

UNIFORM COMMERCIAL CODE ARTICLE 2B: A NEW LAW OF SOFTWARE QUALITY

Last February, I went to Denver to observe a committee meeting sponsored by the *National Conference of Commissioners on Uniform State Laws (NCCUSL)* and the *American Law Institute (ALI)*. The committee is drafting a new Article 2B to add to the Uniform Commercial Code (*UCC*). After more revisions, Article 2B will probably be presented to the States in late 1997. When it is adopted by the States, as most revisions to the UCC are, it will be the dominant source of American law that governs software quality. I am concerned that some of this law will lead to lower quality, less customer protection, and tougher tasks for software quality advocates.

There were about thirty-five lawyers in the room. Twelve or thirteen were Commissioners, who are usually appointed to NCCUSL by their States' governors. Some Commissioners are law professors; others are distinguished lawyers, legislators, or judges. A few others were representing the ALI, a scholarly organization that publishes definitive analytical summaries (*Restatements*) of American laws. The other lawyers represented the software and information industries. Apple, IBM, Microsoft, and West Publishing¹ were there. So were the Software Publishers' Association, the Business Software Alliance, the Information Industry Association, the Software Industry Coalition, and a few other publishers' representatives. No one was there from the American Society for Quality Control, the Association for Computing Machinery, the Association of Shareware Professionals, the Association of Support Professionals, the Software Support Professionals Association, the Human Factors and Ergonomics Society, the Institute for Electrical and Electronic Engineers, Consumers Union, the American Council on Consumer Interests, the U.S. Public Interest Research Group, the Better Business Bureau, the Society for Technical Communication, the National Writers Union, or any other organization that represents customers, consumers, programmers, testers, writers, or other product development staff.

On the plane to Denver, I was delighted that they would allow me into the room. At the meeting, they not only welcomed me – they sat me at the table and told me that if I had something worth saying, I should speak my piece. In this way and several others, I have been repeatedly impressed by the degree to which the NCCUSL/ALI drafting and review process reflect a commitment to the highest American democratic ideals.

I did speak a few times. Sometimes I felt completely alone in my advocacy for customers. And through most of the session, no voice represented writers² or software developers (independent small development groups or in-house staff).

¹ West Publishing holds about the same position in the printed and on-line legal publishing industry as Microsoft holds in the software industry.

² Article 2B also includes provisions relating to the publishing of books and articles.

RELEVANCE TO SOFTWARE QUALITY?

Quality cost analysis³ is a key tool in a quality improvement effort. A company spends money on:

- **prevention:** of problems, for example by training programmers to use defensive programming techniques;
- **appraisal:** such as testing or code inspection;
- **internal failure costs:** such as cost of bug fixes or lost time due to bugs found before the product ships;
- **external failure costs:** such as tech support costs, lost customer goodwill, and warranty costs.

Quality engineers work to minimize the sum of quality-related costs. It is cheaper to prevent, search for, and fix problems than to deal with the consequences of shipping a defective product to customers.

Article 2B contains some useful customer protections but it changes the balance of rights that the original UCC struck between customers and sellers. In my view, it will substantially reduce a seller's legal and competitive exposure for shipping bad software. Therefore the balance of the quality-cost equation changes. Therefore, companies should, and in many cases will, spend less than they spend today to prevent, find, and fix bugs because it will now cost them less when they ship defective products to customers.

Let me speak my mind a little more bluntly here:

As a reader of this magazine, you have probably fought and lost tough battles to get significant bugs fixed. Well, the push now is to make sure that your customers can't do much about it. With your interest in software quality, I think you should find this prospect alarming.

Whether or not you agree with me, it's important that you understand that the ground rules are about to change. You should think carefully about whether you want to influence that change. You might want to do this directly, by reading the drafts yourself and commenting on them, or indirectly via your professional society (if you can motivate it to get involved) or by someone else who you trust to speak for your interests.

