Canned Software Warranties: Concerns on Both Sides of the Transaction

Peter Ackerman

Follow this and additional works at: http://digitalcommons.law.scu.edu/chtlj

Part of the Law Commons

Recommended Citation
Peter Ackerman, Canned Software Warranties: Concerns on Both Sides of the Transaction, 5 SANTA CLARA HIGH TECH. L.J. 163 (1989). Available at: http://digitalcommons.law.scu.edu/chtlj/vol5/iss1/9
"CANNED" SOFTWARE WARRANTIES: CONCERNS ON BOTH SIDES OF THE TRANSACTION

Peter Ackerman†

I. INTRODUCTION

The scope of this comment is relatively narrow. It canvasses some of the general concerns of buyers and sellers of mass-marketed software, explores the conditions under which express warranties might be created in this area, and inquires into the efficacy of consequential damage limitations upon failure of a manufacturer to uphold its end of a warranty agreement. In simpler terms, purchasers of microcomputer software products are beginning to scrutinize more carefully the representations made about software capabilities. The intensely competitive nature of the software industry has led to bold assertions about what these computer programs are able to accomplish, and thus it is important to have some idea as to whether these assertions amount to express warranties. It is equally important, in light of the tremendous economic losses that are possible where programs fail to operate, to know the damages for which a manufacturer might be responsible.

The problem, however, is not a unitary one. A legal outcome will largely depend upon which type of software is at issue, since this will reveal much about the parties to the transaction, who was in the best position to guard against consequential losses, and the

Copyright © Peter Ackerman 1989. All Rights Reserved.
† Candidate for J.D., 1989, Santa Clara University School of Law.
1. Buyers will be interchangeably referred to throughout this comment as "buyers," "consumers," and "users." This is done simply for the sake of linguistic flow, recognizing the distinctions that exist between, e.g., consumers and commercial purchasers. The former are generally considered to be at a bargaining disadvantage (and thus entitled to an extra measure of legal protection), while the latter's bargains are often deferred to by courts as presumably sophisticated transactions. It will briefly be noted, however, that commercial transactions involving software can easily inhere to the advantage of the seller in terms of bargaining sophistication.
2. Sellers will be interchangeably referred to as "sellers," "vendors," "developers," and "manufacturers," again, for linguistic flow. It is recognized here that several issues might arise depending upon one's characterization of the parties to a transaction. It is beyond the scope of this article to delve into these differences.
3. We are speaking here, of course, about software packages other than those used for recreational purposes, which are not generally associated with significant commercial losses.
fairness of a particular risk allocation. The nature of a particular program might also assist a court in its policy considerations, such as the desirability of awarding consequential damages at the expense of discouraging innovation in an important area.

Truly "canned" software packages are those which are comparatively inexpensive and routine, such as word processors. These types of programs are usually ready to run immediately, and require little substantive input from the user. It is unlikely that these standard types of programs will pose much legal difficulty, since they are not typically associated with major commercial losses in the event of program failure. Replacement or general money damages will ordinarily suffice to compensate the buyer. Further, as will be seen, it is difficult for a software developer to anticipate the panoply of uses to which a user is likely to put a basic canned software program. This cuts in favor of the defendant in a suit for consequential damages.

There are other, more sophisticated and specialized off-the-shelf software packages which provide greater potential for serious losses. Accounting packages, for example, comprise a significant portion of office automation, and thus command a great deal of reliance by many businesses. A catastrophic failure here could spell doom for some businesses. The complexity of these programs warrants greater scrutiny (and possibly greater liability) of the developer, who has more reason to know of the potential for serious harm if he has not taken adequate precautions. On the other hand, the complexity of a product often provides justification for an allocation of risk to the purchaser, assuming he is regarded as having fairly assumed this risk. Furthermore, accounting packages are highly configured by the user, which customization the developer might not have anticipated. This cuts in favor of the defendant on the consequential damages portion of a lawsuit.4

There are also mass-market tax packages and project management programs. The liability exposure of such complex programs should be of greater concern to developers. Users place trust in project management programs, which encourage certain judgments.5 Likewise, tax programs give substantive guidance which the user is

4. The case of James A. Cummings, discussed infra, is illustrative of the weakness of the buyer's case where he seeks consequential damages stemming from use of a program he has customized himself. Cummings apparently configured his spreadsheet to do bid calculations. He did not check his numbers against a model in the manual, contrary to a warning in the manual to do so. Telephone interview with Jeffrey Tarter, Publisher, SOFTLETTER, Cambridge, Mass. (Jan. 5, 1989).
5. Tarter, supra note 4.
unlikely to check by manually performing the math on all his figures (which would defeat the purpose of the program). In other words, the risk of loss is more likely shifted to the developer with respect to these types of programs, since the buyer takes them on faith, and has no realistic means by which to verify his calculations and results.

The reader should keep in mind such differences in attempting to predict the outcome of a case.

The microcomputer software industry is about ten years old. It is an industry which has grown at a rate unprecedented in the history of innovation. One court, in apparent awe of the computer industry phenomenon, observed:

Modern advancement in the industry built around [the computer] has been so rapid both in terms of technology and utilization, that the first commercially available general purpose computer, the UNIVAC, initially employed by the Census Bureau in 1951, has been reposing in the Smithsonian Institute since 1964 along with the Spirit of St. Louis.

There are so many players in the software industry - programmers, marketing executives, legal counsel, insurance underwriters, retailers, publishers, and users - that no consensus exists with regard to industry statistics. There is little argument, however, concerning the impressive magnitude of hardware and software growth. One interesting estimate is that in 1980 there were one million computers on earth. This includes computers of every type, from huge mainframes to the more generally familiar personal or microcomputers. That number has doubled virtually every year since then, to the point where there are now approximately twenty million computers in use. It took the telephone seventy-five years to reach that level. It took the automobile sixty years to reach that level. And it took the computer only about five years to reach that level.

The concomitant rise in the software industry has been equally impressive. The packaged PC software market has been character-

6. Id.
7. Id.
8. Telephone interviews with E. Ric Giardino, General Counsel, MicroPro Corp. (Oct. 8, 1987) and Bob Cohen, General Counsel, Borland Corp. (Oct. 12, 1987).
11. Id.
ized by nearly forty-eight percent growth per year.\textsuperscript{12} Packaged PC software was a $4.1 billion industry in 1988-89.\textsuperscript{13}

With barely enough time to have matured and settled into clearly defined markets, there have been calls for the imposition of restrictions and guidelines with respect to how the software industry is run.\textsuperscript{14} One particular area of concern for both industry professionals and consumers is the level of legal protection afforded each group in the event of a significant program failure. The concerns on both sides are quite legitimate; increasingly sophisticated consumers are expecting high levels of quality and adequate remedies for failed expectations, and industry executives insist upon an equitable sharing of the risks inherent in complex products.

The means by which these concerns are transactionally deployed involve warranties. There are several issues involving warranties, the legal exigencies of which have been competently discussed by numerous commentators. The framework for analysis, however, is consistent. Warranties must be discussed in the context of their creation, exclusion or disclaimer, accompanying limitations of remedies, and separate limitations of liability. This comment is no exception, although the discussion is narrowly tailored to merely highlight, rather than to attempt to resolve some of these issues in the software area.

The focus will begin with a survey of the general concerns of software vendors or developers. It is an attempt to assimilate widely held, but seldom articulated impressions of a young industry. Many of the views are predictable and valid, expressing fears of overly-expectant consumers and technological limitations, as well as liability for consequential damages.

Next, the concerns of small business users will briefly be explored. These, too, reveal natural reactions to exciting new products which zealously promise to enhance lives and businesses. Consumers validly expect to be highly satisfied with these products, and in many cases they are not. The software market has not reacted quickly enough to ward off the creation of consumer complaint and watchdog groups, some of which have lobbied for state and federal

\textsuperscript{12} Information obtained by telephone from Software Publishers Association, Washington, D.C. (Jan. 20, 1989).
\textsuperscript{13} Id.
Following will be a look at express warranties and associated remedies for breach. Express warranties are easily created (intentionally or not) and are difficult to exclude, particularly where the buyer is left with no meaningful remedy. Thus, software packages sold "as is," without so much as a "repair or replacement" provision, could place the manufacturer in a difficult liability position. Separate reference will be made to manufacturer liability limitations, specifically exclusions from liability for consequential damages. This is an unsettled area of the law, of which vendors and users alike should be aware.

Throughout this discussion, it is assumed that the Uniform Commercial Code applies to sales of canned software packages. This serves both to simplify matters and as a prediction of judicial treatment of software transactions, which have all the appearances of conventional sales of goods. Since there presently are no reported cases dealing with non-negotiated canned software failures, U.C.C. cases serve as useful analogies.

Also absent from this discussion are the implied warranties of merchantability, and fitness for a particular purpose.

As to merchantability, U.C.C. section 2-314(1) provides, in relevant part:

Unless excluded or modified (Section 2-316), a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind.

(Emphasis added.)

