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APPLYING STRICT PRODUCTS LIABILITY TO COMPUTER SOFTWARE

"Hal, I am in command of this ship. I order you to release the manual hibernation control."

"I'm sorry, Dave, but in accordance with special subroutine C1435-dash-4, quote, When the crew is dead or incapacitated, the onboard computer must assume control, unquote. I must, therefore, overrule your authority, since you are not in any condition to exercise it intelligently."¹

I. INTRODUCTION

The advent of any useful tool can cause cultural change. As one of our most powerful tools, the computer has created transformations in our culture that are hard to grasp in their entirety.² One of these transformations is our inescapable reliance upon computers. As a result of our dependency, when computer systems malfunction, severe consequences may follow.

Such malfunctions may affect us on many levels, but when malfunctions occur in the context of traffic control, medical services, or the workplace, the results are sometimes devastating. Imagine an air traffic controller, guided by a computer system, directing an airliner to land where another plane is currently taking off. Visualize a computer system directing a subway train onto tracks already occupied by another train. Picture an X-ray technician who relies on output from a malfunctioning computer system and administers an overdose of radiation. Listen to the horror of the physician who depends on the computer system to monitor a patient's vital signs and when the system malfunctions, is not given

1. ARTHUR C. CLARKE, 2001 144-45 (1968).

2. Roy N. Freed, *Products Liability in the Computer Age*, 12 FORUM 461 (1977).

Here are some representative [sic] types of computer applications to be aware of: A wide variety of industrial processes are operated automatically by means of computers, such as oil refining, steel making, chemical manufacture, and food production. Increasingly, medical procedures are being controlled by computers, including fully-automatic intensive care units and devices for monitoring such activities as the administration of anesthesia and providing constant reports to medical personnel. Medical laboratories perform many analyses automatically by computers. Bridges and other structures are designed by means of computer. Transportation vehicles are controlled by computers.

Id. at 464.

adequate warning of the patient's condition. Imagine the worker subjected to nuclear radiation because the monitoring computer system has malfunctioned.³ These potential tragedies raise important liability questions.

When such computer breakdowns occur, the potential theories of recovery are based on contract or tort law. To claim breach of contract, the victim must allege either a breach of express warranty⁴ or a breach of implied warranty.⁵ However, as several commentators have pointed out, there are serious drawbacks to both approaches.⁶ First, the plaintiff must satisfy the requirements of privity.⁷ In most of the scenarios above, the victim did not purchase the defective software from the manufacturer and will, therefore, have a difficult time proving privity of contract existed between the victim and the manufacturer.⁸ A second difficulty is the presence of exculpatory clauses, which may act to preclude any recovery.⁹ Finally, there is some question as to whether the UCC applies

3. These examples are substantially based on Susan Nycum, *Liability for Malfunction of a Computer Program*, 7 RUTGERS COMPUTER & TECH. L.J. 1 (1979). See generally Michael C. Gemignani, *Product Liability and Software*, 8 RUTGERS COMPUTER & TECH. L.J. 173 (1981). Gemignani writes that the scenarios predicted by Nycum are probably "too conservative." *Id.*

If anything, Ms. Nycum's list of hypothetical horrors is too conservative, and it need not have been limited to hypotheticals. Computer problems have already caused near misses in the air between crowded passenger jets, the closing of nuclear plants, and the serious waste of fuel during the last critical moments of Skylab's descent; this fuel might have been needed to alter the course of re-entry, had that huge satellite been on a collision course with populated areas. Indeed, a computer failure caused the false alert of another world war.

Id. (citations omitted).

4. U.C.C. § 2-313 (1989). This code section describes the various ways that express warranties can be created. See John M. Conley, *Tort Theories of Recovery Against Vendors of Defective Software*, 13 RUTGERS COMPUTER & TECH. L.J. 1, 5-6 (1987).

5. U.C.C. § 2-314, which provides for an implied warranty as to merchantability. See Conley, *supra* note 4, at 5-6.

6. See Nycum, *supra* note 3, at 2-8 (1979); Kerry M. Smith, *Suing the Provider of Computer Software: How Courts Are Applying U.C.C. Article Two, Strict Tort Liability, and Professional Malpractice*, 24 WILLAMETTE L. REV. 743, 745-55 (1988); Note, *Computer Programs as Goods Under the U.C.C.*, 77 MICH. L. REV. 1149 (1979); Bonna L. Horovitz, *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); Lawrence H. Reece III, *Defective Expert Systems Raise Personal Injury Liability Issues*, NAT'L L.J., Oct. 12, 1987, at 24.

7. See *Thomas v. Winchester*, 6 N.Y. 397, 408 (1852) (citations omitted). But see *infra* note 8.

8. The requirement of privity for actions based on implied or express warranties has seen some erosion. See Nycum, *supra* note 3, at 4 (discussing the decline of the privity requirement in express warranty actions); *Goldberg v. Kollsman Instrument Corp.*, 191 N.E.2d 81 (N.Y. 1963); *Greenberg v. Lorenz*, 173 N.E.2d 773, 774-75 (N.Y. 1961); *Henningsen v. Bloomfield Motors, Inc.*, 161 A.2d 69 (N.J. 1960). See also William L. Prosser, *The Fall of the Citadel (Strict Liability to the Consumer)*, 50 MINN. L. REV. 791, 791-94 (1966).