A LITTLE MORE ABOUT THE UCC

The Uniform Commercial Code is the dominant source of American commercial law. All 50 States have enacted all or most of the UCC. It is written and maintained under the auspices of NCCUSL and ALI, rather than by a government body. The private, non-partisan drafting and review process for updating or rewriting a Uniform Law (such as the UCC) stretches over several years. Hearings are open. Competing viewpoints can be heard and considered calmly.

Article 2A (Leases) and proposed Article 2B (Licenses) are outgrowths of Article 2 (Sales). Article 2 is also under revision. Drafts of the proposed revisions to Article 2, with authors' commentary, are on the Web, at www.kentlaw.edu/ulc/uniform/uccart2. If this address changes, check www.kentlaw.edu/ulc or look on www.kentlaw.edu for a pointer to Uniform Laws.

³ I described quality cost analysis for software in Kaner, C. (1996) "Quality Cost Analysis: Benefits and Risks," *Software QA*, Vol. 3, No. 1, p. 23. For more general descriptions, see Campanella, J. (Ed.) (1990, 2nd Ed.) *Principles of Quality Costs*, ASQC Quality Press; Gryna, F.M. (1988) "Quality Costs" in Juran, J.M. & Gryna, F.M. (1988, 4th Ed.), *Juran's Quality Control Handbook*, McGraw-Hill.

The Reporter of the Article 2B drafting committee, and thus the primary author of Article 2B, is Professor Raymond T. Nimmer, of the University of Houston Law Center. He is also the author of *The Law of Computer Technology: Rights, Licenses, Liabilities*,⁴ which is the leading treatise on computer-related law. The Article 2B drafts reflect Nimmer's encyclopedic knowledge of the field and his clear writing style.

The Uniform Commercial Code Article 2B Revision Home Page is at the University of Houston, at www.law.uh.edu/ucc2b. Along with the most recent two drafts, the site includes some useful commentary. And you can send comments on the proposed revisions to Professor Nimmer from a mail link at that page. To see previous drafts of Article 2B, go to www.kentlaw.edu/uniform/uccart2.

The Article 2B proposal is just that, at this point – a proposal. The current draft has not been reviewed or approved by NCCUSL or ALI. It may be significantly revised before ALI and NCCUSL accept it and forward it to the State legislatures for adoption (perhaps in August 1997).

GOOD IDEAS IN ARTICLE 2B

The Article deals with several difficult technical issues. Here are some of the things it does well:

- **Electronic Commercial Transactions:** This includes sales made over the Net. For example, the Article sets out rules for contracts for online services, for electronic ordering, delivery, and receipt of "information," for authentication of electronic orders, and for transactions handled by electronic agents. These don't dictate the technological details (nor should they) but they do lay out the principles for deciding that a legally valid contract has been made.
- **A Unified Framework for Licensing of Information:** Initially, the American Bar Association called for revisions of the UCC to deal directly with licensing of computer software.⁵ The scope grew to include the licensing of digital information, such as multimedia content. But where do you draw the line between digitally stored and non-digitally stored information? Should a movie on a CD-ROM be subject to different rules than the same movie on VCR tape? What if the movie is stored on a laser disk (digital, but not for use by a computer)? After several discussions, the scope of proposed Article 2B was expanded to include the licensing of all information, no matter how it is stored. It now "includes traditional print materials, including books and newspapers."⁶
- **The Mass-Market License.** The *license* is the agreement that gives you the right to use the software (or other information). A *mass-market license* is a standard-form, non-negotiable, license.⁷ For example, consider a mass-marketed word processing program. A company that sold (licenses for) a million copies of a \$100 program could not afford to negotiate a separate contract for each. The price would have to rise to reflect the cost of all the bargaining. Instead, companies use standard-form contracts. The UCC⁸ provides some protections from unfairly one-sided terms in the forms. Additional protections come from consumer-protection laws passed by the Federal and State Governments. Consumer protection laws are confusing because the definition of "consumer" varies. A self-employed professional writer could probably treat Brand X Word Processor as

⁴ Revised 2nd Ed., 1994, Warren, Gorham & Lamont.

