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Chris Hart IV
Chair
Committee of Information Technology
Florida House of Representatives
412 House Office Building
402 South Monroe Street
Tallahassee, FL 32399-1300

Dear Mr. Hart:

Thank you for your invitation to comment on UCITA to the Information Technology Committee. Here are some responses to your specific questions. Following those responses, I will briefly summarize my background.

I am not footnoting every statement in this memo. I have written extensively, with careful footnoting, and encourage you to read my articles (cited below). Alternatively, if there is any contention that I make that you want justified or explained, please contact me. I travel extensively to speak at technical conferences. You can most easily and most reliably reach me by email, sending mail to kaner@kaner.com.

1. Do you support or oppose adoption of UCITA in part or in whole, and why?

At the start of the Article 2B project, I supported the development of a uniform law to govern computer-related contracts. I supported several of the concepts underlying Article 2B / UCITA but felt that others needed improvement. As the draft legislation was revised, it became increasingly unbalanced. At this time, I oppose UCITA in whole.

UCITA is designed to protect software vendors in their relationships with their customers. The reference question throughout the committee deliberations was how a proposal would affect or be interpreted by “the industry.” The result was a bill that is so one-sided that it will have negative long-term consequences for the software engineering profession, for small software developers and small competitors to the large publishers, and for the public as a whole.

2. What parts of UCITA do you support or oppose, and why?

For a more complete answer to this question, with extensive supporting footnotes, I urge you to read some of my papers:

- *Software Engineering and UCITA* is my most thorough analysis. It is available at <http://www.badsoftware.com/engr2000.htm>.

- *The Problem of Embedded Software* considers the extent to which UCITA will govern contract involving embedded (including safety-critical) software. Despite the denials by UCITA proponents, the extent of coverage will be substantial. See <http://www.badsoftware.com/embedd1.htm>.
- *Article 2B and Reverse Engineering* explains the normal uses and practices of reverse engineering, and why it would not be in the public interest or the interest of development of the profession to enforce the bans on reverse engineering that are routinely placed in software licenses. See <http://www.badsoftware.com/reversea.htm>.
- *UCITA and Small Business* considers the impact of UCITA on small businesses. I have appended most of that article to this memo.

Here are some specific examples of the problems with UCITA:

- ***Software vendors have no obligation to reveal the terms of their contracts until after the customer has paid for the software and started to use it.*** I have personally attempted to discover the terms for some mass-market software products and access contracts before agreeing to pay for the software and beginning to install it on my computer. In some cases, companies have sent me their terms. In others (e.g. Compuserve), they have not, despite repeated requests.
- ***By allowing software vendors to refuse to reveal the terms of their contracts, UCITA makes it much harder for journalists to publish product comparisons.*** Examples of terms that are not revealed are the vendor's warranty terms, support policies (including the amount that publishers charge for support and the circumstances under which they charge, such as whether they charge for support calls that involve defects that were known to the publisher at the time of release of the product), upgrade policies, transfer policies, and other use restrictions. For products that are available in the mass market to any purchaser who can afford them, there is a strong public interests in enabling journalists to publish factual product comparisons.
- ***The "right of return" is a sham.*** The "right of return" grants the mass-market customer the right to return the product if she disagrees with the terms of the contract. The right is provided because the customer is not entitled to see the terms of the contract until after the sale is completed. The customer discovers the terms when she starts to install the software, after she has paid for it, finished shopping, and is now trying to use it. I call it a sham because
 - (a) The "right" expires as soon as the customer clicks OK to install the software. It is unlikely that the customer, when trying to use the product that she just bought, will have time or ability to stop and understand the dense legal text of the typical software license. If the customer comes to understand the harshness of the terms after installing the software, there is no right of return. If the product, as installed, immediately proves to be defective, the customer has no right of return.
 - (b) The customer has no realistic ability to comparison shop for some other product. To discover the terms in a competitor's product, you have to buy it and install it, and then return it if its terms are also unsatisfactory. The Magnuson-Moss Act allows customers of all other mass-market products that cost more than \$15 to get a copy of the essential

terms on request, pre-sale. No other product in the mass-market imposes such a hassle on the customer who wants to know about the manufacturer's warranty and support policies.

(c) There is no reimbursements to the customer for all the lost, wasted time involved in buying a product and returning it once he decides that the terms are unacceptable.

(d) The right of return is sometimes passed off as a consumer compromise. This is not so. It was proposed in the Article 2B/UCITA drafting committee meeting by a lawyer who represented the Business Software Alliance. I know of no consumer advocates who considered it a fair replacement for the right to see the contract before paying for the product and starting to use it. No consumer advocate, in any Article 2B / UCITA drafting committee meeting, any American Law Institute meeting, or any NCCUSL meeting that I attended (and I have attended several, including almost all of the drafting committee meetings), ever spoke in favor of the "right of return" beyond saying that it was a nice, if insufficient, gesture.

(e) Non-mass-market business customers often will not have a right of return. I'm often challenged on this point, so here is some detail:

- Under **UCITA section 112(e)(3)**, a mass-market customer has a right to a refund if the seller does not make the terms available until after the sale and the customer does not agree to them. **"However, a right to a return is not required if: . . . (B) the primary performance is other than delivery or acceptance of a copy, the agreement is not a mass-market transaction, and the parties at the time of contracting had reason to know that a record or term would be presented after performance, use, or access to the information began."** *Under these circumstances, the non-mass-market customer has no right to reject the terms and return the product.*
- Contrast this with Article 2 of the U.C.C. Under Article 2's section 2-207, ("[A]dditional terms are to be construed as proposals for addition to the contract. Between merchants such terms become part of the contract unless: (b) they materially alter it.") the customer can reject material post-sale changes and keep the product anyway. And the leading case that enforced post-sale terms, *Hill v. Gateway 2000* (105 F.3d 1147, 7th Cir. 1997) specifically cited the right of return granted in the Gateway contract as the basis for enforceability of the contract. *The much-vaunted "right of return" is not only not new. It is narrowed so that many businesses will no longer will be able to take advantage of it.*
- Under UCITA section 112(f), the licensor can eliminate the right of return for repeat customers, whether they are consumer, mass-market, or other, by setting out licensor immunizing standards for future transactions between the customer and vendor. ("The effect of provisions of this section may be modified by an agreement setting out standards applicable to future transactions between the parties.") Section 113(a)(3) might appear to slight limit this. Under section 113, the requirements for manifesting assent and opportunity for review in section 112 may not be varied by agreement. However, 112(a)(3)(C) takes this back, saying they may not be varied *except to the extent provided in section 112*. Thus, despite section 113, because of section 112(f), the shrink-wrapped contract that comes with that transaction can wipe out your rights as to all future transactions.

