded that requiring software companies to stand behind representations concerning their products will inevitably destroy the software industry."

Step-Saver Data Systems, Inc. v. Wyse Technology and The Software Link, Inc.

Background: UCITA

- ⇒ 1988, group of lawyers form a task force within a committee within a section of the American Bar Association. Eventually (1991) they produce a "model" software licensing law.
- ⇒ 1992, NCCUSL and ALI agree to consider software transactions in new revision of Article 2, expand Article 2 drafting committee to include participants in ABA project.
- ⇒ 1995, Article 2 committee is hopelessly divided on policy issues and splits. NCCUSL and ALI decide Article 2B will become the new software licensing statute, within the UCC.

Background: UCITA

- ⌚ 1996-1999, Article 2B drafting committee broadens their scope to cover licensing of all types of information, then narrow scope to exclude hard copy books and (at vendor's choice) movies and sound recordings, then expand scope to allow vendors to include computers and peripherals.
- ⌚ 1997, ALI membership passes resolution calling for revision of Article 2Bs' intellectual property rules (which favor vendors, allowing them to ban reverse engineering, bar customers from publishing negative magazine reviews, bar customers from lending, selling or giving away their used copy of the software, etc.)

UCITA Licensing Consequences

102 (a)(19) “Contractual use term” means an enforceable term that defines or limits the use, disclosure of, or access to licensed information or informational rights, including a term that defines the scope of a license.

(58) “Scope”, with respect to terms of a license, means:

- (A) the licensed copies, information, or informational rights involved;
- (B) the use or access authorized, prohibited, or controlled;
- (C) the geographic area, market, or location; or
- (D) the duration of the license.

UCITA Licensing Consequences

- Restrictions on reverse engineering
 - ➔ Current law: enforceable in traditional licenses, never enforced in anonymous contracts
- Restrictions on disclosure (ban publication of benchmark test results or reviews)
 - ➔ McAfee Viruscan license
 - ➔ Oracle license, Microsoft SQL Server License
- Restrictions on transfer
 - ➔ Wipe out market for used software, library use
 - ➔ Enormously complicate sale of a used computer or merger / sale of a business

Background: UCITA

- ⇒ 1998, ALI membership passes resolution calling for FUNDAMENTAL REVISION of Article 2B because its contract rules were too vendor-favorable, and were anti-competitive.
- ⇒ 1999, after the last 2 years' resolutions are ignored, ALI withdraws from the process. NCCUSL decides to go forward, makes a few tweaks, and promulgates UCITA.
- ⇒ 2000-2001, UCITA is passed only in Virginia and Maryland, rejected in several other states. (Most active current fight is in Texas.)

Post-Sale Contracting

- UCC Article 2 dealt with form contracts.
 - ➔ Terms not specified at time of contracting were filled in with defaults
 - ➔ Terms specified after the agreement were "modifications" and could be rejected by the other party.
 - ➔ A party could reject material modifications and insist on performance of the original contract.
- UCITA creates a post-sale clickwrap structure
 - ➔ Terms need not be specified until after payment and delivery. These are original terms, not modifications. Fully enforceable.
 - ➔ Comparison shopping and comparative reporting of quality-related terms (warranty, service policy) become impractical

Post-Sale Contracting:

Contrast with UCC and Consumer Protection Laws

- Under U.C.C. 2-314, a warranty that goods are merchantable is implied in a contract for their sale.
 - ➔ Merchantability requires that the program do what a reasonable customer would expect it to do (and that it be salably packaged).
 - ➔ The seller can exclude the warranty, but it must be done correctly.
 - ➔ California Civil Code 1792.4 (a) *No sale of goods . . . , on an “as is” . . . basis, shall be effective to disclaim the implied warranty of merchantability . . . unless a conspicuous writing is attached to the goods which clearly informs the [consumer], prior to the sale, in simple and concise language.*
 - ➔ Federal Magnuson-Moss Act *requires disclosure of key contract terms pre-sale and bars disclaimer of implied warranties when there is a written warranty.*
- These rights vanish under UCITA (merchantability is disclaimed post-sale)
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Law of Embedded Software?

- ⇒ UCITA's scope is (purportedly) stand-alone software, not embedded software.
- ⇒ 1999, pressure begins on Article 2 drafting committee to exclude non-embedded software from Article 2.
- ⇒ 2000-2001, as legislative adoption of UCITA stalls, software industry's pressure on Article 2 committee increases. (In a state that has not adopted UCITA, what law will a judge turn to for guidance if software is taken out of Article 2? UCITA, of course.)

UCITA & Article 2

- ⇒ Political (perceived) reality:
 - If Article 2 does not exclude non-embedded software, software publishers will kill it.
- ⇒ Question:
 - Should Article 2 exclude non-embedded software?
 - What principled basis can we find for a distinction between embedded and non-embedded software?

References

- ⇒ UCITA: www.law.upenn.edu/bll/ulc/ulc.htm
- ⇒ NCCUSL: www.nccusl.org
- ⇒ ALI: www.ali.org
- ⇒ UCITA proponents: www.ucitaonline.com
- ⇒ UCITA opposition: www.ucita.com and
www.badsoftware.com
- ⇒ Kaner & Pels, *Bad Software*, Wiley 1998
- ⇒ Kaner, Falk & Nguyen, *Testing Computer Software*, Wiley 1999 (reprint of 1993 2nd ed)