⁵ See, for example, Boss, A.H., Weinberg, H.R. & Woodward, W.J. (1989) "Scope of the Uniform Commercial Code: Advances in Technology and Survey of Computer Contracting Cases," *The Business Lawyer*, Vol. 44, p. 1671.

⁶ *February 1, 1996 Draft of Uniform Commercial Code Revised Article 2B. Licenses*, Section 2B-103, *Reporter's Note 3*.

⁷ More precise definitions of *licenses* and *mass-market licenses* are in Section 2B-102 of the February 1, 1996 Draft.

⁸ References to the UCC are to the 1994 Official Text of the Uniform Commercial Code.

consumer goods under the Federal Magnuson-Moss Warranty Improvement Act⁹ but not under State law definitions that restrict “consumer goods” to those bought for personal, family or household (but not any form of business) use. The mass-market license concept skips this confusion by treating everyone who buys a product that has a mass-market license in the same way.

- **Limitations on Forum Selection Clauses:** This dictates where you can bring a lawsuit. The precedent-setting case of *Carnival Cruise Lines v. Shute* (1991)¹⁰ illustrates the hardship that forum selection clauses can work on consumers. Eulala Shute lived in the State of Washington. In Washington, she bought tickets for a cruise from Los Angeles, California to Puerto Vallarta, Mexico. She was injured on the ship. On the back of the ticket, in fine print, was a forum selection clause that required Shute to file any lawsuit in the State of Florida. This is convenient for Carnival Cruise Lines, which is based in Florida, but Shute would have to fly herself and all her witnesses from the West Coast to Florida. The United States Court of Appeals (Ninth Circuit) noted that this case “would be so gravely difficult and inconvenient that the plaintiffs would for all practical purposes be deprived of their day in court.” It then ruled that Shute could sue in Washington. But the United States Supreme Court held that forum selection clauses are enforceable, and ruled in favor of Carnival Cruise Lines. A clause like the one in Mrs. Shute’s ticket would not be enforceable in a mass-market license under Article 2B’s Section 2B-108(b) (Contractual Choice of Forum). This is a valuable protection for consumers and small businesses.

PROBLEMS FOR THE MASS-MARKET CUSTOMER

Even though Article 2B contains some excellent material, it deprives customers of significant protections that the law gives them today. I’ll look first at the current UCC then at Article 2B.¹¹

Today’s Rules under Article 2 of the UCC

Article 2 applies to sales of goods. American courts have consistently applied Article 2 to pre-packaged, mass-market software.

1. **Express Warranty:** By law, in every sale of goods, a seller makes an express warranty¹² if the seller makes a statement of fact about the product, and that statement is part of the “basis of the bargain.”¹³ The goods must conform to the warranty or the seller has breached the contract. The seller cannot disclaim the warranty.¹⁴

⁹ United States Code, Title 15, Section 2301. For the meaning of “consumer products” in this Act, see Volume 16 of the Code of Federal Regulations, Section 700.1(a).

¹⁰ *United States Reports*, Vol. 499, p. 585 (United States Supreme Court). Some of the background facts mentioned here are taken from the 9th Circuit Court of Appeal’s overruled opinion, *Shute v. Carnival Cruise Lines* (1990) *Federal Reporter, Second Series*, Vol. 897, p. 377.

¹¹ The UCC is probably readily available at your local library. Or, if you have a copy of Kaner, C., Falk, J. & Nguyen, H.Q. (1993, 2nd Ed.) *Testing Computer Software*, Van Nostrand Reinhold, you can find additional detail in Chapter 14, pp. 305-317. For additional detail on the Article 2B provisions, read the text, and the Reporter’s excellent notes, on his web page, <http://www.law.uh.edu/ucc2b>.

¹² UCC Section 2-313. Express warranties were discussed in Volume 2, No. 3 of *Software QA Quarterly*, in my article “Liability for Defective Documentation,” p. 8.