- Under UCITA section 113(a) (1) “Obligations of good faith, diligence, reasonableness, and care imposed by this [Act] may not be disclaimed by agreement, but the parties by agreement may determine the standards by which the performance of the obligation is to be measured if the standards are not manifestly unreasonable.” *This applies to all customers, including mass-market customers. In a post-sale, shrink-wrapped contract, what standards do you think vendors will write for themselves? “Manifestly unreasonable” is not much in the way of protection against abuse.*
- ***UCITA enforces use restrictions unless a court determines, on a case by case basis, that a restriction violates fundamental public policy, under a balancing test that is strongly biased in favor of enforcing the contract term.*** Several of these terms are anti-competitive. For example,
 - (a) vendors include terms that ban customers from writing product reviews or publishing the results of benchmark studies. I agree with the enforcement of nondisclosure terms in non-mass-market transactions, when secrecy is important to prevent a competitor from gaining premature knowledge of a product. But the policies behind enforcing nondisclosure terms simply do not apply when the product is offered for sale to the general public, to anyone willing to pay for it, including competitors. In this case, the nondisclosures serve the purpose of protecting the vendor from criticism of their products, from fair competition, not from unfair competition. In as statute that is rooted in free market principles, it is outrageous to see tolerance of terms that will prevent customers from learning enough about competing products to be able to make informed decisions.
 - (b) vendors include terms that bar customers from reverse engineering the software. Allegedly, these terms prevent potential competitors from learning the vendor’s trade secrets. In practice, reverse engineering for this purpose is very rare. More often, reverse engineering is done to discover the basis of interoperability problems (and enable a 3rd party to work around or repair them), to discover and repair defects, to discover security flaws in the software, or to learn (in educational settings) how professional programmers solve problems. There is no public interest in barring these activities, and court cases involving reverse engineering of mass-market software routinely refuse to enforce the clauses. UCITA provides new support for the idea that the vendor can enforce such clauses.
 - (c) Microsoft has recently included a license term in some of its development products that bar users from creating products that will be licensed under the various “free software” licenses (which Microsoft calls “viral” licenses). These are the license terms used by primary competitors to Microsoft, such as Linux and StarOffice (a free replacement for Microsoft Office). Terms like these interfere with the development of competitive products, something that a monopoly player should not be allowed to do.
 - (d) Other companies, such as Intel, include terms that assert rights to anything you create with their product. (I document the license terms, in the case of a web-based presentation tool, in *Software Engineering and UCITA*). Terms like these are surprising and should be unenforceable in mass-market contracts.

- ***Contracts can be made noncancellable by the customer, even if there is a material breach by the vendor (who drafted the contract).***
- ***The contract (non-negotiable, terms not available until after the sale is complete) can include an enforceable term that says the terms can be changed at any time. Business customers will not be able to cancel such a contract, even if the change of terms is material. Non-business (mass-market) customers will be able to cancel the contract if the change is material, but they will not be able to enforce the original terms that enticed them to buy the product or service.***
- ***The UCITA definition of material breach is far more vendor favorable than the Restatement of Contract's definition. Business customers have no perfect tender rule under UCITA (in contrast to Article 2) and they have no right to return a defective product and cancel the contract unless the product is so defective that the breach is "material" as defined by UCITA.***
- ***Vendors can inconspicuously disclaim all warranties and exclude virtually all damages.*** I say "inconspicuously" because UCITA allows the vendor to refuse to disclose such terms until after the sale. A term is not conspicuous if a customer cannot see it until after making a purchasing commitment (paying for it, downloading it or taking it away, and starting to use it). Putting the term in all caps (but only visible after the sale) hardly makes it conspicuous. To the extent that there is a public policy that favors requiring a seller of new merchandise in the mass market to warrant that the product is reasonably fit for ordinary use and conforms to the promises on the packaging, UCITA subverts it.
- ***Vendors can make their products non-transferable, even in the mass-market.*** If you buy a computer game for your son, and he finishes playing it, the vendor can tell you that your son can't give away his game to another child in the neighborhood. We aren't talking about piracy protection here. The child can be barred from giving away the original product, even if he deletes any copy that was on his computer. The provision is there to allow vendors to eliminate the market for used merchandise of the type they sell. Why should software vendors (and probably computer vendors) be able to block the resale of their products, when car manufacturers, furniture manufacturers, book publishers, and every other seller cannot? Markets in used goods are a normal part of our economic structure and a check on exorbitant pricing by vendors. Why spare software vendors from this competition?
- ***UCITA will cover embedded software, computers, and computer peripherals.*** Despite protestations to the contrary by supporters of UCITA, the plain language of UCITA brings much embedded software within its scope. And when the embedded software is a significant part of the transaction, goods that are sold with it can also be brought within UCITA by a post-sale, click-wrapped or shrink-wrapped contract. Remember, the "official comments" to UCITA are not legislative comments. Nor were they carefully reviewed during the Article 2B / UCITA meetings (I attended some 15 drafting committee meetings and attempts in the meetings to challenge, craft or fix the wording of the Comments were consistently rebuffed). The black letter of UCITA is what a judge in Florida will and should rely on in interpreting UCITA. When I review the language with engineers who have worked with embedded software, they quickly see how broad

is UCITA's coverage. A few weeks ago, I presented UCITA to a meeting of an Underwriters Laboratories standards committee that focuses on embedded software. This two-day meeting was generally very dry and humorless but when I showed them the UCITA scope clauses and said that some people think these clauses take embedded software out of the scope of UCITA, the room was filled with laughter. For more detail, please see Article 2B and Reverse Engineering explains the normal uses and practices of reverse engineering, and why it would not be in the public interest or the interest of development of the profession to enforce the bans on reverse engineering that are routinely placed in software licenses. See <http://www.badsoftware.com/reversea.htm>.