Since it is assumed that the U.C.C. applies, it is further assumed that section 2-316 has been complied with, the implied warranty of merchantability thus having effectively been excluded.

15. See generally Hearing, infra note 20.

16. This is not to detract from the efforts of those who maintain that software does not fit within the framework of the U.C.C. While the physical diskette upon which program is stored is clearly a "good," it requires much more imagination to characterize the magnetic data stored on the disks as "goods" (and, indeed, the data a program is capable of generating, which is not even in existence at the time of the sale). For good coverage of the issue, see generally Note, Computer Software as a Good Under the Uniform Commercial Code: Taking a Byte Out of the Intangibility Myth, 65 B.U.L. Rev. 129 (1985). Software is also technically "leased," as opposed to "sold," the manufacturer thereby retaining proprietary rights. The coverage of the U.C.C. has traditionally been regarded as extending only to "sales." But see U.C.C. § 2-102: "[T]his article applies to transactions in goods" (emphasis added). See also Article 2A, Uniform Personal Property Leasing Act at U.C.C. Rep. Serv. 2d, 1 Current Materials, § 2A101 (Callaghan) (July 1988) (proposed for uniform state adoption and intended to alleviate many classification problems where a technical lease has all the appearances of a sale).
As to fitness for a particular purpose, U.C.C. section 2-315 provides:

Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is unless excluded or modified under the next section an implied warranty that the goods shall be fit for such purpose. (Emphasis added.)

Again, it is assumed that this warranty has effectively been excluded.

Finally, the last main section offers some suggestions for vendors and users. There are many steps that can be taken on both sides of the transaction both to mollify the concerns of the other, and to protect one's own position. These will briefly be explored in terms ranging from common sense to legal pragmatism.

II. CONCERNS OF SOFTWARE VENDORS

Industry professionals are concerned about potential problems arising from conflicts between consumer expectations and product capability, substantive program errors, and liability for consequential, or “lost profits” damages.

It seems axiomatic that the expectations of a consumer ought to be fulfilled by a product sold to him on the basis of his purported needs. If you tell a salesman that you want clean clothes, and he sells you a washing machine, your clothes ought to come out clean. If you want sharp pencils and wind up purchasing a pencil sharpener, your pencils ought to come out sharp. Computer software, however, poses a unique problem. It operates wholly in conjunction with the user, to perform a variety of specified tasks depending upon the desired result. In this sense, software is written flexibly, to conform to the demands of the user in a given situation. Manufacturers will thus identify general tasks in the development stage, leaving it to the user to manipulate the program to conform to the user's particular needs. As such, according to several manufacturers, it is virtually impossible to delineate every application of a particular program.\textsuperscript{17} It is thus up to the consumer to either identify specific applications and ensure that a selected program will satisfy those needs through self-education, or accept the risk that his needs could not have been completely accounted for in a mass-marketed

\textsuperscript{17} Giardino & Cohen, \textit{supra} note 8.
piece of software.\textsuperscript{18}

It is possible that as more and more people begin to use computers, off-the-shelf software will proliferate to the point at which highly individualized needs will be satisfied. Single-need/single-capability software would pose less risk of misunderstanding or heightened expectations on the part of the consumer. The present reality, however, is that multi-task programs are the most effective way of exploiting the efficiencies of machines over human minds. Single program packages tend to address multiple problems in short spans of time, which is what seems to interest production-oriented people the most.

Manufacturers are nonetheless concerned that consumers are overly enthusiastic about the ability of software programs automatically to solve every problem. Since the products are not designed to run by themselves, the user must invest significant amounts of time to bring the program’s capabilities into conformity with his expectations.\textsuperscript{19} According to one industry executive, “success of a computer system is . . . contingent upon the effort the user makes to acquire a knowledge to make utility happen.”\textsuperscript{20} It is therefore crucial, according to industry executives, that software consumers carefully educate themselves prior to purchasing a program, in order to have a clearer picture of the ability of a particular program to solve their particular needs.

Software manufacturers do not feel that they should be the insurers of people who rely upon complex technology without taking measures to ensure the accuracy of their program results. Indeed, a number of manufacturers consider program accuracy as much a

\textsuperscript{18} Id.
\textsuperscript{19} Id.
\textsuperscript{20} \textit{Informational Hearing on Computers and Warranty Protection for Consumers, Sacramento, California, Oct. 9, 1985}, at 254 (Joint Publications Office, Sacramento, Ca.) (hereinafter \textit{Hearing}) (comments of Mr. Markle, Western Computer Dealers Ass’n.). Mr. Markle elaborated upon the “significant consumer responsibility” he sees in the symbiotic consumer-manufacturer relationship in the retail software area: “[F]ailure to prepare can be preparation to fail. For example, before purchasing a computer for serious use, the shopper should know what a computer is, how it relates to the user as a programmable tool. . . . Number two, what his requirements are — a considered performance specification derived from the analysis of work he needs done. Number three, what his system should be in the context of his performance specification, a solution system comprised of computer hardware, software, and also procedures, people and other resources, as well as specifications for expandability. Number four, support requirements, including installation, training, on-site and depot maintenance services. Number five, approximately how much time must be invested in training and/or self-study before being able to operate the functions for which the computer consumer is investing his money.” Id. at 271. Consider, also, the comment of Jeffrey Tarter, supra note 4: “You don’t buy a car (having not taken the time to learn how to drive), get into an accident, and sue the manufacturer.”
part of the software consumer's responsibility as their own. In an informational hearing before Assemblywoman Gloria Molina of California, for example, one software developer testified about the importance of good customer relations to the maintenance of product quality.\(^2\) In describing the process of testing for errors, he stated that "if you are effective, a relationship with your customer [would in essence say that] we need you guys to test this for us, because it is complex. We can't find everything that's wrong with it the first time it goes out the door. And so, please call us. Send us your reports with any errors that you find."\(^2\)

Many industry professionals are concerned about bearing the total risk for program errors which they consider to be generally beyond their control. Some regard program errors as being virtually inevitable, due to the fact that "humans are involved in the creation of software."\(^2\) There are also those who, more specifically, contend that the prospect for potentially serious "bugs"\(^2\) increases substantially with the complexity of a program, and that concomitant problems with error detection exist.\(^2\) While it is true that a variety of methods exist to weed out and correct most programming errors,\(^2\) at least one qualified commentator has suggested that despite these various safeguards, the combination of influences that can adversely affect a program warrant the conclusion that "there

\(^{21}\) See Hearing, supra note 20, at 181 (comments of Sherwin Steffin, Chief Executive Officer, Brainpower, Inc.).

\(^{22}\) Id.


\(^{24}\) A "bug" is basically an error in a computer program's code, which is capable of either frustrating effective use of the program to its full potential, or rendering it completely inoperable. A bug in a program is capable not only of frustrating the program itself, but it could also cause the data being generated to suffer — and possibly to destroy it. See infra note 42.

\(^{25}\) Giardino & Cohen, supra note 8. See also Gemignani, Product Liability and Software, 8 J. OF COMPUTERS, TECH. & L. 173, 181-87 and accompanying notes (1981). For a dramatic example of program complexity and the potential for enormous miscalculations, albeit not of the "canned" variety, see Hertz, SDI Demands Trillions of Instructions, 99.9999999 Percent Reliability, COMPUTERWORLD, June 2, 1986, at 17. For other examples, see A Micro-Macro Measure of Software Complexity, J. Sys. SOFTWARE, Sept. 1987, at 213; User's Rising Expectations Seen Spurring Software Crisis, COMPUTERWORLD, Sept. 24, 1984, at 25 ("Many software designers experience two major problems. First, as the complexity of the program increases, each error is more difficult to extract. Second, corrections made to the program at the end of the development process are likely to create new errors somewhere in the program.") Even programs guaranteed to be up and running 99.9 percent of the time will, by mathematical definition, be "down" for approximately 8.76 hours per year. 99% "up time" means 87.6 hours of "down time" per year. Interview with Rick Ehrhart, Computer Programming Consultant, CWA Comm. Prod., Inc., Los Gatos, Ca. (Oct. 14, 1987).

\(^{26}\) See Gemignani, supra note 25, at 185 n.35.
always remains some chance of catastrophic failure.”

He goes on to submit that “[i]t is not a question of whether there is some risk, but of whether the level of risk is acceptable.”

Accepting the technological limitations inherent in software development, there is a good argument in favor of limiting the liability of the manufacturer, who is constrained from improving his product beyond a certain point.

Another concern of software vendors relating to the possibility of substantive program failures is the symphony of configurations required to run a program. In order to be rendered functional, software must be joined with compatible hardware, operating systems, and sometimes applications programs. An error or power surge at any point along the electronic chain can “crash” a program, and possibly destroy a data file. These types of problems are more within the control of the user and should not add to the manufacturer’s liability.