9. Conley, *supra* note 4, at 7-8. The effect of U.C.C. § 2-316 and U.C.C. § 2-202 is that a written contract with a clause that purports to exclude express warranties and an integration clause will act to exclude express warranties. *Id.* at 7 n.38.

to transactions for computer software.¹⁰ As a result of these difficulties, victims often turn to tort theories of recovery.

Various tort theories have either been suggested by commentators¹¹ or have been tried in the courts, including fraud,¹² negligence,¹³ and malpractice.¹⁴ The limitations of these causes of actions have prompted some authors to suggest the expansion of strict liability to cover software manufacturers.¹⁵

In the past, software manufacturers have been excluded from the principles of strict products liability because software evades the label of product due to its "intangible nature."¹⁶ Such avoidance, however, may be short lived. In *Winter v. G.P. Putnam's Sons*,¹⁷ the Ninth Circuit indicated in dicta that it might consider expanding the doctrine of strict products liability to include software manufacturers.¹⁸ This pronouncement has caused an uproar among software manufacturers.¹⁹

This comment will examine the possible expansion of strict products liability to software manufacturers. Within limits, strict liability for computer software manufacturers is desirable. Such expansion, however,

10. The UCC applies to "transactions in goods." U.C.C. § 2-102. U.C.C. § 2-105(1) defines "goods" as:

[A]ll things (including specially manufactured goods) which are movable at the time of identification to the contract for sale other than the money in which the price is to be paid, investment, securities (Article 8) and things in action. "Goods" also includes the unborn young of animals and growing crops and other identified things attached to realty as described in the section on goods to be severed from realty (Section 2-107).

Id. See also Smith, *supra* note 6, at 745-55; Conley, *supra* note 4, at 2-4; Note, *supra* note 6, at 1149-50; Horovitz, *supra* note 6, at 129-30. Compare *Data Processing Serv., Inc. v. Smith Oil Corp.*, 492 N.E.2d 314 (Ind. 1986) (holding that defendant bargained to receive plaintiff's skill and not the end result which happened to be in the form of a physical medium) with *Triangle Underwriters, Inc. v. Honeywell, Inc.*, 457 F. Supp. 765 (E.D.N.Y. 1978) (holding that contract for the installation of computer software was primarily a contract for goods and the services provided were incidental), *aff'd in part and rev'd in part*, 604 F.2d 737 (2d Cir. 1979), and *RRX Indus., Inc. v. LAB-CON, Inc.*, 772 F.2d 543 (9th Cir. 1985) (holding that UCC applies to a computer software system contract).

11. See, e.g., Conley, *supra* note 4, at 11-32.

12. E.g., *Black, Jackson & Simmons Ins. Brokerage, Inc. v. I.B.M. Corp.*, 440 N.E.2d 282 (Ill. App. Ct. 1982); see Conley, *supra* note 4, at 20-23.

13. See Conley, *supra* note 4, at 15-20.

14. E.g., *Chatlos Sys., Inc. v. National Cash Register Corp.*, 479 F. Supp. 738 (D.N.J. 1979), *rev'd on other grounds*, 635 F.2d 1081 (3d Cir. 1980), *aff'd after remand*, 670 F.2d 1304 (3d Cir. 1981), *cert. dismissed*, 457 U.S. 1112 (1982).

15. Note, *Computer Software and Strict Products Liability*, 20 SAN DIEGO L. REV. 439 (1983); Gemignani, *supra* note 3.

16. See *infra* notes 64-112 and accompanying text.

17. 938 F.2d 1033 (9th Cir. 1991). See *infra* notes 101-12 and accompanying text.

18. *Winter*, 938 F.2d at 1036.

19. See Victoria Slind-Flor, *Ruling's Dicta Causes Uproar; Supplier Pulls Software*, NAT'L L.J., July 29, 1991, at 3.

should not arbitrarily include all software manufacturers and a consistent method should be used to determine which manufacturers should be held strictly liable for the software they create. The development of a new approach to the classification of software as either a product or a service²⁰ is necessary to the consistent application of strict products liability.

II. NATURE OF COMPUTERS AND COMPUTER SOFTWARE

In order to evaluate any method of classifying software as a product or service, some knowledge of computer systems is necessary. At its most basic level, a computer is an electronic machine that reads information, processes it, and reports the output. It is composed of hardware and software. Hardware is generally considered the physical parts of the computer such as input devices, the central processing unit, storage devices, and output devices.

This comment focuses on the legal significance of the other component of the computer system, the software. Software consists of sets of instructions (programs) that cause the hardware components to process the input into a form of output. It is important to understand that this output does not have to be physical in the sense that you can actually touch it. For example, the physician that monitors the patient with a computer may receive the output solely on the computer screen. In fact, many software programs merely tell other programs what to do and produce no physical product.

Computer software is usually designed to do a specific task and goes through several stages of development before it is complete. In one of the first stages, the programmer meets with the designer²¹ to determine what the program should be able to accomplish.²² This process occurs continuously until the program is finished. The programmer then charts ideas for accomplishing the goals, writes the program down, and codes it into a tangible medium. Errors can occur at any point in this process. Therefore, the next process is called "debugging." The designer tests the program using simulated input to try to locate any errors, or "bugs," contained in the program. Frequently, this is the most time consuming,

20. The applicability of the strict products liability doctrine hinges upon whether the transaction is for products or services. *See infra* part III.C.1.