- ***The definitions of consumer and mass-market are too narrow in UCITA.*** Someone who uses a product for “professional” use is not using it as a consumer. For example, a high school teacher who uses her AOL account to gather materials for class is acting professionally and not as a consumer (as UCITA defines consumers). The AOL contract is an access contracts and access contracts are not mass-market contracts (even if they are signed with 25 million members of the public) unless they are consumer contracts. Thus, the teacher would be treated the same way as a large business--the protections, such as they are, for mass-market customers would not apply. For more on this issue, see my notes on UCITA and Small Business in Appendix 1.
- ***Self-help, as defined within UCITA, poses security risks that are not managed by UCITA.*** I believe that the self-help provisions of UCITA were the result of a genuine attempt to reconcile the interests of those software vendors who want to be able to use self-help, and their potential customers. (NOTE: I have heard it claimed that small vendors want to be able to exercise self-help and that UCITA included self-help in response to their requests. The one group representing self-employed software developers and small software consulting firms, the *Independent Computer Consultants Association*, opposed the inclusion of self-help clauses in UCITA contracts and recommended instead that UCITA allow them to recover costs and attorneys fees from their customers when they prevail in an action (for an injunction) to stop a customer from using their software. The other trade associations included a mix of large and small software developers / publishers. Speaking as an attorney who has represented individual development consultants and small businesses (of developers), I can say that none of my clients would have been well-served by UCITA's rules because they are too complex for the small developer to safely use. There are too many high-cost traps. My strong impression was the self-help was included to serve the needs of large consulting companies like *Computer Associates*.) Whoever UCITA's self-help provisions were intended to serve, UCITA makes it difficult or dangerous for the vendor who wishes to exercise self-help to abuse its power. ***However, by allowing the vendor to build a backdoor into its software that will enable it to shut down the use of the product, UCITA creates an opportunity for security problems. If a third party exploits the backdoor, such as a former employee or a skilled hacker, the software vendor has no liability to the customer. The vendor who decides at time of contracting that it will not use the backdoor with a given customer need not disclose such code at time of contracting (or any later time). Add in the vendor's ban on reverse engineering and the customer is helpless to discover a serious security risk.*** It is often unclear whether a company can engage in self-help with a customer today. Some courts have allowed it, others not. Statutes that bar tampering are sometimes interpreting as barring self-help.

By creating a clear, legal structure for exercising self-help, UCITA will encourage the adoption of this practice, making it--and the security risks that come with it--much more common.

- ***UCITA has no warranty against viruses.*** Viruses are often spread by electronic mail, from user to user. But they are sometimes spread by software publishers. Mass-market software products often come with installation advice that tells you to turn off your virus checker while installing the product. If the product has a virus on it, the reasonably prudent end user will get the virus because it is coming via a trusted route. Most publishers of Windows-based software take significant care to avoid shipping products with viruses. Typically, they test with two or three different virus checkers, because some viruses are designed to get past the checks that are run by one of the leading programs. The different programs have different weaknesses, so that a virus that gets past one is likely to be caught by the second. Despite this routine, reasonable, but inexpensive level of care that is exercised by most publishers, some are more sloppy, especially when they release product updates. As an example, there are at least 10 cases in which software companies released products with the Michaelangelo virus even though the virus was well known and the main virus checkers had been updated to detect this virus and would have exposed it if the manufacturer had run a virus check before shipping the product. In the UCITA meetings, we discussed creating a specific, nondisclaimable warranty that a merchant seller / licensor warrants that reasonable care has been taken to prevent or detect viruses (e.g. that the software has been tested for viruses). This was rejected. Under UCITA, a product that comes from the software publisher with a virus that could easily have been caught, is in breach only of the warranty of merchantability (it is not fit for normal use), but that warranty will almost always be disclaimed, and the damages will almost always have been limited to the refund price of the software, almost certainly a much lower cost than the cost of recovering from the virus. It is so easy for publishers to run these types of tests (I've been involved in the release of about 300 software products, either managing the release myself or setting internal standards or procedures under which they will be released) that it seems absurd to place the burden for virus checking on the customers, many of whom are consumers and far from knowledgeable about how to use a virus checker.
- ***UCITA creates new risks for small developers.*** Contracts for software products have been consistently treated as contracts for goods under Article 2. However, contracts for software-related services are generally outside of the scope of Article 2, and thus outside of Article 2's creation of implied warranties. The implied warranty for a service contract is that the service provider will make workmanlike efforts and apply workmanlike skill. This is very different from the warranty of merchantability or a warranty of fitness for use. UCITA integrates goods and service contracts. The result is that consultants and small developers become subject to new implied warranties, and they will probably not even realize it.
- ***UCITA creates substantial risks and expenses associated with email.*** We are flooded with electronic junk mail. Internet Service Providers estimate that spam accounts for 25% of their operating costs. Recipients, normal businesses, regularly receive advertisements promoting pornography, fraudulent business activities, racist activism, etc. These businesses have a strong and legitimate interest in filtering their mail, in using a

program that recognizes certain senders or words in messages and deleting the messages before the user ever sees them. Unfortunately, under UCITA, legal notices can be sent by email messages, and messages are typically deemed to have been received when they hit the intended recipient's ISP, even if the message as received by the intended recipient is unreadable or was automatically filtered out by a reasonably designed spam filter. In effect, UCITA is banning the use of spam filters--you can use one, at home or at work, but if it wipes out a message that was a legal notice (not a notice you are hiding from, just a notice that looks too much like spam), you will be held accountable as if you had received it and read it. People who don't receive much email don't realize what a burden it is to wade through (and delete) 300 to 500 messages a day. Telling businesses that they cannot filter these out is imposing an enormous tax on them, in terms of wasted labor, irritation and gossiping time of every employee who receives and thus has to delete virtual tons of email.

3. Do you believe your business communications / transactions would be affected by UCITA, and if so, how and to what extent?