Many software manufacturers are willing to fix or replace programs that are shown to have “repeatable” errors; that is, if a program failure can be recreated, this is sufficient evidence of a flaw in the vendor’s product, and will usually be corrected. One industry executive has publicly stated that it is his company’s policy to fix repeatable errors at no charge, considering this a cost of doing business. “We view our customers as corporate assets,” he said, “and we feel it’s in the best interest of the corporation to provide this level of support.” Still, the tendency of many consumers is to point the finger at the software manufacturer with little understanding of or concern for the possibility of alternative causes for failures, and this concerns many in the industry - particularly in light of the frequent appearance and disappearance from the market of various computer products and support services which contribute to (or detract from) the use of many software programs. To the extent the user can take measures to avoid these pitfalls, another argument emerges in support of limiting the liability of a manufacturer.

The concerns discussed above deal with the information gap

28. Id.
29. See Gemignani, supra note 25. See also Hearing, supra note 20, at 200 ("90 percent of the problems are bugs in the operating system." Comments of Harold Spice, Chief Executive Officer, Paradyme Software Corp.).
31. Hearing, supra note 20, at 198 (comments of Harold Spice).
32. Id.
that often exists between software manufacturers and technologically unsophisticated consumers. Customers who know the idiosyncratic functions of their businesses often lack the knowledge of computers and computer equipment clearly to identify their needs or fully to explore the capabilities and limitations of their software. Equally difficult for the supplier is the task of satisfying every user for every conceivable application of a computer program. One must carefully consider, however, the nature of the program under consideration. As already discussed, there is a major difference between "ordinary" canned software, and those programs which require significant user interaction and manipulation. The more a user has engaged in program customization, the more fairly he may be charged with the risk of error.

Perhaps the most troubling area of concern for the software manufacturer is the amount of damages owed to the buyer in the event of a loss on the merits of a complaint. Vendors consider consequential damages for economic loss suffered due to a program failure completely unreasonable responses to what they see as consumer risk-sharing in an evolutionary market. Such a market, many manufacturers believe, is a joint venture of sorts between consumer and producer, with significant risk management responsibilities on both sides. The microcomputer industry is peculiar in that it is so dynamic; products are in continuous and various stages of development. Thus, according to several software manufacturers, the industry is too young to warrant the kinds of reactions that result in heavy consequential damage awards. They believe they should be able freely to restrict their liability, lest relatively new and experimental products be thwarted or destroyed.

III. CONCERNS OF SMALL BUSINESS USERS

The first factor to be considered is that users often tend to think they have a cognizable claim when software fails to perform in accordance with their general expectations. Consider, for example, some common advertisements for various software packages: "NewsMaster is so easy to use, you'll be mixing text lines, boxes and clip art into multicolumn, multipage documents in less than an

34. See Rumbelow, Liability for Programming Errors, 9 Int'l Bus. Law. 303 (1981). 35. Giardino & Cohen, supra note 8. But consider the comment of former California Assemblywoman Gloria Molina: "If I wanted to share in the risk or the growth [of a computer company], I would have bought its stock, not its computer." Hearing, supra note 20, at 126.
hour";\textsuperscript{36} "A breakthrough in micro software power and flexibility means never having to replace your business accounting software again! Get All the Power You'll Ever Need - Once and For All";\textsuperscript{37} "If you have to move heaven and earth, the best project management software can make a world of difference. Harvard Total Project Manager II (HTPM II) lets you manage important projects faster and easier, with earth-shaking new features."\textsuperscript{38} "Turbo C: The fastest, most efficient and easy-to-use C compiler at any price."\textsuperscript{39} Common sense would tell us that converting such representations to colorable legal claims is similar to suing the author of a book on how to improve your life, if your life has not been improved.\textsuperscript{40}

But performance representations of a more specific nature are far more serious. As we shall see, the more relevant to product performance and specific a statement or representation, the more likely it is to have created an express warranty.\textsuperscript{41} Far from being interested in such legal niceties, though, many users are simply aggravated by frequent disappointments with quality, complexity, and support service. A few examples: Lotus Development Corporation's Symphony program, advertised as "[t]he complete business software integrating 1-2-3 spreadsheet technology with word processing, graphics, database and communications," was plagued with a flaw which killed data when users tried to move certain figures;\textsuperscript{42} Microsoft's Multiplan, a business applications program, has deleted data when users tried to print it out;\textsuperscript{43} Apple's MacWrite word processing program was found to have a bug which froze the program whenever the backspace key was hit, forcing the user to turn his computer on and off several times to get it working again.\textsuperscript{44}

Perhaps the apex of consumer frustration is represented by the "User's Bill of Rights", an outline of concepts deemed fundamental to what it is that users expect, and what they feel they are entitled to get from the software industry. It was promulgated by the Capital
PC User Group, a consumer organization based near Washington, D.C., and while not binding on anyone, the list has identified the major areas of concern for software users:

1. Users have the right to expect products to perform as advertised.
2. A product should perform the basic functions common to its genre at a level of quality consistent with industry standards.
3. Users have the right to make backup copies of software to ensure uninterrupted use of the program should the original copy fail.
4. Manufacturers have an obligation to inform users of known errors, bug fixes, and temporary work-arounds and to provide periodic updates to correct errors.
5. Users have the right to integrate software into their system environments without undue constraint by copy protection, authorization requirements, or extraneous functions added to the software.\[45\]

The first "right" appears to reflect existing express warranty law, while the second aspires to eliminate the ability of a manufacturer to exclude implied warranties.

Finally, there remains the ever-present potential for significant commercial losses in the event of a substantial program failure. The first case to have raised many eyebrows in the software industry was that of James A. Cummings, Inc.\[46\] Cummings, a construction company in Fort Lauderdale, Florida, calculated a bid for a project using Lotus Development's Symphony program. Cummings got the job, and subsequently discovered that it had underbid the project by $254,000.00. This deficiency was blamed by Cummings on what it believed to be a bug in the software used to calculate the bid. A lawsuit followed, for which Cummings sought consequential damages from Lotus. Although the suit was withdrawn, the seed was planted for this type of high-cost liability litigation.\[47\]

A recent case with even greater potential significance is Geo-physical Sys. Corp. v. Seismograph Serv. Corp.,\[48\] which resulted in a

---

$48.3 million jury verdict in favor of the plaintiff. Geophysical claimed, *inter alia*, that the seismic data processing software it purchased from Seismograph was flawed, causing Geophysical substantial loss of business. Assuming full consideration on appeal (since there was no judicial elaboration of the legal issues at trial), the final disposition of this case will have a considerable impact in the area of software liability litigation. A closer look at the substantive law may enhance one's ability to predict the outcome.

IV. EXPRESS WARRANTIES AND CONSEQUENTIAL DAMAGE LIMITATIONS

A. Express Warranties

1. Creation

Section 2-313 of the U.C.C. provides:

(1) Express warranties by the seller are created as follows:

(a) Any affirmation of fact or promise made by the seller to the buyer which relates to the goods and becomes part of the basis of the bargain creates an express warranty that the goods shall conform to the affirmation or promise.

(b) Any description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description.

(c) Any sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model.

(2) It is not necessary to the creation of an express warranty that the seller use formal words such as "warrant" or "guarantee" or that he have a specific intention to make a warranty, but an affirmation merely of the value of the goods or a statement purporting to be merely the seller’s opinion or commendation of the goods does not create a warranty.

Presumably, then, if one were to purchase a software package which is represented as suitable for use with a certain amount of computer memory, which operates at a certain speed, or which has been sold on the basis of a demonstration, remedy should be had for breach of


50. *Id.*

51. For further discussion of this case, see *infra* notes 146-63 and accompanying text.
an express warranty as to those particular features, should they fail to accord with the representations.\textsuperscript{52} It should be borne in mind by a purchaser, however, that these express warranties will usually be held to apply only to the features specifically mentioned, and will preclude recovery for the nonperformance of other aspects of the program.\textsuperscript{53}

On the other hand, the seller should bear in mind the absolute ease with which express warranties might be created. Facts, promises, descriptions, and models are simply express characterizations of quality and performance, and there are a variety of methods for projecting them, including brochures, ads, product labels, and order forms.\textsuperscript{54} Furthermore, it is possible that even if the buyer does not fully understand the technicalities of program specifications, but is nonetheless sufficiently impressed by them, their mere existence could provide him with an express warranty. Comment 5 to Section 2-313 suggests this:

A description need not be by words. Technical specifications, blueprints and the like can afford more exact description than mere language and if made part of the basis of the bargain goods must conform with them.\textsuperscript{55}

It is unclear whether the "basis of the bargain" provision of Section 2-313 requires that the buyer actually have relied upon product representations to gain the benefit of express warranty protection. There is a split of authority on this issue.\textsuperscript{56} There is, however, considerable strength to the argument that reliance by the buyer is a relaxed requirement (if a requirement at all) under the Code. The foundation for this theory is reflected in the linguistic changes of the U.C.C. from the Uniform Sales Act it supplanted, and the Code's accompanying official comments.