21. One person may be both the programmer and the designer.

22. For example, in the production of a program that monitors the vital signs of a patient, the physician would explain to the programmer what measurements are relevant, the acceptable ranges, and in what combination.

and therefore potentially the most expensive, part of the process.²³ When the debugging is deemed complete, the program is sold to the end user.

III. STRICT LIABILITY

This section will include a brief history of the doctrine of strict products liability, the policy reasons supporting the doctrine, and the elements of strict products liability.

A. History

Strict products liability is a recently expanding field of law and represents a departure from the common law view. Prior to the doctrine of strict products liability, the leading common law case, *Winterbottom v. Wright*,²⁴ applied the concept of *caveat emptor*—let the buyer beware. *Winterbottom* held that direct privity between the plaintiff and defendant was necessary to recovery.²⁵ This case reflected the nineteenth century social view that manufacturers and vendors should not be held responsible for transactions at a distance involving numerous unknown consumers.²⁶ This social view has since changed and evolved into modern strict liability.

Ten years after the *Winterbottom* decision, the first substantial step in that evolution occurred in *Thomas v. Winchester*.²⁷ In *Thomas*, the plaintiff purchased medication to give to his sick wife.²⁸ However, the medication was actually mislabelled poison and as a result the wife became seriously ill.²⁹ The plaintiff brought suit against the distant manufacturer and won despite the absence of privity.³⁰ The *Thomas* court carved out an exception to the privity requirement for products that were

23. See generally Gemignani, *supra* note 3, at 185.

24. 152 Eng. Rep. 402 (1842).

25. The plaintiff, a mail coach driver, was injured by the defendant's inadequate repairs. However, the defendant contracted to repair the mail coach for the plaintiff's employer and not for the plaintiff driver. Since there was no privity of contract between the plaintiff and the defendant, the court found that the plaintiff did not have a cause of action against the defendant. *Id.* at 403. This case has been described as a "fishbone in the throat of the law." W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 96, at 681 (5th ed. 1984).

26. *Winterbottom*, 152 Eng. Rep. at 403.

27. 6 N.Y. 397, 408 (1852).

28. *Id.* at 405.

29. *Id.* at 398.

30. See *id.* at 410-11.

inherently dangerous.³¹ This decision led to other inquiries which further refined the definition of an imminently or inherently dangerous product.³²

Attempts to define inherently dangerous became unimportant as the evolution progressed.³³ In *MacPherson v. Buick Motor Co.*,³⁴ Justice Cardozo "struck through the fog of the 'general rule' and its various exceptions."³⁵ Cardozo expanded the definition of an inherently dangerous product to any item that is foreseeably dangerous if a component part of it was defective.³⁶ While *MacPherson* purported to simply expand the definition of inherently dangerous products, it actually had the effect of swallowing up the inherently dangerous rule stated in *Thomas*.³⁷

Strict liability evolved further in the leading case,³⁸ *Henningsen v. Bloomfield Motors, Inc.*,³⁹ which further eroded the notion that plaintiffs

31. [T]he distinction is recognized between an act of negligence imminently dangerous to the lives of others, and one that is not so. In the former case, the party guilty of the negligence is liable to the party injured, whether there be a contract between them or not; in the latter, the negligent party is liable only to the party with whom he contracted, and on the ground that negligence is a breach of contract.

Id. at 410.

32. See, e.g., *Coca Cola Bottling Works v. Shelton*, 282 S.W. 778 (Ky. 1926) (beverage container); *Pillars v. R.J. Reynolds Tobacco Co.*, 78 So. 365 (Miss. 1918) (chewing tobacco); *Liggett & Myers Tobacco Co. v. Cannon*, 178 S.W. 1009 (Tenn. 1915) (chewing tobacco); *Stone v. Van Noy R.R. News Co.*, 154 S.W. 1092 (Ky. 1913) (beverage container); *Armstrong Packing Co. v. Clem*, 151 S.W. 576 (Tex. Civ. App. 1912) (soap); *Hasbrouck v. Armour & Co.*, 121 N.W. 157 (Wis. 1909) (soup).

33. "These [cases that developed the inherently dangerous standard] are now largely of purely historical interest." KEETON ET AL., *supra* note 25, § 96, at 682.

34. 111 N.E. 1050 (N.Y. 1916).

35. The plaintiff, *MacPherson*, was injured when the spokes of a defective wheel crumbled, throwing the plaintiff from the car. The plaintiff sued the car manufacturer even though the plaintiff did not purchase the car directly from the defendant and even though the defendant did not actually manufacture the wheel. *Id.* at 1051. The court held that the defendant made a representation of safety by offering the automobile for sale and therefore assumed a responsibility to the plaintiff. *Id.* at 1055. This responsibility rested upon the relation arising from the purchase and not from a relationship based upon the contract. See KEETON ET AL., *supra* note 25, § 96, at 683.

36. Justice Cardozo stated:

We hold then, that the principle of *Thomas v. Winchester* is not limited to poisons, explosives, and things of like nature, to things which in their normal operation are implements of destruction. If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequences to be expected. If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is under a duty to make it carefully.

MacPherson, 111 N.E. at 1053.

37. KEETON ET AL., *supra* note 25, § 96, at 683.

38. *Id.* § 97, at 690.