UCITA was designed to help software publishers evade liability to their customers for defects in their products. I say it was designed to achieve this based on the many comments in the meetings and in the Comments to UCITA that it is impossible for publishers to find all of the problems in their software (I agree that this is true and actually wrote a paper for the UCITA drafting committee that explained why this is so) and therefore it is unfair to hold them accountable for every defect. Based on this perceived unfairness, UCITA was revised to make it easy to disclaim warranties, limit damages, and control the press.

By protecting the worst software vendors from facing the consequences of their own defective products, UCITA endorses a model of software development that involves selling low quality software prematurely. Nothing in UCITA distinguishes between defects that the publisher never knew about and defects that the publisher discovered during product development and quality control, and decided to release the product with the known defects left unfixed. Within the profession of software engineering, we consider it unethical to release products without disclosing known defects. UCITA encourages developers to engage in conduct that we would consider unethical. In this and so many other ways, UCITA makes it hard for us (university professors) to train our students to follow good engineering practices. There are no consequences to companies who follow bad practices and release highly defective code in order to realize revenue as early as possible.

For other impacts of UCITA, see the notes in #2.

4. What modifications to UCITA, if any, do you believe would be necessary / appropriate to render it advantageous to your business communications / transactions?

Here are a few suggestions:

- Legal notices should not be deemed to have been received and read by a person unless that person acknowledges receipt. For those people who do not acknowledge receipt, let the notifier use regular mail or some other traditional notice delivery service.
- Software customers should always be able to get a copy of a software contract before they pay for the product. As with Magnuson-Moss disclosure requirements, I am not saying that every customer *should* get a copy of the contract. Rather, I am saying that everyone who asks for one, should get it. It is trivially easy to post such a contract on a website.
- Use restrictions should be narrowed in scope. See my proposed amendments, below.
- Vendors should be required to disclose known defects. See my proposed amendments, below.
- Embedded software, or at least safety-critical embedded software, has absolutely no business within UCITA. To exclude it, see my proposed amendments, below.
- Free software should be excluded from UCITA-based consumer and mass-market protections
- All “consumer” protections should be extended to mass-market customers.
- “Mass-market” should include access contracts that are sold to the mass market.
- Warranties of reasonable care by merchants to provide products that don’t have viruses should be implied into contracts, not be disclaimable, and should provide for reasonable reimbursement of damages if the contract is cancelled prematurely.

Many more suggestions are appropriate (see my comments above, in Section 2), but you will see most or all of them in other letters. Here are a few proposed amendments that I wrote and that you are therefore less likely to see in someone else’s memo:

Define “Free Software” and exclude it from Consumer and Mass-Market Identification of Section to be changed:

SECTION 102. DEFINITIONS.

Text Deleted and Inserted:

Section 102(a)(16) “Consumer contract” means a contract between a merchant licensor and a consumer. However, a contract to provide free software is not a consumer contract.

Section 102(a) (32) "Free software" means computer information that is available to the public at no charge beyond the cost of media and delivery, that may be redistributed at no charge, and that is distributed without contractual use terms. If the computer information includes a computer program, the source code is available for that program at no charge beyond the cost of media and delivery.

Section 102(a)(4~~65~~) “Mass-market transaction” means a transaction that is: ... (B) any other transaction with an end-user licensee if: ... (iii) the transaction is not: (V) a contract to provide free software.

Explanation of Amendment

The default rules for consumer and mass-market software are inappropriate for software that is created by volunteers, distributed for free, and whose source code is also available for inspection and modification.

Exclude safety-critical embedded software from UCITA

Identification of Section to be changed:

SECTION 103. SCOPE; EXCLUSIONS.

Text Deleted and Inserted:

Section 103 (b) Except for subject matter excluded in subsection (d) and as otherwise provided in Section 104, if a computer information transaction includes subject matter other than computer information or subject matter excluded under subsection (d), the following rules apply:

(1) If a transaction includes computer information and goods, this [Act] applies to the part of the transaction involving computer information, informational rights in it, and creation or modification of it. However, if a copy of a computer program is contained in and sold or leased as part of goods, this [Act] applies to the copy and the computer program only if:

(A) the computer program does not control or interact with the goods in such a way that an error in the program could cause personal injury or damage to personal property, and

(BA) the goods are a computer or computer peripheral; or

~~(B)~~ giving the buyer or lessee of the goods access to or use of the program is ordinarily a material purpose of transactions in goods of the type sold or leased.

Explanation of Amendment

In repeated drafting committee discussions during the drafting of UCITA, and in many places in the comments to UCITA, there is a clear intent that UCITA exclude embedded software. However, the black letter is ambiguous. Computer Science professionals have repeatedly warned that much safety-critical embedded software will either fit within the scope of UCITA today or manufacturers of goods will be able to bring the scope of their software within UCITA in the near future by making straightforward engineering changes.

The amendment specifically excludes safety-critical embedded software from UCITA. For those who believe that UCITA already excludes such software, this language merely restates this fact in the black letter in a clearer way.

This amendment does not take all other types of embedded software out of the scope of UCITA. Embedded software whose failure will cause economic losses but not injury or damage to tangible property may or may not fall within the scope of UCITA, depending on how courts interpret the rest of Sections 103 and 104.

I respectfully suggest that UCITA would be improved further by a broader change, deleting all of the language, “(A) the goods are a computer or computer peripheral; or (B) giving the buyer or lessee of the goods access to or use of the program is ordinarily a material purpose of transactions in goods of the type sold or leased,” rather than adding new language that is restricted to safety-critical software.

Allow Some Types of Reverse Engineering and Public Discussion

Identification of Section to be changed:

SECTION 105. RELATION TO FEDERAL LAW; FUNDAMENTAL PUBLIC POLICY; TRANSACTIONS SUBJECT TO OTHER STATE LAW.

Text Deleted and Inserted: (Add the following)

Section 105(f) (I) A term in a license is unenforceable if it restricts the licensee from reverse engineering if that reverse engineering is done to achieve interoperability or to discover, prove, repair, or mitigate the effects of software errors or security-related risks.

(II) A term in a license is unenforceable if it restricts the licensee from publishing benchmark studies, product reviews or other descriptions of the product that will assist the reader to achieve interoperability or to discover, prove, repair, or mitigate the effects of software errors or security-related risks.