¹³ “Basis of the bargain” is defined differently in different States. In some States, if the Seller ever said it (e.g. in the on-line help), it’s a warranty. In others, you have to prove that the customer saw the statement and relied on it as part of her purchasing decision. White, J.J. & Summers, R.S. (1995, 4th Ed.) *Uniform Commercial Code*, West Publishing, is a widely respected treatise on the UCC. Read Volume 1, Section 9-5. I also recommend Clark, B. & Smith, C. (1984, supplemented 1994) *The Law of Product Warranties*, Warren, Gorham & Lamont section 4.03[3], and Rosmarin, Y.W. & Sheldon, J. (1989, 2nd Ed., supplemented 1995) *Sales of Goods and Services*, National Consumer Law Center.

¹⁴ UCC Section 2-316(1).

2. **Implied Warranty:** By law, in (almost) every sale of goods there is an implied warranty of merchantability.¹⁵ This modest warranty says that the seller promises that the product is fit for the ordinary purposes for which such goods are used and that it conforms to any promises made on the box.
3. **Conspicuous Disclaimer:** A seller *can* disclaim implied warranties, by saying, *conspicuously*, that the goods are sold AS IS, without implied warranties. The UCC defines “conspicuous” as something that it is written or printed in such a way that a reasonable person would have noticed it.¹⁶ Unless you have X-ray eyes, a warranty disclaimer that is shrink-wrapped inside a box cannot be conspicuous because you won’t notice it before the sale is completed. Therefore, courts throw out these disclaimers in software cases¹⁷ and they regularly throw them out in other industries too.¹⁸

Courts treat see-it-after-the-sale disclaimers as proposals to change the sales contract. The product comes with the warranty of merchantability, by law, unless the seller gives the customer fair notice that there is no such warranty with this product. If the seller says *later* that there is no warranty, the seller is taking away something that came with the product when the customer bought it. This is like borrowing money from a bank at 10% interest and then sending a note with your first payment that says “LOAN AGREEMENT MODIFICATION: Lender and Borrower Hereby and Herewith Agree that the Interest on Loan 4725 is Heretofore Reduced to 3% (three percent) *per annum*, effective immediately. Lender signifies its acceptance of these terms by cashing the enclosed check.” It looks like impressive legalese, but do you think you’d get away with this?

Therefore, if a software publisher wants to disclaim the implied warranty of merchantability, it must say so on the box, just like the big sign you see on the used car, “AS IS – NO WARRANTY.” Software companies disclaim the implied warranty of merchantability so routinely that many of us have grown used to the disclaimer. But think about it for a second. The company is saying that it won’t even promise that the word processor it’s selling is fit to do the ordinary tasks of word processing or that the program works as promised on the box. Wow.

In terms of a traditional consumer protection analysis, this requirement of conspicuous notice is the right result.¹⁹ The company is still allowed to set the terms under which it will sell the product, but the customer is fully informed of the terms at the time of the purchase. If one of the terms looks ridiculous, the customer can look at the competitors’ products while she is still in the store and buy something else that has better terms. Putting the terms in plain view encourages competition and responsibility.

Unfortunately, it is hard, or at least cumbersome, to make the disclaimer conspicuous in a telephone order or an electronic order. Therefore, there is a lot of pressure to drop the conspicuousness requirement. (Of course, if the software seller was willing to

¹⁵ UCC Section 2-314.

¹⁶ UCC Section 1-210(10).

¹⁷ *Step-Saver Data Systems, Inc. v. Wyse Technology and The Software Link, Inc.* (1991) *Federal Reporter, Second Series*, Vol. 939, p. 91 (United States Court of Appeals for the Third Circuit) is an example. Nimmer, R., (1994, Revised 2nd Ed.) *The Law of Computer Technology*, Warren, Gorham, & Lamont describes additional software cases. Lemley, M. (1995) “Intellectual Property and Shrink-wrap Licenses,” *Southern California Law Review*, Vol. 68, p. 1239, lists thirty-one countries that severely restrict shrink-wrapped terms, and only five that freely enforce them.