39. 161 A.2d 69 (N.J. 1960).

needed to be in privity with the defendant manufacturers. In *Henningesen*, the defendant car manufacturer and the defendant dealer were held strictly liable for a defective automobile to the wife of the actual purchaser.⁴⁰ This case opened the floodgate for other claims that overturned the requirement of privity.⁴¹

The erosion of the privity requirement continued in *Greenman v. Yuba Power Products, Inc.*,⁴² which involved a defective power tool.⁴³ In an opinion by Chief Justice Traynor,⁴⁴ the court announced the *Greenman* rule,⁴⁵ which allowed for the imposition of strict liability on the manufacturer without the necessary establishment of a breach of express warranty under the Uniform Sales Act.

This concept of strict liability was formalized in the *Restatement (Second) of Torts*⁴⁶ and has been widely adopted in over thirty-two

40. The *Henningsen* court stated:

[W]e hold that under modern marketing conditions, when a manufacturer puts a new automobile in the stream of trade and promotes its purchase by the public, an implied warranty that it is reasonably suitable for use as such accompanies it into the hands of the ultimate purchaser. Absence of agency between the manufacturer and the dealer who makes the ultimate sale is immaterial.

Id. at 84.

41. *E.g.*, *Simpson v. Powered Prods., Inc.*, 192 A.2d 555 (Conn. C.P. 1963) (applying strict liability to a power golf cart); *B.F. Goodrich Co. v. Hammond*, 269 F.2d 501 (10th Cir. 1959) (applying strict liability to a tire manufacturer). See KEETON ET AL., *supra* note 25, § 97, at 690.

42. 377 P.2d 897 (Cal. 1962).

43. In *Greenman*, the plaintiff watched a retailer's demonstration of a Shopsmith and read the brochure prepared by the manufacturer. His wife purchased the Shopsmith as a gift and while the plaintiff used the product, a piece of wood flew out of the Shopsmith and struck him on the head, causing the plaintiff serious injuries. After ten months, the plaintiff gave written notice to the manufacturer and the retailer of violations of the warranty. He then filed suit against both the retailer and the manufacturer for negligence and breach of warranty. The manufacturer was held liable for \$65,000 at trial and appealed to the Supreme Court of California. *Id.* at 898-99.

44. It is interesting to note that Chief Justice Traynor served as an advisor to the writers of RESTATEMENT (SECOND) OF TORTS § 402A (1965). *Ritter v. Narragansett Elec. Co.*, 283 A.2d 255, 262 (R.I. 1971).

45. 377 P.2d at 900.

A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being. Recognized first in the case of unwholesome food products, such liability has now been extended to a variety of other products that create as great or greater hazards if defective.

Id. (citations omitted).

46. RESTATEMENT (SECOND) OF TORTS § 402A (1965) [hereinafter RESTATEMENT]:

§ 402A. Special Liability of Seller of Product for Physical Harm to User or Consumer

(1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if

(a) the seller is engaged in the business of selling such a product, and

(b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.

jurisdictions.⁴⁷ The *Restatement* rule is the clearest statement of strict liability and is considered the fairest approach to this area.⁴⁸

B. Policy Reasons Supporting Strict Products Liability

There are several policy reasons that support the imposition of strict products liability upon distant manufacturers.⁴⁹ These policy reasons are critical to any decision on whether strict products liability should be applied to computer software.

1. Loss Spreading

Risk of loss for personal injury and property damage resulting from a defective product should be borne by the manufacturers because they are in a better position to absorb the loss by distributing it as a cost of doing business.⁵⁰ It is assumed that manufacturers pass this cost on to the consumers in the form of higher prices and either maintain a cash reserve that has been set aside for resolutions of any claims or, more likely, take out insurance policies to cover any claims. This approach ensures that the costs of an injury do not fall on the unsuspecting injured consumer. In this manner, those who are injured are adequately compensated while the cost of such compensation is allocated among those that benefit from the product.⁵¹ This particular policy reason may reflect

(2) The rule stated in Subsection (1) applies although

(a) the user has exercised all possible care in the preparation and sale of his product, and

(b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.

Id.

47. The following jurisdictions have adopted the *Restatement*: Arizona, Colorado, Connecticut, District of Columbia, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Maryland, Minnesota, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virgin Islands, Washington, Wisconsin, and Wyoming. AMERICAN LAW OF PRODUCTS LIABILITY § 16:9, at 21-23 (3d ed. 1987); KEETON ET AL., *supra* note 25, § 98, at 694 ("nearly all states have adopted some version of [the *Restatement* § 402A]").

48. For an explanation of the policy reasons behind the *Restatement* and a list of the necessary elements, see *infra* part III.

49. *E.g.*, *Escola v. Coca Cola Bottling Co.*, 150 P.2d 436, 440-43 (Cal. 1944) (Traynor, J., concurring); RESTATEMENT, *supra* note 46, § 402A cmt. c; KEETON ET AL., *supra* note 25, § 98, at 692-94; John Riper, *Strict Liability in Hybrid Cases*, 32 STAN. L. REV. 391, 393 (1980); William R. Russell, *Products and the Professional: Strict Liability in the Sale-Service Hybrid Transaction*, 24 HASTINGS L.J. 111, 117 (1972) (citation omitted); AMERICAN LAW OF PRODUCTS LIABILITY § 16:4, at 15-17 (3d ed. 1987).

50. See RESTATEMENT, *supra* note 46, § 402A cmt. c; KEETON ET AL., *supra* note 25, § 98, at 692-93.

51. L. Nancy Birnbaum, *Strict Products Liability and Computer Software*, 8 COMPUTER/L.J. 135, 141 (1988).

our social climate of an interdependent technological society.