(III) A term in a mass-market license is unenforceable if it restricts the licensee from reverse engineering a computer program or it restricts the licensee from publishing the results of benchmark studies or other reviews of the licensed computer information.

Explanation of Amendment

Restrictions on reverse engineering, in negotiated, signed licensing agreements, are generally enforceable. However, the Digital Millennium Copyright Act permits reverse engineering that is done to achieve interoperability or to reduce security risks. The European Union also allows for reverse engineering to achieve interoperability or safety. Section 105(f)(I) makes it explicit that UCITA-based contracts also allow reverse engineering for these limited purposes. In particular, it has become clearer since September 11, 2001 that there is enormous public interest in improving the security of computer systems. Reverse engineering is an essential method for investigating security. Software vendors must not be allowed to bar their customers from using basic methods for protecting themselves and their systems.

Restrictions on reverse engineering in mass-market and consumer software have rarely or never been upheld. Restrictions on speech, that would bar disclosure defects or poor performance of mass-market software, are fundamentally anti-competitive. When the software is available to all, including the software vendor's competitors, a ban on speech does not protect the vendor's

secrets from discovery by competitors. It merely protects the vendor from publication of information that might cause customers to choose a competing product. Such a restriction has no place in a market economy.

Dealing With Known Defects

Identification of Section to be changed:

SECTION 403. IMPLIED WARRANTY: MERCHANTABILITY OF COMPUTER PROGRAM.

Text Deleted and Inserted: (Add the following)

Section 403(d) A licensor that is a merchant with respect to computer programs of the kind:

(1) Warrants to the licensee that, as of the time of transaction, the licensed computer program has no known defects other than those which have been disclosed to the licensee at or before the time of the transaction. A defect has been disclosed to the licensee if it was made available to the licensee at no cost, for example by publication on the licensor's website, and the licensee was advised how to access the licensor's disclosure of this defect, and the disclosure is reasonably calculated to be informative to the typical licensee of a product of this kind, including a description of the errors or problems that the licensee would be expected to encounter as a consequence of this defect and the steps recommended to avoid or mitigate losses caused by the defect.

(2) Will be liable for incidental and consequential losses of the licensee that were caused by a defect that was known to the licensor at time of transacting but were not disclosed to the licensee. However a mass-market license may limit the remedy to reimbursement of not more than \$500 for incidental losses and consequential losses that involved actual out-of-pocket expenses of the licensee. Unless the contract specifies otherwise, the licensor will not be liable for incidental and consequential losses of the licensee that were caused by a defect that was unknown to the licensor at the time of transacting or that was known and disclosed.

(3) May not disclaim this warranty in a mass-market license or a license for a computer program that will be embedded in goods and whose failure could cause a personal injury or damage to tangible property.

Explanation of Amendment

The issue of nondisclosure of known defects is one of the most controversial issues in the UCITA drafting process. It has been a lightning rod for opposition to UCITA, widely raised in the press and in discussions among working professionals.

UCITA allows the licensor broad power to set the terms of the contract, especially in a mass-market contract. There is widespread perception that it is fundamentally unfair to allow the vendor to sell products with known but undisclosed defects, under a non-negotiable contract that allows the vendor to disclaim warranties and exclude most or all remedies. There is widespread

belief among computing professionals who have studied UCITA that, within the legal context set by UCITA, a practice of nondisclosure of known defects will have a corrupting influence on the field and will set back the process of developing high quality software.

This simplest and most straightforward approach to this issue, often advocated, is to write an implied warranty of disclosure of known defects into every software license and to hold the licensor accountable for incidental and consequential losses caused by nondisclosed known defects. However, this subjects the licensor to unlimited risk. The approach taken in this amendment is more cautious. The warranty, in practice, will apply only to mass-market and life-critical embedded software, not to commercial software. The mass-market warranty, in practice, will limit remedies to a maximum of \$500 reimbursement for actual, out of pocket expenses (not lost profits) per customer. This is a strong, but limited, incentive to a manufacturer to disclose its defects. If this isn't a sufficient incentive, or if it does not result in the spread of good practices to commercial software, this section can be broadened later.

The warranty is also made nondisclaimable for embedded software that is safety-critical. Vendors of software that is to be embedded in goods are providing licenses that disclaim warranties and drastically limit remedies. Many vendors do not disclose known defects. Makers of goods that contain embedded software complain that they lack the market power needed to convince the large software vendors to disclose their defects. As a result, safety-critical devices are being built on top of a quality-unknown code base. People have died as a result of defects in safety-critical embedded software. As embedded software becomes even more pervasive in homes, offices, cars and motorcycles, more people will die as a result of defects in the embedded software.

One of the key standards for safety of embedded software is Underwriters Laboratory's STP 1998. This standard *recommends* that manufacturers of devices that incorporate embedded software from other vendors should obtain lists of known defects from the licensors of the software. Members of the drafting committee for the standard now known as STP 1998 advised me (Cem Kaner) that this was a recommendation, rather than a requirement, because of the limited market power of individual manufacturers. It would be unreasonable for an ANSI standard (such as STP 1998) to include a requirement that a reasonably diligent manufacturer could not meet. UCITA potentially exacerbates the problems of embedded software by granting licensors greater freedom. This amendment mitigates the problem by requiring licensors to disclose known defects to the device manufacturers, who will thereby be in a much better position to make their devices safe.

Dealing with Injuries

Identification of Section to be changed:

SECTION 109. CHOICE OF LAW.

Text Deleted and Inserted: (Add the following)

Section 109(e) If a computer program, including a program embedded in a device, is the cause of an injury to a person or of damage to tangible property, a term of the license should not be enforced if it (i) selects the law of a state that is neither the state in which the injured party or property owner lives or the state in which the injury or property damage

took place, or (ii) requires an injured person or owner of damaged property to travel to another state, or (iii) limits damages available to the injured person or property owner below those that would normally be available in a products liability suit.

5. Do you believe there are insurmountable obstacles to adopting UCITA in part or in whole? If so, what are these obstacles and why do you believe they cannot be overcome?