The Uniform Sales Act provided that express warranties would arise if the buyer was induced to purchase in reliance upon factual representations or promises.\textsuperscript{57} The U.C.C. changed this to provide

\begin{itemize}
\item \textsuperscript{53} Id.
\item \textsuperscript{54} See Special Project, Article Two Warranties in Commercial Transactions, 64 CORNELL L. REV. 30, 48 (1978). See also F. Cooper, Law and the Software Marketer 128-29 (1988).
\item \textsuperscript{55} U.C.C. § 2-313 comment 5 (1976).
\item \textsuperscript{57} "Any affirmation of fact or any promise by the seller relating to the goods is an express warranty if the natural tendency of such affirmation or promise is to induce the buyer
that express warranties would arise if promises or affirmations of fact formed part of the "basis of the bargain." Comment 3 attempts to clarify this change, though it still falls short of offering any definitions:

In actual practice affirmations of fact made by the seller are regarded as part of the description of those goods; hence no particular reliance on such statements need be shown in order to weave them into the fabric of the agreement.

In any event, it seems clear that the focus has shifted from the state of mind or conduct of the buyer (who formerly had to prove reliance), to the representations of the seller. Comment 4 affirms this notion by reiterating the purpose of warranty law, which is to determine "what it is that the seller has in essence agreed to sell." At most it may be said that the Code is willing to presume buyer reliance upon express representations, leaving it to the seller to show clear affirmative proof to the contrary.

Note here the potential significance of the type of software at issue, and the individual purchasing it. These factors will surely make a difference. It is unlikely, for example, that seller representations will have contributed much, if anything, to the purchasing decision of a user highly sophisticated in the use of complex software and who has prior experience with its capabilities (or perhaps knowledge of contrary capabilities). This will depend, of course, upon the weight of evidence. Contrast that scenario with the small businessman with no prior computer experience, purchasing a software package for the first time. The latter is far more likely to be justified in basing his purchasing decision upon manufacturers' representations, and thus more likely to gain the benefit of express warranty protection.

These factors will also bear directly upon whether the buyer was justified in viewing the seller's representations as fact, as op-
posed to opinion or commendation, the latter being excluded from the rubric of Section 2-313 by definition.

U.C.C. Section 2-313(2) states that "an affirmation merely of the value of the goods or a statement purporting to be merely the seller's opinion or commendation of the goods does not create a warranty."

The distinction between fact and opinion has never been unequivocally defined, perhaps owing to the inherent difficulty of such an endeavor. In the context of computer software, the "reasonable person" standard often applied to the "puffery" issue might pose some difficulty for an uninitiated judge or jury, given the complexities of many standard program descriptions. Yet even though it may be difficult for one with no computer experience to determine whether a representation is fact or opinion, a defense on this score is unlikely to prevail if it can be rationally borne out that information conveyed was specific in nature, if it related explicitly to the goods in question, and it was reasonable in the circumstances for the buyer to have relied upon the information in making the purchase. Certainly in the context of computer software, there is not much other than program performance that can be represented, as the product has no aesthetic or other tangential value to the prospective buyer.

But note again the factors to be considered. Some software packages are so new in their applications as to be almost experimental in nature. While this should not, by itself, determine the (non)existence of a warranty, a sophisticated buyer with first-hand knowledge of such circumstances might fairly be charged with the risk that no express warranty existed to protect him. The vendor would at least wish to argue this, in combination with the social

63. See Downie v. Abex Corp., 741 F.2d 1235, 1240 (10th Cir. 1984).
64. Id. See also WHITE & SUMMERS, HANDBOOK OF THE LAW UNDER THE UNIFORM COMMERCIAL CODE 330 (2d ed. 1980).
65. Id. at 328-29.
66. Id. Other suggested guidelines for drawing the distinction between fact and opinion have included the susceptibility of an assertion to verification, whether it was written or oral, and the degree of certainty with which it was set forth. Comment, Consumer Warranty Law in California Under the Commercial Code and the Song-Beverly and Magnuson-Moss Warranty Acts, 26 UCLA L. REV. 583, 598 (1979), citing WHITE & SUMMERS, supra note 64, at 274-76.
67. See Special Project, supra note 54 at 65-66.
68. Id. See also General Supply & Equip. Co. v. Phillips, 490 S.W.2d 913 (Tex. App. 1972) ("The test for whether a given representation is a 'warranty' or a mere expression of opinion is: did the seller assume to assert a fact of which the buyer is ignorant, or did he merely express a judgment about a thing as to which they may each be expected to have an opinion." (citing Wedding v. Duncan, 310 Ky. 374, 220 S.W.2d 564 (1969))).
policy of encouraging innovation. Even with respect to other kinds of programs, the vendor will wish to point out that commercial transactions invariably include the expectation of zealous salesmanship, and a purchaser who submissively gives way to everything he is told must assume the risk of his acquiescence. This squares with an additional policy — namely, that a consumer who has had the opportunity to shop around and compare may be fairly charged with the risk that a chosen product will fail to meet his economic expectations.

The buyer, by contrast, will rely upon the theme of fairness running throughout the Code. The change in emphasis away from buyer reliance suggests that the buyer might be able to claim the protection of express warranties of which he was not even aware. This will become an important argument in the context of warranties which reside inside the box, which do not come to the buyer's attention until after the purchase. The California Supreme Court, in Hauter v. Zogarts, took a stab at this concept by noting, in dictum, that a buyer's lack of reliance alone will not take a seller's affirmation out of the agreement; thus, once an affirmation is made by the seller, "he cannot avoid liability for selling lower grade goods. No longer can he find solace in the fact that the injured consumer never saw his warranty."

2. Disclaimer

Section 2-313 of the U.C.C. provides, in part:

(1) Words or conduct relevant to the creation of an express warranty and words or conduct tending to negate or limit warranty shall be construed wherever reasonable as consistent with each other; but subject to the provisions of this Article on parol or extrinsic evidence (section 2-202) negation or limitation is inoperative to the extent that such construction is unreasonable.

Software developers are thus constrained, in view of the Code, from

---

69. "The law recognizes the fact that men will naturally overstate the value and qualities of the articles which they have to sell." Kimball v. Bangs, 144 Mass. 321, 324, 11 N.E. 113, 114 (1887).
70. Unless, of course, the manufacturer or seller agrees to assume this risk. See Seeley v. White Motor Co., 63 Cal. 2d 9, 18, 45 Cal. Rptr. 17, 23 (1965).
71. See generally Comment, supra note 56.
73. Hauter, 14 Cal. 3d at 116 n.12, 120 Cal. Rptr. at 688 n.12. See also Donaldson, Affirmations or Representations Made After the Sale is Closed as Basis of Warranty Under U.C.C. Section 2-313(1)(a), 47 A.L.R.4th 200 (1988).
making any promises they cannot fulfill.\textsuperscript{74} To the extent that a clause in the contract (or license agreement) disclaims a previously stated specific description, no reasonable construction by a court could render these two provisions consistent with one another, and the disclaimer would fail.\textsuperscript{75} A literal reading of the Code thus warrants the conclusion that language "which otherwise would create an express warranty shall not be denied effect by words of disclaimer."\textsuperscript{76}

A simple illustration of this point is provided by \textit{Consolidated Data Terminals v. Applied Digital Data Systems}.\textsuperscript{77} There, Consolidated was found to have relied upon defendant's detailed specifications of computer terminal performance — specifically, that the Regent 100 terminals would operate at 19,200 baud.\textsuperscript{78} Defendant's written warranty, however, provided only for a ninety-day guarantee against defects in material and workmanship, excluding any other express or implied warranties.\textsuperscript{79} The court was not interested in whether the failure of the terminals to operate at the promised speed constituted defects in "materials" or "workmanship," since it found that the express warranty disclaimer gave way to the warranty created by the detailed specifications:

Where a contract includes both specific warranty language and a general disclaimer of warranty liability, the former prevails over the latter where the two cannot reasonably be reconciled. . . An attempt to both warrant and refuse to warrant goods creates an ambiguity which can only be resolved by making one term yield to the other. . . Section 2-316(1) of the Uniform Commercial Code provides that warranty language prevails over the dis-

\begin{quote}
75. \textit{Id.}
77. 708 F.2d 385 (9th Cir. 1983).
78. \textit{Id.} at 391. Note here that although the court spoke the language of reliance, an express warranty would undoubtedly have been found to exist using strict basis of the bargain analysis, given the unequivocal and highly specific nature of the representation.
79. The warranty, in relevant part, provided: ADDS warrants each new communications and terminal product manufactured by it to be free from defects in material and workmanship under normal use and service for a period of 90 days from the date of shipment.