2. Manufacturer's Representation of Safety

The difficulties involved in discovering potential flaws in a product force the consumer to rely upon the representations of the manufacturer.⁵² Under strict products liability, a manufacturer assumes a duty of care in placing the product in the stream of commerce.⁵³ This policy reflects the reality that consumers rely upon the expertise and perhaps the reputation of the manufacturer.

3. Safety Incentive

Because the manufacturer has control over product quality, strict products liability may persuade manufacturers to exercise greater caution in producing their goods.⁵⁴ In this manner, manufacturers may realize that it is more cost effective to invest time and money into testing products than into paying claims for products that were rushed to market. For computer software manufacturers, this means investing more time in debugging. However, because of the very nature of computer software, it is nearly impossible to detect and prepare for every situation that might arise.⁵⁵ Computers are used to do tasks that humans perform, and in that capacity they attempt to replicate human intuition and judgment. While humans can respond to unforeseeable circumstances, computers lack such a capacity. If circumstances occur that are outside of the computer's foreseeable, preprogrammed parameters, the computer program's response will often be unpredictable. A computer program is only as defect-free as its programmer is prescient. At best, defects can only be minimized.

52. *Escola*, 150 P.2d at 443.

As handicrafts have been replaced by mass production with its great markets and transportation facilities, the close relationship between the producer and consumer of a product has been altered. Manufacturing processes, frequently valuable secrets, are ordinarily either inaccessible to or beyond the ken of the general public. The consumer no longer has means or skill enough to investigate for himself the soundness of a product, even when it is not contained in a sealed package, and his erstwhile vigilance has been lulled by the steady devices such as trade-marks.

Id.

53. RESTATEMENT, *supra* note 46, § 402A cmt. c.

54. *Id.*; KEETON ET AL., *supra* note 25, § 98.

55. See *Chatlos Sys., Inc. v. National Cash Register Corp.*, 479 F. Supp. 738 (D.N.J. 1979) (expert testimony that 40% of all computer installations fail), *rev'd on other grounds*, 635 F.2d 1081 (3d Cir. 1980), *aff'd after remand*, 670 F.2d 1304 (3d Cir. 1981), *cert. dismissed*, 457 U.S. 1112 (1982).

C. *Requirements of Strict Products Liability*

1. Unreasonably Dangerous Product Must Be in a Defective Condition

According to the *Restatement (Second) of Torts*, the product under consideration must be unreasonably dangerous to the ultimate consumer.⁵⁶ Essentially, there are three instances where a product may be unreasonably dangerous because of a defect. First, a product may be considered unreasonably dangerous when there is a flaw in the product that existed when the defendant sold it.⁵⁷ In the context of computer software, such an instance would arise when a programmer fails to code the program properly, leaving errors in the program.⁵⁸ Second, a product can be unreasonably dangerous due to a failure of a producer to adequately warn of any hazards.⁵⁹

Finally, a product can be unreasonably dangerous if it is defectively designed.⁶⁰ A product with a design defect performs exactly as the manufacturer intended but the product does not perform as safely as the customer reasonably expects.⁶¹ For computer software, manufacturers should give users adequate information about the limitations of the software and the parameters under which it operates.

2. Defective Product Must Be Used in a Manner Reasonably Foreseeable by the Manufacturer

To recover under strict products liability, the injured plaintiff must have used the product in the normal fashion.⁶² Furthermore, the product must not be defective as a result of any changes made by the consumer. For computer software, this means that for those programs that require user modification, the manufacturer would not be held liable for any injuries that stem from such modifications. Presumably, the manufacturer would be held liable for injuries resulting solely from the unmodified portions of the program.

56. RESTATEMENT, *supra* note 46, § 402A cmt. g. "The rule stated in this Section applies only where the product is, at the time it leaves the seller's hands, in a condition not contemplated by the ultimate consumer, which will be unreasonably dangerous to him." *Id.*

57. KEETON ET AL., *supra* note 25, § 99.

58. Birnbaum, *supra* note 51, at 139.

59. KEETON ET AL., *supra* note 25, § 99.

60. *Id.*

61. Birnbaum, *supra* note 51, at 138.

62. "If the injury results from abnormal handling . . . the seller is not liable." RESTATEMENT, *supra* note 46, § 402A cmt. h.

3. Personal Injury or Property Damage Must Have Been Caused by the Product

If a defective product is the proximate cause of personal injury or property damage, the manufacturer may be held strictly liable. However, purely economic loss cannot be recovered in strict products liability.⁶³ Policy dictates that economic harm should be pursued through other avenues because purely economic harm is not as damaging as either personal injury or property damage.⁶⁴ This exception is an important limit on the usefulness of strict products liability.⁶⁵

4. Sale Must Be of a Product

The major premise of strict products liability is that a *product* is defective. This is important because the policy reasons supporting strict products liability⁶⁶ do not apply with the same force to the sale of services. First, service providers, unlike product manufacturers, are usually

63. KEETON ET AL., *supra* note 25, § 101, at 708.

Where products do not have defects that endanger others, it can be reasonably argued that they cannot be so poor in quality as to be unworthy of sale if the price is right. . . . Historically, therefore, the only tort action available to a disappointed purchaser suffering intangible commercial loss has been the tort action of deceit for fraud and the only contract action has been for breach of a warranty, express or implied. This remains the generally accepted view.