¹⁸ Several attorneys seem to feel that the software industry has been singled out for mistreatment by courts that throw out hidden-in-the-box disclaimers. But I haven’t seen any industry that courts allow to get away with this, and I’ve been looking pretty hard. For non-software cases, look in the books cited in footnote 13, especially Clark & Smith.

¹⁹ Turner, J. (1995) “The Consumer Interest in the 1990s and Beyond,” *The Journal of Consumer Affairs*, Vol. 29, p. 310 is a useful discussion of the history of consumer protection, and of the critical goal of informed choice.

promise that the program wasn't unfit to do its ordinary tasks, then it wouldn't have to disclaim anything and it wouldn't matter that it can be cumbersome to sell no-warranty used cars on the phone or by e-mail.)

4. **Compensatory Remedies:** If Joe breaches a contract with Jane, the general principle of contract damages is that Joe should pay Jane enough money that she is either as well off as she would have been if Joe hadn't breached the contract, or as she would have been if she had never met Joe. Sometimes this will be pretty hard on Joe, but a contract is a contract and Joe should know the rules when he decides to sign, and when he decides to breach, the contract.

This is a very traditional rule. It's not one of those crazy-new-court-case-makes-ambulance-chasers-rich rules. It's the lawyer's translation of what you mean when you say to someone, "Hey, a deal's a deal."

Article 2²⁰ and Article 2B recognize this rule. As Article 2B puts it,²¹ "Remedies must be liberally administered with the purpose of placing the aggrieved party in as good a position as if the other party had fully performed."

Speaking very simplistically,²² there are three kinds of damages (money). If Seller gives Customer a defective product, the damages look like this:

Benefit of the Bargain: The seller must give the customer a refund or pay the customer the difference between the purchase price and the actual value of the defective product.²³

Incidental Damages: The seller must reimburse the customer for the handling and processing costs of dealing with the seller's breach of contract. These include repaying the customer for the cost of her phone calls to the seller to report the problem, the customer's cost of mailing the product back to the seller, and the customer's cost of shopping for a new program.²⁴

Consequential Damages: The seller reimburses the customer for additional losses that were caused by the software's bugs, such as the cost of reloading data onto an erased hard disk or lost profits or treatment expenses for a personal injury. Rules that protect sellers from unfairness prevent customers from recovering all of their consequential losses²⁵

The UCC does allow a seller and a customer to agree in their contract to remedy limitations, such as agreeing that the seller will never give the customer more than a refund.²⁶ However, some States make it much harder to use this limitation than other States. For example, some States require that the remedy limitation be conspicuous before or at the time of the sale.²⁷

²⁰ UCC Section 1-106.

²¹ Article 2B, Section 2B-701(a).

²² The UCC and its comments provide significant discussion from Sections 2-701 through 2-725. For a more thorough discussion, Dobbs, D.B., (1993, 2nd Ed.) *Dobbs' Law of Remedies: Damages, Equity, Restitution*, West Publishing, is the leading treatise. Volume 3, pages 1-577, discusses contract-related remedies.

²³ UCC Section 2-714.

²⁴ UCC Section 2-715

²⁵ For example, in the famous case of *Hadley v. Baxendale* (1854) *English Reports*, p. 145, the Court ruled that the plaintiff cannot collect reimbursement for consequences that the defendant had no reason to foresee as likely consequences of breaching the contract. Note the year, 1854 – consequential damages have been paid by contract-breakers for a long, long time, within English and American Common Law. In eliminating consequential damages, Article 2B is breaking with a long, continuous tradition.

²⁶ UCC 2-719.

²⁷ See the books cited in Footnote 13. Look especially at Clark & Smith, Section 8.04[1][d] and at Rosmarin & Sheldon, Chapter 32.

The Proposed Rules Under Article 2B

Proposed Article 2B makes contract-breaking more seller-friendly:

1. **Substantial Performance – Some Bugs are OK.** Article 2B replaces the UCC “perfect tender rule” with the ideas of *substantial performance* and *material breach*.²⁸ The seller isn’t required to deliver a perfect program, just one that “substantially” does what was promised.