ADDS MAKES NO WARRANTY, EXPRESS OR IMPLIED; AND ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEEDS THE FOREGOING WARRANTY IS HEREBY DISCLAIMED BY ADDS AND EXCLUDED FROM ANY AGREEMENT MADE BY ACCEPTANCE OF ANY ORDER PURSUANT TO THIS AGREEMENT.
\end{quote}

\textit{Consolidated}, 708 F.2d at 391 n.5.
"CANNED" SOFTWARE WARRANTIES

claimers, if the two cannot be reasonably reconciled.80

"As is" provisions, which purport to nullify any and all warranties (and thus in effect insulate the seller from all liability, to be discussed below), are unlikely to prevail over otherwise valid express warranties. It is counter-intuitive to presume that express representations of quality made by a seller could be disclaimed. This accords with the Drafters' Comment as to the purpose of Section 2-316:

This section is designed principally to deal with those frequent clauses in sales contracts which seek to exclude "all warranties, express or implied." It seeks to protect a buyer from unexpected and unbargained language of disclaimer by denying effect to such language when inconsistent with language of express warranty and permitting the exclusion of implied warranties only by conspicuous language or other circumstances which protect the buyer from surprise.81

While one of the basic tenets of contract law is the freedom to shift the risk of loss or damage,82 it is delusional to expect judicial reception to one-sided non-negotiated warranty provisions. Many vendors of packaged software are coming to realize this.83 On this note, the court in A & M Produce Co. v. FMC Corp.,84 where a machine purchased for processing the plaintiff's tomato crop failed to operate properly and no meaningful remedy was provided for in the standard warranty, stated:

[S]ince a product's performance forms the fundamental basis for a sales contract, it is patently unreasonable to assume that a buyer would purchase a standardized mass-produced product from an industry seller without any enforceable performance standards.85

An extended discussion of Section 2-316's reference to Section 2-202 (parol evidence) is not attempted, except to note that parol

---

80. Consolidated, 708 F.2d at 391 (citing both U.C.C. § 2-316 and Wilson Trading Corp. v. David Ferguson, Ltd., 23 N.Y.2d 398, 405, 244 N.E.2d 685, 689 (1968)).
82. See generally Williston, Freedom of Contract, 6 CORNELL L.Q. 365 (1921). With regard to risk shifting, the court in Kaiser Steel Corp. v. Westinghouse Elec. Corp., 55 Cal. App. 3d 737, 747, 127 Cal. Rptr. 838, 845 (1976) had this to say: "Judicial paternalism is to loss shifting what garlic is to stew — sometimes necessary to give full flavor to statutory law, always distinctly noticeable in its result, overwhelmingly counterproductive if excessive, and never an end in itself."
84. 135 Cal. App. 3d 473, 186 Cal. Rptr. 114 (1982).
85. Id. at 491, 186 Cal. Rptr. at 125.
representations amounting to express warranties might validly be
excluded by effective merger or integration clauses. 86 This is one
method of disclaiming an express warranty (keeping in mind that
canned software is often marketed on the basis of written represen-
tations or demonstrations). 87 The only other method available to
the seller to avoid express warranty application is effectively to ne-
gate the presumption that his affirmations contributed to the basis
of the bargain.

B. Limitations of Remedies and Consequential Damage
Exclusions

Disclaimers of warranties deal with sellers' attempts to limit
situations in which they can be held for a breach, whereas limita-
tions of liability assume that a breach has already occurred, and
seek only to limit the remedies available to the plaintiff. 88 Given the
potential for enormous liability in the event of a catastrophic pro-
gram failure, it is the issue of liability limitation which interests
most vendors.

Comment 1 to U.C.C. Section 2-719 states that "it is the very
essence of a sales contract that at least minimum adequate remedies
be available." 89 A vendor who thus offers a product to the general
public with a warranty provision which actually (or in effect) ex-
cludes him from all liability for failure of the product to perform,
will be hard pressed to justify such a provision.

Former California Assemblywoman Gloria Molina, who was
herself disappointed by a computer purchase, introduced legislation
which would have imposed minimum warranty guidelines on the
software industry in her state. In view of this, and largely in reac-
tion to the supplications of the Association of Data Processing Ser-
vice Organizations (ADAPSO) to prevent the bill's passage, many
software vendors have shifted from "as is" provisions, to providing
the exclusive remedies of repair or replacement for defective prod-
ucts. 90 Accompanying these exclusive remedies are usually separate
clauses which preclude manufacturer liability for consequential
damages. 91 The center stage for legal conflict is in this area; the

86. For an extended discussion of this, see Special Project, supra note 54, at 176-80.
88. A & M Produce, 135 Cal. App. 3d at 481 n.3, 186 Cal. Rptr. at 118 n.3 (1982).
90. PC MAGAZINE, July 1987, at 316.
91. For example:
   IN NO EVENT SHALL [ABC COMPANY] BE LIABLE FOR ERRORS
   OR OMISSIONS CONTAINED IN ITS SOFTWARE OR MANUAL, ANY
efficacy of consequential damage exclusions is called into question where manufacturers fail to fulfill their warranty obligations.

We are primarily concerned here with the prospect for consequential damage recovery by purchasers of off-the-shelf software, for which no contract or warranty terms have been negotiated. Again, however, the analysis given by courts in arms-length bargain situations will be instructive to the extent that they survey the framework of the U.C.C.

U.C.C. section 2-719(1) gives a seller permission to contractually limit the buyer's remedies. Such limitations on remedies will stand, under the Code, so long as they don't "fail of their essential purpose." For example, where a warranty provides that the buyer's sole remedy will be "repair or replacement of defective parts," and the seller is either unwilling or unable to repair or replace, most courts will hold that the exclusive remedy has "failed of its essential purpose." If there is a "failure of essential purpose," then the floodgates of Code remedies will open up to the buyer. Or will they? Case law and commentary vary as to the proper relationship between clauses which limit a buyer's remedies, and separate provisions exempting the seller from liability for consequential damages. In other words, where a breach of warranty occurs, exactly what may the buyer expect to recover as damages, in the face of a consequential damages exclusion?

As already mentioned, U.C.C. Subsection 2-719(1) provides authority for a seller to limit the remedies of a buyer. Subsections 2-719(2) and (3) limit this privilege by giving the buyer two inroads

INTERRUPTIONS OF SERVICE, A LOSS OF BUSINESS OR ANTICI-
PATORY PROFITS AND/OR INCIDENTAL OR CONSEQUENTIAL
DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORM-
ANCE OR USE OF THESE MATERIALS.


92. "[T]he agreement may provide for remedies in addition to or in substitution for those provided in this Article and may limit or alter the measure of damages recoverable under this Article, as by limiting the buyer's remedies to return of the goods and repayment of the price or to repair and replacement of non-conforming goods or parts." U.C.C. § 2-719(1)(a) (1976).


94. See, e.g., Chatlos Sys., Inc. v. NCR Corp., 635 F.2d 1081 (3d Cir. 1980); RRX Indus., Inc. v. Lab-Con, Inc., 772 F.2d 543 (9th Cir. 1985).

95. The basis for arguments in this regard is the language of U.C.C. § 2-719(2) allowing remedies "as provided in this Act."

96. Compare Chatlos, 635 F.2d at 1086 (holding that a limited remedy of repair and a consequential damages exclusion "are not mutually exclusive") with Soo Line R.R. Co. v. Fruehauf Corp., 547 F.2d 1365, 1373 (8th Cir. 1977) (holding that "a remedial limitation's failure of essential purpose makes available all contractual remedies, including consequential damages").
to damages beyond those the warranty provides. Subsection 2-719(2) states:

Where circumstances cause an exclusive or limited remedy to fail of its essential purpose, remedy may be had as provided in this Act.

Subsection 2-719(3) states:

Consequential damages may be limited or excluded unless the limitation or exclusion is unconscionable. Limitation of consequential damages for injury to the person in the case of consumer goods is prima facie unconscionable but limitation of damages where the loss is commercial is not.

A literal reading of these two subsections would seem to warrant the conclusion that the validity of an exclusive remedy is tested according to whether it fulfills its essential purpose, and the validity of a consequential damages exclusion is tested according to whether it is unconscionable.\(^9\) In other words, the Code contemplates a situation where consequential damages will still be barred (assuming there's a clause in the contract to that effect) despite the fact that an exclusive remedy has failed of its essential purpose. In such a case, the language of subsection 2-719(2) referring to the remedy which may be had "as provided in this Act" would refer to the menu of general damage options provided in Code Section 2-711,\(^98\) without disturbing the independent nature of Section 2-719(3).

What is "unconscionability?" The court in \(^{99}\) gave a clear articulation of its components, which consist of a "procedural" and a "substantive" aspect. Procedural unconscionability involves such things as oppression and surprise — oppression referring primarily to unequal bargaining power and "an absence of meaningful choice;" surprise relating to adhesion-type form contracts replete with fine print.\(^100\) Substantive unconscionability relates to objectively unreasonable or unexpected risk allocations, as measured at the inception of a bargain.\(^101\) These factors may all combine to produce an unconscionable exclusion of consequential damage liability, or they may operate upon one another, as where "the greater the unfair surprise or inequality of bargaining power,


\(^98\) Primary reference is given here to the buyer's recovery of "formula" damages — the difference in value between what he should have received and what he actually received.


\(^100\) \(A \& M\) Produce, 135 Cal. App. 3d at 486.