I think that the UCITA drafting committee is intransigent and, despite their lipservice, uninterested in efforts to achieve meaningful compromise. I favor the development of a uniform law for software, one that unites the treatment of finished products and services, but when the price of uniformity is so steep, disadvantaging software customers and small developers, threatening standard research and teaching practices, and supporting a level of sloppy workmanship that will eventually damage our position in the worldwide software market--this price is just too high.

The software industry has fared well under Article 2 for a generation (30 years of court cases consistently applying Article 2 to finished and nearly finished software products). It doesn't need the special treatment being afforded by UCITA. Until we can develop a balanced UCITA, we should stick with Article 2.

APPENDIX 1

UCITA and SMALL BUSINESS

Cem Kaner

December 18, 2000

UCITA has been repeatedly analyzed as legislation that is harmful to the interests of consumers, libraries, researchers, software engineers and large corporate users of software. However, the group that is probably the most seriously disadvantaged by UCITA is the small business customer.

UCITA contains several protections for consumers and "mass-market" customers. Larger customers (or transactions) are essentially unprotected--"freedom of contract" is the dominant contracting principle of UCITA. Non-mass-market customers are considered to be big enough to negotiate a fair deal for themselves and whatever they agree to, goes.

Unfortunately, small businesses have very little negotiating power in most software transactions, but they will never qualify as consumers under UCITA and they will often fail to qualify as

"mass market." Compared to current law (Uniform Commercial Code Article 2), small business customers gain nothing and lose much under UCITA.

Here are examples of the issues. For detailed analysis and extensive scholarly citation (325 footnotes), please see my paper in the *Journal of Computer & Information Law*, "Software Engineering and UCITA", posted at www.badsoftware.com/engr2000.htm.

1. UCITA Creates Harsh Rules for Business Customers

UCITA creates a new category of transaction, the "mass-market" transaction but small business transactions, including many purchases of off-the-shelf, packaged software with non-negotiable licenses, will often be excluded from the definition of mass-market:

- Business and professional customers are never "consumers" under UCITA even if the customer is a tiny one-person home-based business.
- Mass-market products must be "directed to the general public as a whole including consumers." A vertical package (such as software to run a dentist's office) would not qualify as mass-market.
- Mass-market software must be sold/licensed in a "retail transaction under terms and in a quantity consistent with an ordinary transaction in a retail market." A sale involving more than one copy of the product might not qualify. A small business that buys five copies of a word processor is probably outside of the scope and protections of mass-market transactions.
- If there is a volume discount, the sale does not qualify because the terms have to be "substantially the same" as a consumer (one-copy) sale.
- A site license disqualifies the sale from being "mass-market."
- Access contracts are also excluded. The dot-NET model of software licensing is an access contract model and these types of transactions are not mass-market.
- Software that is almost in any way customized will not be mass-market.

The non-mass-market customer loses several rights (compared to current law, Uniform Commercial Code Article 2). Here are just some of the problems that UCITA poses for non-mass-market customers:

- *UCITA does not deal reasonably with the problem of known defects.* Software publishers release products with many known defects, but they rarely disclose these at or before the time of sale. Even if they do disclose their known defects, the descriptions are rarely meaningful to ordinary customers.
- *UCITA does not require reasonable support for defects.* Customers can be required to pay for support, even for help with known defects. Granted, no company should have to provide free support forever. But is it fair to let the publisher start charging you for support calls from the first day of use, even for known bugs? Shouldn't you at least be entitled to know that *before* you pay for the product?
- *No perfect tender rule.* Under this rule (current law, Article 2), you have the right to a product that conforms to the contract. This does not entitle you to a perfect, defect-free product. It entitles you to what you ordered, at whatever level of reliability and functionality is specified in your contract. If the product you receive doesn't conform to

your order, you can send it back. Under UCITA, you are stuck with it unless the breach of contract is "material."

- *No right to see contract terms until after the sale.* The vendor is under no obligation to let you see the terms of the contract until after you buy the program, take it away, and start to install it on your machine.
- *No right of return.* If you don't have access to the contract terms until the time you start installing the software, what if you don't like the terms? The mass-market customer can reject the contract and return the product. You will often have no such right of return.
- *Minimal restriction on the terms themselves.* Critical terms need not be conspicuous. Standards of unconscionability and public policy can be contracted around.
- *Boilerplate terms in the license can override negotiated terms in the contract.* See the discussion of 209(a)(2) below.
- *The implied warranty of merchantability is essentially gone.* Under Article 2, you have a right to a product that is reasonably fit for ordinary use and that conforms to the products made on the packaging. This warranty can be disclaimed, but that disclaimer must be conspicuous. Many courts require the disclaimer to be visible before the sale. Federal and state rules limit the disclaimers on "consumer goods" (which businesses of any size may buy, as long as such goods are ordinarily used by consumers) even further. Under UCITA, a post-sale boilerplate disclaimer is fully enforceable against all customers. What businesses will choose not to disclaim implied warranties?
- *The rules governing express warranties are relaxed, making it easier to claim that no warranty was formed by demonstration.* Article 2 includes strict rules that products must conform to salespersons' demonstrations. Those rules are relaxed under UCITA.
- *The publisher is under no duty take reasonable measures in an attempt to release the product without viruses.* Several proposals were debated, but anything that required a software publisher to even run a single virus-checker against its product (if a checker were available for that product's platform) was defeated. So, the no-virus issue is an issue of merchantability--a product with a significant virus is unfit for ordinary use, but there will be, under UCITA, no warranty that products are merchantable and no available remedy beyond a refund for the product to cover damages caused by the virus.
- *Support promises and other material terms of a service contract can be changed without the customer's consent. More generally, boilerplate clauses that allow vendors to change terms are fully and broadly enforceable.* A three-year contract that grants the vendor the right to change its terms is fully enforceable against the customer even if the vendor makes unexpected and material changes. For example, suppose you sign a three-year contract for internet access and the terms are \$20 per month, under a contract that says the vendor can change its terms at any time. Such contracts are common, and these terms make it possible for the vendor to quickly change its anti-spamming policies or to improve its service in other ways. But under such a term, the vendor can switch its rates to \$200 per month, not what you expected when you signed the contract, and you would still be stuck with the contract for the rest of the three years. (This is UCITA section 304(b), which was singled out for harsh criticism by 24 attorneys-general in a letter to NCCUSL, the organization that drafted UCITA.)
- *The contract can be made non-cancelable, even in the event of a material breach.*