Section 2B-620 requires the seller to cure a “nonconformity” that is not “material” (very serious) by fixing it. The seller is required to “promptly and in good faith make an effort to cure” unless “the cost of this effort would be disproportionate to the effect of the nonconformity on the” customer. *However, this effort to cure is only required in a case that is “other than a mass market license.”*

Under Section 2B-601, a nonmaterial breach does not entitle the customer to cancel the contract and get a refund, but it does “entitle the aggrieved party to the appropriate remedies described in this article” and 2B-702 entitles the customer to damages that include incidentals and consequential, *but* Section 2B-706 allows the seller to exclude (not pay) consequential and incidental damages.

For a non-material breach, I am not sure what remedies a mass-market customer is entitled to. I think the seller isn’t required to fix the bugs or to reimburse the customer for incidental expenses and consequential losses caused by the bugs or to give the customer a refund for the product. I *think* the seller is allowed to give the customer a partial refund that reflects the reduction in value of the product caused by the bugs. (So now we can have fun arguing about how much that partial refund should be, if there should be a partial refund at all.)

This includes Express Warranties: As far as I can tell, a non-material breach of an express warranty is a non-material breach. As long as the box just lies a little bit, it’s not a problem. So what happens if the box says “Works with all HP LaserJets” but the program works poorly with your HP printer? You are dissatisfied with the output. Is that a material breach? Can you get a refund? A bug fix? Or are you told, “Hey, all the other features work; here’s a 5% refund!”

2. **Implied Warranties are Still There, But:** Implied warranties are so easy to disclaim that, for most companies, implied warranties will only be applicable if a different consumer protection law makes them non-disclaimable for a limited group of customers (“consumers”).
3. **Conspicuous Disclaimers:** Conspicuousness is no longer the important issue. The critical issue now is whether the customer has *manifested assent* to a term of the contract. Here’s how this works – you go to the store, pay for a program, take it home, start installing it, and it flashes a “License Agreement” screen at you. The screen says that there are no warranties, express or implied, and that incidental and consequential damages are excluded. It gives you a choice – click on “I accept these terms” to continue the installation or “I want a refund” to stop installation. If you click on the refund, take the product back to the store and get a full refund. This choice is sufficient to render these terms “conspicuous” and enforceable against you.²⁹

This is conspicuous in the sense that you know the terms, and you even said that you agreed to them, but it is a far cry from the traditional rules of Article 2. This is

²⁸ Article 2B, Sections 2B-102, 2B-110, 2B-601. Think of a “material breach” as one involving a significant failure of the product, that renders the product unfit for use. The current draft’s definition is, to my eyes, unclear but I think it will be revised.

²⁹ Article 2B, Sections 2B-115, 2B-116, and 2B-102.

intentional. Reporter's Note 10 to Section 2B-308 (Mass Market Licenses) says "This section reverses *Wyse Technology v. Step-Saver*."³⁰

In practice, how many people will take this program back after they've started installing it? And what happened to setting up an informed choice so that customers could compare packages in the store, to see which have warranties and which don't?

I believe that Article 2B has replaced a strong consumer protection with a meaningless formality.

4. **Remedies? What Remedies?** Article 2B allows the seller to exclude incidental damages and consequential damages. The exclusions don't have to be conspicuous. Watch how this plays out:

Incidental Damages: Software support is increasingly being done on a fee-basis. You pay for a support contract, or you pay for the call or for the support-minutes you use. At the OpCon West/96 Customer Service & Support Conference,³¹ David Aune explained how Claris sells *The Claris Card*, a debit card for support services. In essence, the customer pays in advance for support-minutes, which are used when the customer is talking to Claris' support staff. I don't know Claris' support policy, but other companies that have you call Support on 900-number phone lines will bill you for the time you spend on the call, even if you called to complain about a known bug.