\(^101\) \(Id.\) at 487.
the less [an unreasonable risk allocation] will be tolerated." 102

Some courts, such as the Third Circuit, have embraced the literal reading of Code Section 2-719 by separately scrutinizing a seller's performance on an exclusive remedy, and the seller's clause limiting liability for consequential damages. 103 Others have boldly asserted that there is a mutual dependency between Sections 2-719(2) and (3), holding that when an exclusive remedy fails of its essential purpose, then all remedies available under the Code, including consequential damages, are made available to the aggrieved plaintiff (upon proper proof, of course). 104 Finally, there are those courts, such as the Ninth Circuit, which have demonstrated an understanding of the relationship between Code Sections 2-719(2) and (3), yet have circumvented a literal reading of the Code with little explanation. The balance of this section will undertake a closer look at the treatment given these issues by the Third and Ninth Circuits, respectively.

In Chatlos Systems, Inc. v. National Cash Register, 105 Chatlos (the buyer) purchased a computer system which was to be installed and programmed by NCR (the seller). The system was to perform several routine business functions, such as accounts receivable, payroll and inventory control. 106 There were several warranties found to exist in the transaction, among them being an express warranty to repair for "twelve months after delivery against defects in material, workmanship and operational failure from ordinary use." 107 The contract also contained a clause which stated that "[i]n no event shall NCR be liable for special or consequential damages from any cause whatsoever." 108 The system failed to function as warranted, despite the repeated efforts of NCR to repair it. Chatlos sued for general and consequential damages.

In finding that a breach of warranty had occurred, the court


103. See infra notes 105-23 and accompanying text.


105. 635 F.2d 1081 (3d Cir. 1980).

106. Id. at 1083.

107. Id. Other warranties included the seller's statements that the system would "solve inventory problems, result in direct savings of labor costs, and be programmed by capable NCR personnel to be 'up and running' (in full operation) within six months." Id.

108. Id. at 1085.
was particularly interested in the fact that NCR's attempts to repair spanned a year and a half. This, in the court's opinion, rendered the repair remedy ineffective for the buyer's purposes, and the court therefore found it to have failed of its essential purpose.\textsuperscript{109} Citing with approval from another case, it stated that "the seller does not have an unlimited time for the performance of the obligation to replace and repair parts."\textsuperscript{110}

Considering next the separate contractual exclusion of consequential damages, the \textit{Chatlos} court quite succinctly and clearly took hold of the literal meaning of Section 2-719's provisions: "The limited remedy of repair and a consequential damages exclusion are two discrete ways of attempting to limit recovery for breach of warranty... The former survives unless it fails of its essential purpose, while the latter is valid unless it is unconscionable... The two are not mutually exclusive."\textsuperscript{111}

The court found "no great disparity in the parties' bargaining power or sophistication," and no element of "surprise," such as might be expected in the case of "an ordinary consumer being misled by a disclaimer hidden in a 'linguistic maze'."\textsuperscript{112} The two adversaries were "substantial business concerns," and \textit{Chatlos}, in the business of manufacturing complex electronic equipment, "had some appreciation of the problems that might be encountered with a computer system."\textsuperscript{113} Further, the court reasoned that "[s]ome disruption of normal business routines, expenditure of employee time, and impairment of efficiency cannot be considered highly unusual or unforeseeable in a faulty computer installation."\textsuperscript{114}

These factors combined to convince the court in \textit{Chatlos} that the parties' contractual allocation of risk was not unconscionable, and therefore upheld the exclusion of consequentials.\textsuperscript{115} For the warranty breach, the court remanded for a determination of damages based upon U.C.C. section 2-714(2) — the difference "between the value of the goods accepted and the value they would have had

\textsuperscript{109} \textit{Id.} at 1086.

\textsuperscript{110} \textit{Id.} at 1085 (citing Riley v. Ford Motor Co., 442 F.2d 670 n.5 (9th Cir. 1971)).

\textsuperscript{111} \textit{Chatlos}, 635 F.2d at 1086.

\textsuperscript{112} \textit{Id.} at 1087.

\textsuperscript{113} \textit{Id.}

\textsuperscript{114} \textit{Id.}

\textsuperscript{115} \textit{Chatlos} has been sharply criticized as having reached the wrong result by failing to explore fully the doctrine of unconscionability in the context of computer technology. \textit{See Note}, \textit{U.C.C. Section 2-719 as Applied to Computer Contracts — Unconscionable Exclusions of Remedy?: Chatlos Systems, Inc. v. National Cash Register Corp.,} 14 CONN. L. REV. 71 (1981).
if they had been as warranted.”

Chatlos was a clear articulation of the independence of Code sections 2-719(2) and (3). It also represents the type of treatment many software vendors expect from courts.

There are indeed strong arguments to support the position of the software manufacturers. The language of Code Section 2-719(3) suggests that limitations on damages for commercial loss are more favorably viewed than clauses precluding recovery for personal injury. In addition, many industry professionals believe that the special characteristics of computer software—sensitivity to operation on various types of peripheral hardware, the difficulty (some would say impossibility) in writing error-free programs, the sophistication required to understand documentation and use a complex program—are such that allocations of the risk of commercial loss are entirely reasonable. Consequential damage limitations are, after all, “merely an allocation of unknown or undeterminable risks.” The Chatlos court exhibited some awareness of the risks inherent in relying upon computer technology by observing that problems with faulty software “cannot be considered highly unusual or unforeseeable,” and are therefore “within the realm of expectable losses.”

Alternatively, software manufacturers will argue on a policy level that consequential damage exclusions are crucial to their survival in a competitively and technologically dynamic market. The New Jersey Supreme Court, expanding upon the Chatlos decision, underscored this principle by stating: “the commercial reality is that for many sellers, immunity from liability for their customers’ consequential damages may be indispensable to their pricing struc-

116. Chatlos, 635 F.2d at 1087 (citing U.C.C. § 2-714(2)). The damages in Chatlos, prior to determination on remand, were $57,152.76 under U.C.C. § 2-714(2) and $63,558.16 in consequentials. Id. at 1084.

117. “Limitation of consequential damages for injury to the person in the case of consumer goods is prima facie unconscionable but limitation of damages where the loss is commercial is not.” U.C.C. § 2-719(3) (1976).

118. See supra notes 17-35 and accompanying text.


120. Chatlos, 635 F.2d at 1087. See also Harper Tax Services, Inc. v. Quick Tax, Ltd., No. Y-85-3170, 6 U.C.C. Rep. Serv. 2d (Callaghan) 408, 413-14 (D. Md. 1988): “[T]he agreement’s exclusion of consequential damages for breach of contract is not prima facie unconscionable. That the agreement was an adhesion contract — of pre-specified form and not actually negotiated — does not lead to the conclusion that it was unconscionable. . . . Such standard form agreements offer the non-drafting party the choice of accepting or rejecting the contract as drafted. . . . The fairness of business deals premised upon clear allocations of risk cannot be judged in hindsight.”
ture and, in extreme cases, to their solvency."

Perhaps it is not so extreme to think that a software vendor could be rendered insolvent if precluded from protecting itself from incalculable losses. One industry professional has expressed concern that although a software company can seem large to a small company, it can also be very small in relation to a big customer. In reiterating this theme, one dissenter had this to say:

It is...obvious that many sellers of goods or providers of services would find the risk of liability for unlimited consequential damages prohibitive. Assume, for example, that a Fortune 500 company offers a contract to a small company. Although the contract could be profitable for the small company, the prospect of liability for the large company's lost profits or good will that might result from an interruption in operations caused by faulty software could be staggering. The stakes could be far too high for a small software company.

With little articulation of its reasoning, the Ninth Circuit has deviated from a strict reading of Section 2-719.

A good case to begin with is the Ninth Circuit's decision in *S.M. Wilson & Co. v. Smith International, Inc.* In *Wilson*, a contract was entered into whereby the seller agreed to design, build and deliver a rock tunnel boring machine for $550,000.00. The machine failed to operate properly, despite the seller's attempts to fix it, whereupon the buyer sued for consequential damages. The contract contained an express warranty that the machine would be free of defects in material and workmanship. In addition, the warranty provided the exclusive remedies of repair or replacement of defective parts, and excluded seller's liability "for any loss or damage resulting, directly or indirectly, from the use or loss of use of the machine." Although the machine was never repaired or replaced under the terms of the warranty, and thus the exclusive remedies failed, the court left the consequential damage limitation intact. Holding that the inability of the seller to cure the defect did constitute a failure of the essential purpose of the limited remedies,

---

122. Cohen, supra note 8.
123. RRX Indus., Inc. v. Lab-Con, Inc., 772 F.2d 543, 550 (9th Cir. 1985) (Norris, J., dissenting).
124. 587 F.2d 1363 (9th Cir. 1978).
125. Id. at 1366.
126. Id.
127. Id. at 1372.
128. Id.
the court went on to conclude that the proper measure of damages was the difference between the value of what the buyer should have received and the value of what he got. Unfortunately for the plaintiff buyer, he did not include a request for such "general damages" in his complaint, and thus wound up with nothing.