- *There is no right to a "minimum adequate remedy"* (as there is in UCC Article 2). If the vendor breaches the contract, you are entitled to whatever limited remedy the contract provides, and if that remedy fails, you might be entitled to nothing.
- *Waivers of liability.* The publisher can easily set up a waiver of liability (you “agree” to not sue the publisher for defects that you have complained about) by including the waiver in the click-wrapped “license” that comes with a bug-fix upgrade that the publisher sends you.
- *Publishers appear to be able to ban publication of benchmarks and negative reviews.* This will significantly limit your ability to do comparison shopping based on the reputation of a vendor. Proposals in UCITA drafting committee meetings to restrict this ability (which is within the UCITA definition of contractual use terms) were consistently rejected.
- *Transfer restriction.* Publishers can eliminate competition from the used software market by barring customers from transferring used copies of the software they buy. (That is, if you buy a copy of MS Word and use it, you can be barred from deleting it from your computer, packing that copy with its documentation back into its original packaging, and selling, lending, or donating it to someone else. This is not piracy, it is disposal of a used product.) This will limit your ability to use software assets as collateral or to recoup any of your costs by selling off software that you will no longer use. It will add significant costs to any merger or buyout of a company that relies on software to manage parts of its business.
- *Few limits on self-help.* Proposals to limit the vendor's power to remotely disable your software are typically applicable to the consumer or mass-market customer only.

2. Some Additional Details: UCITA's Mass-Market “Protections” are Generally Take-Aways from Non-Mass-Market Customers

UCITA's concept of mass-market transactions is sometimes described as an extension of consumer-like rights and protections to small business customers. This used to be true. Early drafts of UCITA extended many rights to mass-market customers. But those were whittled away over the years. What’s left is primarily a series of special rules that preserve for mass-market customers rights that currently (under Article 2) are available to all customers. Non-mass-market customers lose those rights. Here is a complete list, in the order that they appear in UCITA, of the mass-market “protections”:

- Under UCITA section 104 (1), under “an agreement that this [Act] governs a transaction” . . . “in a mass-market transaction, the agreement does not alter the applicability of a law applicable to a copy of information in printed form.” *Evidently, then, in a non-mass-market transaction, UCITA can be extended to cover printed information, such as books.* This will have significant impact on libraries but probably not much impact on small businesses.
- Under UCITA section 104(2), under “an agreement that this [Act] does not govern a transaction” . . . “(B) in a mass-market transaction, does not alter the applicability under [this Act] of the doctrine of unconscionability or fundamental public policy or the obligation of good faith.” *Evidently, then, in a non-mass-*

market transaction, UCITA allows the licensor to contract around unconscionability, public policy, and good faith.

- Under UCITA section 104 (3), “In a mass-market transaction, any term under this section which changes the extent to which this [Act] governs the transaction must be conspicuous.” *But terms can meet UCITA's definition of conspicuousness even though they are not available or visible to the customer until after the customer has paid for the product and started to use it.* This is not protection.
- Under UCITA section 109(a), a choice of law term “is not enforceable in a consumer contract to the extent it would vary a rule that may not be varied by agreement under the law of the jurisdiction whose law would apply under subsections (b) and (c) in the absence of the agreement.” *Note that there is no such protection for a mass-market customer who is not a consumer. For non-consumers, UCITA allows licensors to contract around laws that are mandatory in the customer's jurisdiction.*
- Under UCITA section 112(e)(3), a mass-market customer has a right to a refund if the seller does not make the terms available until after the sale and the customer does not agree to them. “However, a right to a return is not required if: . . . (B) the primary performance is other than delivery or acceptance of a copy, the agreement is not a mass-market transaction, and the parties at the time of contracting had reason to know that a record or term would be presented after performance, use, or access to the information began.” *Under these circumstances, the non-mass-market customer has no right to reject the terms and return the product.* Contrast this with Article 2 of the U.C.C. Under Article 2's section 2-207, (“[A]dditional terms are to be construed as proposals for addition to the contract. Between merchants such terms become part of the contract unless: (b) they materially alter it.”) the customer can reject material post-sale changes and keep the product anyway. And the leading case that enforced post-sale terms, *Hill v. Gateway 2000* (105 F.3d 1147, 7th Cir. 1997) specifically cited the right of return granted in the Gateway contract as the basis for enforceability of the contract. *The much-vaunted “right of return” is not only not new. It is narrowed so that many businesses will no longer will be able to take advantage of it.*
- Under UCITA section 112(f), the licensor can eliminate the right of return for repeat customers, whether they are consumer, mass-market, or other, by setting out licensor immunizing standards for future transactions between the customer and vendor. (“The effect of provisions of this section may be modified by an agreement setting out standards applicable to future transactions between the parties.”) Section 113(a)(3) might appear to slight limit this. Under section 113, the requirements for manifesting assent and opportunity for review in section 112 may not be varied by agreement. However, 112(a)(3)(C) takes this back, saying they may not be varied *except to the extent provided in section 112*. Thus, despite section 113, because of section 112(f), the shrink-wrapped contract that comes with that transaction can wipe out your rights as to all future transactions.
- Under UCITA section 113(a) (1) “Obligations of good faith, diligence, reasonableness, and care imposed by this [Act] may not be disclaimed by agreement, but the parties by agreement may determine the standards by which

the performance of the obligation is to be measured if the standards are not manifestly unreasonable.” *This applies to all customers, including mass-market customers. In a post-sale, shrink-wrapped contract, what standards do you think vendors will write for themselves? “Manifestly unreasonable” is not much in the way of protection against abuse.*