Not only don't you get reimbursed for incidental damages, but if you're unlucky, the cost of convincing the Customer Service Rep that you have a legitimate problem and should be sent the next bug-fix update of the software can be higher than the original price of the software. And the seller, who made the bug (a non-material breach), not only doesn't pay you damages – it makes a profit on the call.

Consequential Damages: As written in the February 1, 1996 Draft, there are consequential damages unless they are excluded. But the Committee voted, in Denver, to drop consequential damages. They would not be available to customers unless specifically contracted for.

One effect of eliminating consequential damages is on negotiations in non-mass-market cases. When the customer is entitled to consequential damages unless he contracts them away, he can ask for something in return for his agreement to sign away consequentials. But if they're gone already, the customer has lost a bargaining chip.

A second effect of eliminating consequential damages is that it *unquestionably* eliminates the customer's ability to collect them. Exclusion clauses are subject to some uncertainty, especially in the mass-market case. A product manager who is thinking about prematurely shipping a buggy program might think twice about the potential costs, if customers *might* be able to collect consequential damages. The spreadsheet will look different if there is *no possibility* of a judge awarding consequentials, no matter how outrageous the bugs,. By eliminating consequentials, we make it safer (for the seller, over the short term) to ship a seriously defective product.

Should We Allow Exclusion? Software companies are legitimately concerned about consequential damages. A company that sold 100,000 copies of a program with a bad bug might go bankrupt paying for its consequences.

Understand, though, that if the software company doesn't pay for these damages, the customer is stuck with them. These losses can be quite serious – customers can lose

³⁰ See Note 17 for notes on the Step-Saver case.

³¹ March 18-19, 1996. Aune's talk is summarized in "Debit Cards: A New Way to Sell Fee-Based Support," *The ASP* (Association of Support Professionals) *Gazette*, March-April 1996, p. 4.

their jobs, lose their data, lose sales, etc. A refund for the program doesn't begin to compensate the customer fairly for these losses.

Software companies beg for relief from consequential damages because their bugs can do so much harm that paying everyone back would bankrupt them. OK, suppose we give them relief. That doesn't mean that we have to give them a free ride.

- ***Don't allow exclusion of incidental damages:*** Unlike consequential damages, these amounts are quite limited. Their amount is directly related to the degree to which the company gives the customer a hard time about returning the software. The damages are low if the company quickly agrees to a refund, but much higher if the customer has to call back many times (especially on a pay-for-support-time basis, to the profit of the company). I see no justification for sticking the buyer with these expenses.
- ***Let the seller limit consequential damages to three times the price of the product.*** At least this repays the customer for *some* of her losses, and provides an added incentive for the seller to test and fix its software before shipping it. The seller's risk is still limited, but not just to a refund of money that the seller should never have collected in the first place.
- ***Alternatively, let the seller exclude consequential damages unless its release of the software was outrageous.*** If the seller knew about the bug and released the program anyway, why should it have any relief from the consequences of the known bug? And if the seller simply didn't bother to test the program, why should its customers have to pay for the inevitable failures?

IN CLOSING

I am deeply concerned about the effect of these changes on the day-to-day interactions in software development projects. How many times do you want to be told that all your company is *required* to give the customer is "substantial performance"? And when you talk about quality-related costs, how often do you want to be reminded that the worst legal costs of shipping defective software will be a few refunds?

Making it easier to pass off garbage on customers is no good for anyone. Over the short term, it might seem that all software development companies will benefit if we adopt laws that shield sellers from the consequences of their actions. But over the long term, stripping away most of the rights of mass-market buyers will make them justifiably angry and mistrustful of software development companies. After a few years, we'll see a backlash from it, probably one that leads to a flood of poorly written but immensely popular consumer protection regulations.

We have about 18 months of relatively calm deliberation and negotiation before this Article goes into the partisan legislative process. During that time, you can influence the law that is put before the States' legislators. You can influence the law on your own, or you can encourage the professional societies that you're a member of to take an interest in this law and to exert their influence on the process. As testers, we so often face difficult problems after the toughest decisions have been made – this time, on an issue this important, give your input before the fact instead of after it.