Id. (citations omitted).

64. David A. Hall, *Strict Products Liability and Computer Software: Caveat Vendor*, 4 COMPUTER/L.J. 373, 390 (1983).

Liability without fault is a potentially onerous burden to place on a party, notwithstanding questions of causation. Normally, courts are reluctant to intrude into the dealings of individuals, and would prefer that the parties work out mutually satisfactory compromises on their own. When physical injury occurs there is more at stake than a group of dissatisfied individuals. There is a possibility of widespread societal effects such as pain, trauma, suffering, and fear, in addition to economic effects such as medical costs, insurance fees, lost wages, and business instability. Likewise, destruction of property is more significant than the loss of a bargain. Physical harm, then, is a significant enough consequence that an intrusion into individual liberty in the form of government legislation and adjudication of liability is appropriate.

Id.

65. Conley, *supra* note 4, at 28.

From the perspective of a typical computer plaintiff, the principal shortcoming of § 402A is the requirement of personal injury or physical damage. With few exceptions, courts have declined to permit the recovery of pure economic loss on a strict liability theory. . . . '[T]here is no question that the greater part of the citadel of privity in products liability cases remains intact. With some exceptions, litigants alleging economic loss, instead of personal injury or property damage, are still without any remedy when they lack privity of contract with the defendant.'

Id. (quoting Baz Edmeades, *The Citadel Stands: The Recovery of Economic Loss in American Products Liability*, 27 CASE W. RES. L. REV. 647, 648 (1977)).

66. See *supra* part III.B for a discussion of policy reasons. See *infra* part IV for a discussion of the meaning of product.

in the business of providing expert knowledge to individual customers, which precludes providers from having high volume.⁶⁷ This lack of volume means that the costs of defects are distributed among fewer people. Second, victims of defective service usually deal directly with the service provider and are in a much better position to prove negligence than a victim of a defective product made by some distant manufacturer.⁶⁸ Third, in the sale of services, the consumer is not forced to blindly rely upon the provider's representation about the product, but instead expects the exercise of expert care.⁶⁹ Fourth, the service provider does not have the control that a manufacturer of products does. The provider cannot run a battery of tests in an assembly line to determine if the service is defective.⁷⁰ Additionally, the victim of a defective service is usually in privity of contract with the service provider and can resolve the issue in one suit under a contract recovery theory.⁷¹

Given these different policy justifications, a plaintiff pursuing strict products liability must satisfy the threshold requirement of establishing that the item in question is a product. This raises the critical question: Is computer software a product?

IV. IS COMPUTER SOFTWARE A SALE OF A PRODUCT OR A SERVICE?

The *Restatement* provides examples of sales of products,⁷² but this list is useless when considering "hybrid" items like computer software. A brief tour of the history of the sales/service dichotomy and relevant statutory definitions will help determine whether computer software is a product or a service.

A. *Historical Case Law Treatment of Sales v. Services*

1. English Cases

A distinction between sales and services first developed in England in the context of the Statute of Frauds,⁷³ which was originally intended to protect defendants from false claims.⁷⁴ In England, contracts for the

67. See *La Rossa v. Scientific Design Co.*, 402 F.2d 937, 942 (3d Cir. 1968).

68. *Riper*, *supra* note 49, at 397-98.

69. *Id.*

70. *Id.*

71. *Id.*

72. *RESTATEMENT*, *supra* note 46, § 402A cmt. d.

73. *Russell*, *supra* note 49, at 113-14.

74. *Id.* at 114 (citing J. BAKER, *THE LAW OF SALES* §§ 2-3 (1887)).

sale of goods were required to be in writing to satisfy the Statute of Frauds, while contracts for the performance of services were not.⁷⁵ Accordingly, the "essence test" was developed.⁷⁶ This test asked whether the essence of the contract was the work or the materials supplied.⁷⁷ Similarly, the "English Rule" developed,⁷⁸ which distinguished between contracts which resulted in resalable tangible goods and contracts where no resalable tangible goods were produced.⁷⁹

By 1933, England began to abandon the sales/service distinction for products liability cases. In *G.H. Meyers & Co. v. Brent Cross Service Co.*,⁸⁰ the court found that the contract was for services but imposed an implied warranty of fitness on the goods provided as a part the services.⁸¹ After *Meyers*, English courts generally abandoned the sales/service distinction.⁸²

2. American Cases

American courts were more reticent in abandoning the sales/service distinction. American courts have separated those transactions that are primarily commercial from those that are primarily professional.⁸³ This professional/commercial test is relatively easy to apply. If the defendant is recognized as a professional and the transaction arose out of the defendant's exercise of that professional skill, the transaction is professional in nature; otherwise it is presumed to be a commercial transaction.⁸⁴ This determination is simple if the defendant is a recognized professional such as an attorney, doctor, engineer, or architect. However, not all defendants are easily categorized. What about a computer programmer

75. *Id.*

76. This test was introduced in the leading case of *Clay v. Yates*, 156 Eng. Rep. 1123 (Ex. 1856). In that case, a contract to print five hundred copies of a treatise was held to be a contract for services. The court reasoned that the printer's labor and skill had a higher value than the materials on which the treatise was to be printed. *Id.*

77. *Id.* at 1125.

78. This test was first developed in *Lee v. Griffith*, 121 Eng. Rep. 716 (K.B. 1861).

79. *Id.* at 718.