The factors which influenced the court's ruling included the relatively equal bargaining power of the parties in negotiating an allocation of their risks of loss, the complexity of the machine (most likely indicating the practicalities of shifting the risk), and the fact that the seller "did not ignore his obligation to repair." These factors combined to convince the court that the risk allocation in this case was a legally and socially acceptable arrangement. In other words, under these circumstances, the appropriate measure of damages was deemed to be that prescribed by Section 2-714(2) — the monetary equivalent of the benefit of Wilson's bargain.

It seems that the buyer in Wilson got some use out of the boring machine, albeit not to the level of performance bargained for. The machine "bored at a rate slower than the expected 2.5 feet per hour, overheated, broke down, and wore out blades faster than had been projected." The inability of the seller to repair the defects, according to the court, caused the buyer to lose "a substantial benefit of his bargain," yet "[t]he default of the seller was not so total and fundamental as to require that its consequential damage limitation be expunged from the contract."

Another Ninth Circuit case, RRX Industries v. Lab-Con, Inc. was contractually similar to Wilson, yet an opposite result was reached as to damages.

RRX involved a negotiated software contract, in which RRX agreed to purchase a system for use in its medical laboratories. Specifically, the software was to perform several simultaneous complex functions, including technical calculations, billing, and accounting. The contract contained an exclusive repair remedy, obligating Lab-Con to correct any "bugs" found to exist, and also limited Lab-Con's liability to the purchase price of the system. The

129. Id. at 1375.
130. Id.
131. Id. at 1368.
132. Id. at 1375.
133. Id.
134. 772 F.2d 543 (9th Cir. 1985).
136. The clause provided:
software developed numerous "bugs," which Lab-Con was unable to repair. RRX sued for general and consequential damages. The court sided with the buyer.

In an attempt to evince some understanding of the distinction between Sections 2-719(2) and (3), the appellate court confusingly stated:

"[S]ince the defendants were either unwilling or unable to provide a system as represented, or to fix the "bugs" in the software, these limited remedies failed of their essential purpose. . . . This is a finding that both limited remedies failed of their essential purpose. The trial judge did not state that because the repair remedy failed, the limitation of damages provision should not be enforced. (Emphasis in original.)"137

The court was apparently of the opinion that Lab-Con's default in this case was "total and fundamental" — its code for: All damages allowed. That this is the language of unconscionability is suggested by the court's further comment that U.C.C. Section 2-719(2) "provides an independent limit [upon the ability of a seller to exclude consequential damages] when circumstances render a damages limitation clause oppressive and invalid." (Emphasis added.)138

The reasoning chosen by the court in RRX is unfortunate, because it fosters misunderstanding about the relationship between Sections 2-719(2) and (3). The court speaks the language of unconscionability, while dealing with the inability of the seller to effectuate the exclusive remedy — a reference to the failure of the remedy to fulfill its essential purpose.

Even if the court had appropriately analyzed the Code's provisions (by separately scrutinizing them), why was the general measure of damages — the difference in value between the program as warranted, and what RRX received (or, in this case, the contract price) — inadequate? In other words, why was the court willing to upset a bargained-for allocation of risk?

The facts indicate that, along with the basic software system, RRX was to receive a considerable amount of technical support and

137. Id. at 547.
138. Id.
additional program capabilities. According to the District Court's findings of fact, Lab-Con was to provide maintenance, cables and connections, two more software functions, timely installation, and "adequate" training.139 One can only surmise that, having failed to provide these support services, RRX was deprived not only of a substantial benefit of its bargain, but of any bargain at all. According to the District Court:

Defendant's breaches...prevented RRX from receiving what it had bargained for — a bug free, well maintained, complete laboratory software system, that would permit it to reliably and efficiently automate its laboratory. There were continual bugs in the result report portion of the program as well as a total failure of the software to provide Medi-Cal billing and provide physical billing. As a result, RRX had to expend considerable man-hours manually generating the bills the system was supposed to generate. As a result of the Lab-Con system's failure to meet RRX's billing needs, the system was of no practical value to RRX. (Emphasis added.)140

Consequentials awarded in RRX were for employee and executive overtime in attempting to rectify the program's problems, and such "additional costs" as long-distance telephone expenses.141 While the risk allocation was valid at its inception, to the extent that RRX agreed to shoulder the risk of consequential loss while repairs were made, it is reasonable to suspect that the court disfavored an apparent disappointment of the buyer's basic assumptions.142 In other words, it is unlikely that RRX in fact agreed to assume liability for "open-ended consequential losses."143

There was no evidence before the court in RRX regarding the relative sophistication of the bargaining parties. It is possible, however, that equitable solutions were sought to remedy a perceived knowledge gap. If this were a first-time effort by RRX to automate its laboratory, then perhaps Lab-Con was in the best position to alleviate the buyer's consequential losses. The detailed listing of support services in the contract seems to indicate a great deal of reliance upon the seller's superior knowledge of the system.144

---

140. Id. at 92.
141. Id. at 93. The contract price was $40,866.66. Total damages awarded amounted to $48,225.05. The fight on appeal was over the difference ($7,456.39). RRX, 772 F.2d at 548.
143. Id.
144. See RRX, No. CV-82-5375 at 86-92 (C.D. Cal. Dec. 12, 1983). See also Marzouk,
the other hand, the obvious complexity and uniqueness of this software package bespeaks the commercial reasonableness of placing a cap on the seller’s liability. In the absence of any meaningful discussion by the court in *RRX*, it is difficult accurately to assess its conclusion, other than to alert software vendors to their potential consequential damage exposure for "total and fundamental" software failures.

It will be interesting to see how the Ninth Circuit treats *Geophysical Sys. Corp. v. Seismograph Serv. Corp.*, assuming the case comes before it. This case involved a highly specialized computer system, consisting of both "packaged" and custom software. The system was designed to interpret, manipulate, and output seismic data collected in the field, depending upon criteria selected by the user. The alleged failure was based upon the system's inability "adequately" to process data, primarily at an effective speed. Damages awarded to the plaintiff were substantial.

The warranty in this case provided that the system would be free of defects in materials and workmanship for a specified period, and further provided the limited remedies of repair or replacement. The seller was apparently unable to repair and unwilling to replace the system. Since no special interrogatories were sent to the jury, it must be assumed that the issue of the warranty's essential purpose occupied at least a portion of the deliberations, and was deemed to have failed in this regard.

---


145. "The rule that the agreed-upon allocation of commercial risk should not be disturbed is particularly appropriate where, as here, the warranted item is a highly complex, sophisticated and in some ways experimental piece of equipment. Moreover, compliance with a warranty to repair or replace must depend on the type of machinery in issue. In the case of a multi-million dollar turbine-generator, we are not dealing with a piece of equipment that either works or does not, or is fully repaired or not at all. On the contrary, the normal operation of a turbine-generator spans too large a spectrum for such simple characterizations." *Kearney & Trecker v. Master Engraving*, 527 A.2d 429, 438 (1987) (quoting *American Elec. Power v. Westinghouse Elec.*, 418 F. Supp. 435, 458 (S.D.N.Y. 1976)).


148. *Id.*

149. *Id.*

150. *See supra* notes 48-50 and accompanying text.

151. *Id.*

152. Seismograph had dispatched a permanent on-site technical assistant to help Geophysical keep the system running, but apparently to little avail.

153. Geophysical unsuccessfully sought a refund. *Bulkeley, supra* note 49. Presumably, Geophysical also never received a new system.
Significantly, there was no separate exclusion of consequential damages, and this likely hurt the defendant’s case as to damages. Seismograph unsuccessfully argued that the “repair or replace” provision served to limit its liability by providing Geophysical with its sole and exclusive remedy. The jury was instructed that all damages under the U.C.C. were available where a limited remedy fails of its essential purpose.

There were several contracts binding these parties. For reasons unrelated to this comment, the trial judge permitted only the contract without a consequential damage exclusion to be considered by the jury (the others containing such exclusions). Assuming, arguendo, the success of an equitable reformation of the contract to include the exclusion of consequentials (by prior course of dealing), there are good arguments for a modification of the award.

Geophysical is an oil exploration firm, with extensive knowledge of computerized seismic data interpretation. In fact, an expert user is required to make effective use of the software designed for this purpose. Thus, there does not appear to have been any unconscionable disparity in bargaining positions. Further, these computer programs require a high degree of user intervention and configuration—factors which favor placing the risk of consequential losses on the buyer. More importantly perhaps for the Ninth Circuit is the fact that the programs continued to process data and yield marketable results, though at less-than-expected performance efficiency. In other words, there does not appear to have been a “total and fundamental failure” of the system. In this respect, the case is more similar to Wilson than to RRX.