- Under UCITA section 209(a) a term in a mass-market is void if it is unconscionable, preempted by federal law or a court rules that it violates a fundamental public policy. As with UCITA section 104(2)’s explicit reference to mass-market terms, *UCITA apparently allows parties in non-mass-market contracts to include terms that are unconscionable, preempted by federal law, or in violation of public policy.* Of course a court might strike such terms on other grounds than UCITA, but the UCITA-based protections (such as they are) against these abuses are assured only to the mass-market customer.
- Under UCITA section 209(a)(2), a term in a shrink-wrapped form (mass-market) contract is excluded from the contract if it “conflicts with a term to which the parties to the license have expressly agreed.” To put this in context, suppose that a customer specifically negotiates a contract with a software publisher. On installing the software, he encounters a click-wrap license. He must click “OK” to install the software. He does. Under current law, the negotiated agreement prevails over the click-wrap. (*Morgan Laboratories v. Micro Data Base Systems, Inc.*, 41 U.S.P.Q.2d 1850 (N.D. Ca. 1997, Chief Judge Thelton Henderson). *UCITA says that the negotiated agreement prevails if the contract is mass-market but under UCITA section 208, the standard form contract’s non-negotiated term will prevail, despite the contrary negotiated term, in non-mass-market cases.* (This is not a drafting error, we discussed this issue explicitly in UCITA drafting meetings.) There is an interesting trap here for small businesses who try to negotiate terms of a mass-market software contract. The problem is that mass-market contracts, by UCITA’s definition, are not negotiated contracts. So if we have a contract with negotiated terms, it is arguably not a mass-market contract (and thus not subject to the UCITA section 209(a)(2) protection) and therefore, if the negotiated term conflicts with anything in the shrink-wrapped license, the negotiated term goes away.
- UCITA section 209(b) spells out the mass-market customer’s right of return. (The non-mass-market customer has no right of return.) If the customer cannot review the terms of the contract before paying, she can reject the terms and return the product, collecting the out of pocket costs (but not the value of her time) of returning the product and restoring her system to its previous state. *However, this right of return expires as soon as the customer clicks OK to continue installing the software after the license is presented.* Imagine that the customer clicks OK to continue, but that a defect in the software installation program makes it impossible to complete the loading of the product. Even though the customer was never able to use the product, her right of return is gone. The perfect tender rule (available only to mass-market customers) might still give the customer an immediate right to return the software, but the contract’s exclusion of incidental and consequential damages (including exclusion of reimbursement for the return

postage or refund of any charges for technical support calls to the vendor) will govern.

- Under UCITA section 211, if the vendor does post its license on its web site, a customer who acquires software or information from that site has no right of return.
- Under UCITA section 304(b), the vendor can unilaterally change the terms of the contract, as long as the vendor grants itself this power in the original shrink-wrapped contract. The *mass-market* issue here comes up in UCITA section 304(b) (the mass-market customer may terminate the contract as to future performance if the change alters a material term) and 304(c) (any standards for notifying the customer of changes in terms that the vendor writes into the shrink-wrapped contract will be enforced unless they are manifestly unreasonable). This is bad enough, for the mass-market customer. But for non-mass-market contracts (such as access contracts), the customer can not even terminate the contract if the new terms are material and unacceptable.
- Under UCITA section 503(4), a “term that prohibits transfer of a contractual interest under a mass-market license by the licensee must be conspicuous.” For all other licenses, a no-transfer clause need not even be conspicuous.
- Under UCITA section 704(b), “[i]n a mass-market transaction that calls for only a single tender of a copy, a licensee may refuse the tender if the tender does not conform to the contract.” This is the perfect tender rule, which all buyers of goods enjoy under Article 2. The rule is still in force for mass-market customers but is lost to the rest.

These changes are a problem for large customers because they change the baseline, the starting point for negotiations. This is why the Society for Information Management (which represents large software and hardware customers) oppose UCITA. But the people who are especially hurt by these changes are small businesses because they lack the bargaining power to get back the rights they are losing under UCITA.

As badly served as they are under UCITA, consumers can take one consolation. Small business customers are treated much worse.

Appendix 2

About Cem Kaner

I am Professor of Computer Sciences at Florida Institute of Technology, in Melbourne, Florida. I teach courses in software measurement, empirical research methods, software testing, and computer law and ethics. I do research in software quality control and am building the world's first undergraduate degree program focused around software quality control as a specialty within software engineering. I hold substantial research grants from the National Science Foundation and Rational Software, which support my research into the analysis of skills involved in common design, programming, and testing tasks. From here, we can create the next generation of self-paced training courses and training books in software engineering.

Prior to joining Florida Tech in August, 2000, I headed a software development consulting firm, *KANER.COM* and worked for/with software publishing firms in Silicon Valley for 17 years

(starting in 1983). I am the author of the best-selling book (in terms of total lifetime sales) on software testing, *Testing Computer Software* (2nd ed., with Jack Falk & Hung Nguyen), and of a new book, *Lessons Learned in Software Testing*. Along with having programming, software development management, and software quality management experience, I hold a Ph.D. in Experimental Psychology.

I am also an attorney (California Bar), and a member of the American Law Institute. Apart from *pro bono* legislative commentary, however, my legal practice is inactive until I find time to take the Florida Bar Exam. (That won't happen until we finish establishing my software testing research lab at Florida Tech). In California, I was a solo practitioner, doing business as the Law Office of Cem Kaner. My primary clients were small businesses, primarily small software development firms and individual authors, software developers, and consultants.

I was raised in a small business environment. My parents were retailers in Canada. They founded Kaners Ltd., 1+1 Ltd., La Vie en Rose, and 1+1 Petites, all men's or women's clothing. The business grew from one store, when I was an infant, to a set of nationwide (Canadian) chains. Additionally, they brought Caswell-Massey into Canada, opening its store in Toronto and they introduced a chain featuring Alfred Sung's designs to the US retail market, opening the first SungSport store in Georgetown. My parents' intention (and my expectation) was that I would take over these businesses. Many of my earliest memories are in the stores, and I worked in them for many years before choosing instead to follow my passion for research and development.

I attended all of the Article 2B (UCITA) drafting committee meetings from February 1996 (the 2nd meeting) until the bill passed NCCUSL in July, 1999, actively commenting upon and eventually opposing the bill. My objections are collected in a book that I wrote during the UCITA process, *Bad Software* and in the associated website, www.badsoftware.com.