80. 1 K.B. 46 (1933). In that case, the plaintiff entrusted his car to the defendant who installed six rods that were provided by the manufacturer. When one rod broke, causing damage to the car, the plaintiff sued the defendant for breach of implied warranty. Although the contract was primarily for the provision of services, the court imposed liability for the implied warranty with respect to the rods. See Russell, *supra* note 49, at 114-15.

81. *Meyers*, 1 K.B. at 51.

82. Russell, *supra* note 49, at 114-15.

83. See *La Rossa v. Scientific Design Co.*, 402 F.2d 937 (3d Cir. 1968); *Schipper v. Levitt & Sons, Inc.*, 207 A.2d 314 (N.J. 1965); *Gagne v. Bertran*, 275 P.2d 15 (Cal. 1954).

84. See Russell, *supra* note 49, at 116.

possessing a high degree of expertise in the field of programming?⁸⁵

Some American cases have utilized the English essence test. For example, in *Allied Properties v. John A. Blume & Assoc.*,⁸⁶ the court stated that when "the primary objective of a transaction is to obtain services, the doctrines of implied warranty and strict liability do not apply."⁸⁷

At least one American court used a case-by-case application of the policies supporting strict products liability to determine if the transaction in question was the sale of a product or the rendition of a service. In *Johnson v. Sears, Roebuck & Co.*,⁸⁸ the court considered whether a hospital should be held strictly liable for its administrative and mechanical services.⁸⁹

There are inherent dangers in the case-by-case approach.⁹⁰ While a case-by-case approach might seem desirable because of its individual determination, such an approach lacks consistency, making it difficult for manufacturers to predict with some certainty their rights and responsibilities.⁹¹

85. At least one court has dealt with whether a computer programmer is a professional. In *Chatlos Sys., Inc. v. National Cash Register Corp.*, 479 F. Supp. 738 (D.N.J. 1979), *rev'd on other grounds*, 635 F.2d 1081 (3d Cir. 1980), *aff'd after remand*, 670 F.2d 1304 (3d Cir. 1981), *cert. dismissed*, 457 U.S. 1112 (1982). In that case, the plaintiff asserted a new tort:

The novel concept of a new tort called "computer malpractice" is premised upon a theory of elevated responsibility on the part of those who render computer sales and service. Plaintiff equates the sale and servicing of computer systems with established theories of professional malpractice. Simply because an activity is technically complex and important to the business community does not mean that greater potential liability must attach. In the absence of sound precedential authority, the court declines the invitation to create a new tort.

Id. at 740 n.1.

86. 102 Cal. Rptr. 259 (Cal. Ct. App. 1972).

87. *Id.* at 264 (citation omitted).

88. 355 F. Supp. 1065 (E.D. Wis. 1973).

89. *Id.* at 1066. The court discussed the loss spreading policy justification for strict products liability. Judge Reynolds weighed two policy arguments to determine whether the hospital should be exempt. One argument asserted that it is in the public interest to promote the proper performance of hospitals. On the other hand, hospitals should be excepted because they are generally charitable institutions and are therefore not able to allocate the loss. In his opinion, Judge Reynolds noted that hospitals tend to be a profitable industry; therefore, hospitals should not be automatically exempted. Rather, each case should be viewed separately in the context of the policy reasons supporting application of strict products liability. *Id.* at 1066-67.

My decision should not be based on a technical or artificial distinction between sales and services. Rather, I must determine if the policies which support the imposition of strict tort liability would be furthered by its imposition in this case. In the present context, the question is whether it is in the public interest for the consumer/patient or the supplier/hospital to bear the loss incurred by defective, though non-negligent, services.

Id. at 1066.

90. Hall, *supra* note 64, at 377-78.

91. *Id.*

In summary, while American courts have not totally rejected the sales/service dichotomy, they certainly have not shown any consistency in making this classification.⁹²

B. Statutory Definitions

Statutory guidance on the definition of a product is scarce. In 1979, the Department of Commerce created the Model Uniform Product Liability Act (MUPLA).⁹³ For purposes of the MUPLA, a product is "any object possessing intrinsic value, capable of delivery either as an assembled whole or as a component part . . . [which is] produced for introduction into . . . commerce."⁹⁴ Thus far, however, only Idaho⁹⁵ and Washington⁹⁶ have adopted the MUPLA definition of a product.⁹⁷

Perhaps a more helpful statute, by analogy, is the Uniform Commercial Code (UCC) which applies to "goods."⁹⁸ Under the UCC, courts are more willing to allow recovery for contracts that have elements of service and sales, also known as hybrid contracts. In *Bonebrake v. Cox*,⁹⁹ the court decided that the UCC applied to a contract for a bowling alley even though the contract required substantial labor.¹⁰⁰ *RRX Industries, Inc. v. LAB-CON, Inc.*,¹⁰¹ a 1985 case which applied the UCC to the sale of a computer system, should give computer software manufacturers a reason to pause. In *RRX Industries*, the Ninth Circuit adopted a combination of the case-by-case analysis and the essence test, finding that the UCC applied to computer software.¹⁰² Lab-Con contracted to provide RRX with a software system for use in its medical

92. See generally Russell, *supra* note 49.

93. § 102(c), 44 Fed. Reg. 62,714 (1979).