155. Badel, supra note 147.
156. Id. It is unclear whether this instruction was given in view of the absence of a consequential damage exclusion, nor which jurisdiction’s law it purports to reflect.
158. Id.
159. Id.
160. Id.
161. Id.
162. Id.
163. It should be noted that other issues were argued by Geophysical with considerable success. For example, according to the attorney for Geophysical, the jury was quite responsive to his emphasis on the implied covenant of good faith and fair dealing. Badel, supra note 147.
V. SUGGESTIONS FOR A BALANCED APPROACH

As the status of computer software continues to evolve from that of a time-saving convenience to a necessary commodity, there is every reason to believe that issues of liability for program failures will receive increased attention. It is already becoming evident that software vendors are exposed not only for liability resulting from actual defects in their products, but also for errors in the substantive guidance given by many programs. One example of this is reflected in a recent Revenue Ruling, which concluded that the developer of a computer program used for preparing tax returns may be held liable as an income tax preparer for any errors based upon the program's instructions. In that case, a software developer had designed a program which explained the requirements for each line of a tax form. The user then entered figures based on that information, and the program converted and printed the proper figures for all lines of a tax return. The problem was that the software developer failed to reprogram the software to reflect a change in the tax laws, which resulted in understatements of tax liability by users of the product. The IRS held that the software developer was an income tax preparer, and that he could be liable for the understated taxes if there was a negligent or intentional disregard of IRS rules or regulations. In light of this example, software vendors of these types of programs ought to be aware of the heightened possibility for consequential damage liability.

Given the virtual inevitability of software errors at some point in time, and the ever-increasing number of end-users, it will not be long before the array of fact situations coming before the courts acquire an air of familiarity. The inevitable social and economic costs that accompany sustained battles between consumer protection and industry groups will soon alert state and federal legislators to the need for legal reform in the area of computer software. Such legislation, if written with due regard to the compelling interests of a variety of players, could serve a useful purpose. In the interim, the solution must be an "internal" system of reform, whereby risks can be more equitably distributed and absorbed.

166. Greg & Folk, supra note 164.
167. Id.
168. Id. at 19.
169. See Meeting, supra note 23, at 4.
A. Suggestions for Vendors

One very simple risk management solution, as suggested by the court in *A & M Produce Co. v. FMC Corp.*, would be for vendors to take the "surprise" out of their warranties by ensuring they are read and understood by the customer. This might very well provide the industry with incentive to compete for customers by providing clearly written and fair warranties; they would become marketing issues as opposed to legal issues. As software grows in complexity, and consumers become more sophisticated in terms of what they expect from the products, prudent management would seem to dictate a higher level of sensitivity to the need for honest sharing of vital information.

One software engineer has suggested that warranties describe what the product will not do, as well as what it may be expected to do. The more information the consumer has about a product's capabilities - the more notice he has of what to expect and what not to expect - the more justified will be a risk-shifting warranty provision. If a software manufacturer wishes to be fairly treated by a court, he must imbue himself with the perception that he has been fair with his customers. It is not the province of the courts to dictate the substance of warranties, but only to pass judgement as to their fairness and effectiveness. The problems of unconscionability and warranty failures are particularly evident where software is mass marketed, and standard, non-negotiated warranties are provided. These problems can be ameliorated if substantial and relevant information has been shared with the consumer.

Naturally, software should perform the way consumers expect that it will. These expectations, however, are fully controlled by the information disseminated by the manufacturers; they are the one's who create excitement about new program achievements. If the producers of the software feel that their product is evolutionary and incomplete (which may be inevitable in an industry where new technologies are constantly defining enhanced capabilities), then efforts to convey this to the buyer should be vigorously pursued. Software documents should include the caveat that comprehensive programs are not to be exclusively relied upon due to their inherently complex nature. In this regard, consumers ought to be made aware of their roles and responsibilities in an evolutionary market. Users must be told that, to ensure accuracy, computer generated information re-

---

170. 135 Cal. App. 3d at 490, 186 Cal. Rptr. at 125.
171. *Hearing, supra* note 20, at 164 (comments of Ronald Braithwaite, Rising Star Industries).
quires independent verification for the first several months of operation, particularly in situations where it is known that errors will cause serious commercial losses. In addition, users must be expressly and strenuously encouraged to report recurring errors, which provides vital detection information for subsequent repairs. Such "disclaiming" language should serve the added purpose of narrowing the manufacturer's liability. The user in possession of this kind of information may fairly be regarded as "informed" and thus more in control of his decision to accept a risk of loss.

Vendors should not underestimate the gratitude of an informed consumer, nor the willingness of a court to reward for divulgence in a commercial or consumer transaction. A carefully worded warranty document need not deter a potential purchaser for fear of program error. A simple explanation that the program in question has been fully tested to the maximum extent possible should suffice as a balance against information regarding the risks inherent in relying on a technologically sensitive product.

With respect to risk management, vendors can take greater measures to lessen the prospect of program failures by expanding the testing phase of program development. While it remains virtually impossible to test a commercial computer program for every conceivable application by a user, including the panoply of hardware and peripherals it will inevitably be subjected to, those functions for which a program is primarily designed can be submitted to an independent testing organization, which can then certify by means of a visible seal that the program is reliable for particular specifications. Vendors may then set out these specifications, and warrant that the product will perform in accordance therewith. The risk that a program will fail if used in a manner outside the program's specifications may then be justifiably shifted to the user. Note here that failure to take such testing precautions might subject the manufacturer to greater liability in any event.

This suggestion may be subject to the criticism that such independent "seals of approval" would nullify the value inherent in name-brand goods. A large part of a company's reputation is derived from its ability to develop and market quality products, thereby inducing the allegiance of customers. The fact that a product has been independently certified as operationally sound merely reaffirms the abilities of the software developer, not the one who tested it. Consistently favorable testing results from a reliable and

---

trustworthy testing organization would reflect most favorably upon
the name that produced the product. If the idea of independent
testing is still unpalatable to a manufacturer, then efforts should be
made to concentrate substantially on in-house testing to achieve
similar quality results, and should be used as competitive marketing
tools.

In addition to providing significant information and vigorously
pursuing quality standards, software manufacturers must provide
fair and adequate remedies to the consumer in the event of a pro-
gram failure. Judicial acceptance of warranties which completely
shift all risk of loss to a consumer, in a mass-market arrangement, is
extremely unlikely in virtually any jurisdiction.

If a manufacturer wishes to preserve the option of insulating
itself from liability for consequential damages, it must pay signifi-
cant attention to the way in which the warranty is drafted. The
previous discussion of judicial analysis on this question\textsuperscript{173} should
serve to highlight the importance of fairness in this regard. Indus-
try professionals must move away from erring on the side of total
risk allocation to the buyer, and begin offering reasonable remedies
in the event of program failures. In addition to providing exclusive
remedies of repair or replacement, which we have seen may not al-
ways guarantee the integrity of a consequential damages exclusion,
additional remedies should be offered, such as enhanced support
services. Conscionability problems could be significantly mitigated
with each additional remedy provided by a warranty.

B. Suggestions for End-Users

The buyers of software programs must take a fair measure of
responsibility for their decisions to rely upon these complex prod-
ucts. There is much opportunity for mitigation of losses with which
users may be charged, as software continues to proliferate, and
common understanding of the risks increases. The concepts of
computer backup and disaster recovery agreements by computer-
dependent users should begin to take hold.\textsuperscript{174} These types of agree-
ments may take several forms. For example, there are reciprocal
agreements whereby one company may undertake to process the
billing or payroll of another in the event that the latter temporarily
loses use of its computer.\textsuperscript{175} There are also disaster recovery ven-

\textsuperscript{173} See supra notes 88-163 and accompanying text.
\textsuperscript{175} Id. at 211.
dors, whose vocation it is to provide "empty shells" — buildings which contain only computer equipment of various sorts, which can be accessed by users who have lost use of their own equipment.\textsuperscript{176} Costs of maintenance can be managed by forming "clubs" of users, or through intermittent lease arrangements with independent third-party vendors.\textsuperscript{177} It may be that if such cooperative arrangements become institutionalized and wide-spread, they may be looked upon by courts as viable methods of loss mitigation, and thus would serve a purposeful role in limiting the liability of the software vendors. In other words, buyers ought to be aware of the fact that they may be found to have been in a better position than the manufacturer to absorb a loss. The buyer should thus expend at least minimal efforts exploring these options.

Another prudent protective measure a computer-dependent user should consider is the acquisition of processing insurance. With such coverage, a user who is vulnerable to commercial loss in the event of a program failure may be assured of faster recovery, and be spared the expense of litigating a claim with a software manufacturer. Again, the user must at least consider this option, since he may reasonably be viewed as having been in the best position to obtain the coverage — a factor which cuts in favor of limiting the liability of the manufacturer.

VI. CONCLUSION

If there is one conclusion to be drawn, it is that fairness is the key to stability in a market context such as this. Vendors must be sensitive to the fact that their software products are evolving from being mere tools to the point of substantial integration into the lives of users (and beneficiaries of software use), and users must realize that they are making conscious, risk-taking decisions by relying on incalculably complex technology. The potential legal consequences of ignoring this balance can be staggering. Software vendors would have a short life span if forced to act as insurers, and consumers would unfairly suffer if foreclosed from proper legal remedies for significant harms. The key is a more aggressive undertaking on the part of software manufacturers to share relevant information, and a more prudent undertaking on the part of software users to acquire the information necessary to satisfy themselves that their expectations will be adequately met.

\textsuperscript{176} Id. at 212.
\textsuperscript{177} Id.