94. *Id.*

95. IDAHO CODE § 6-1402(3) (1980).

96. WASH. REV. CODE ANN. § 7.72.010(3) (West Supp. 1991).

97. AMERICAN LAW OF PRODUCTS LIABILITY § 16:68, at 90 (3d ed. 1987).

98. For a definition of "goods," see *supra* note 10.

99. 499 F.2d 951 (8th Cir. 1974).

100. The *Bonebrake* court stated:

[U.C.C. § 2-105] is divided into two parts, the first affirmative, defining the scope and reach of Article 2, the second negative, excluding certain transactions. To come within the affirmative section, the articles (the "things") must be movable, and the movability must occur at the time of identification to the contract. . . . They are not the less "goods" within the definition of the act because service may play a role in their ultimate use. The Code contains no such exception.

Id. at 958.

101. 772 F.2d 543 (9th Cir. 1985).

102. In determining whether a contract is one of sale or to provide services we look to the essence of the agreement. When a sale predominates, incidental services provided do not alter the basic transaction. Because software packages vary depending on the needs of the individual consumer, we apply a case-by-case analysis.

laboratories.¹⁰³ According to the contract, Lab-Con would correct any bugs that arose in the system.¹⁰⁴ Soon after installation, defects appeared that could not be remedied, despite numerous telephone contacts and a system upgrade. As a result, RRX sued Lab-Con for breach of contract.¹⁰⁵ The Ninth Circuit considered such services as "employee training, repair services, and system upgrading," but concluded that the transaction was predominately one for a good. Therefore, the California Commercial Code applied to the transaction.¹⁰⁶

C. Recent Developments

Perhaps more threatening to software manufacturers is the dicta contained in the 1991 Ninth Circuit decision, *Winter v. G.P. Putnam's Sons*.¹⁰⁷ The case involved a strict products liability claim for the sale of a book containing erroneous information.¹⁰⁸ The plaintiffs urged the Ninth Circuit to equate information contained in a "how-to" book to information contained in aeronautical charts.¹⁰⁹ In rejecting this comparison, the *Winter* court differentiated between the book and the aeronautical chart by focusing on the technical nature of aeronautical charts.¹¹⁰

In support of its position on aeronautical charts, the court cited a California case, *Fluor Corp. v. Jeppesen & Co.*,¹¹¹ which found that such charts were products for purposes of strict liability.¹¹² Like the court in *RRX Industries*, the *Fluor* court utilized a case-by-case analysis by applying one of the major policy reasons for strict liability—loss shifting.¹¹³ The *Fluor* court found that the paramount policy of loss spreading would best be served by characterizing the charts as a product.¹¹⁴ Significantly, the *Winter* court went on to state that computer software may also be a

Id. at 546 (citations omitted).

103. *Id.* at 545.

104. *Id.*

105. *Id.*

106. *Id.*

107. 938 F.2d 1033 (9th Cir. 1991).

108. *Id.* Relying on an reference book containing information regarding the edibility of mushrooms, two "mushroom enthusiasts" ingested wild mushrooms and suffered severe physical ailments as a result. Both required liver transplants. *Id.* at 1033-34.

109. *Id.* at 1035-36.

110. *Id.* at 1036.

111. 216 Cal. Rptr. 68 (Cal. Ct. App. 1985).

112. *Id.* at 71.

113. *Id.*

114. *Id.*

product for purposes of strict products liability.¹¹⁵ If followed, *Winter* could open the door to strict liability for computer software manufacturers.

V. ALTERNATIVE APPROACHES

Such willingness to consider software as a product was foreseeable. Commentators have suggested various approaches to the treatment of computer software.

A. *Expansion of Strict Liability to Include Products and Services*

Some commentators have urged that the doctrine of strict liability be enlarged to include both products and services, thus encompassing all computer software.¹¹⁶ They point out that the distinction is sometimes meaningless and leads to contorted opinions.¹¹⁷ Such an all-inclusive approach has the benefit of simplicity; any discussion about the nature of software would become moot. However, this approach has serious problems. It does not support the policies advanced to support strict products liability. As noted earlier, providers of services, among other limitations, do not usually have the ability to distribute the costs among a class of consumers.¹¹⁸

This all-inclusive approach fails on other policy grounds as well. If this broad sweep of liability for products and services were allowed to develop, many software manufacturers would be inappropriately caught up. For instance, a programmer who is hired to come into a company and perform the service of writing a specific program for the company should only be held liable for his negligence, not strictly liable for any defects that he could not have foreseen.

115. *Winter*, 938 F.2d at 1036.

Aeronautical charts are highly technical tools. They are graphic depictions of technical, mechanical data. The best analogy to an aeronautical chart is a compass. Both may be used to guide an individual who is engaged in an activity requiring certain knowledge of natural features. *Computer software that fails to yield the result for which it was designed may be another.* (emphasis added). In contrast, [the book in question] is like a book on how to use a compass or an aeronautical chart. The chart itself is like a physical "product" while the "How to Use" book is pure thought and expression.

Id. (citations omitted).

116. *E.g.*, Russell, *supra* note 49, at 113, 132.

117. *Id.*

118. *Supra* notes 64-65 and accompanying text.

B. *Total Rejection of Expansion to Include Software*

Other commentators have urged that software be exempt from strict liability.¹¹⁹ To support this position, they point to the intangible nature of software.¹²⁰ However, as *Winter*¹²¹ and *RRX Industries*¹²² demonstrate, this line of reasoning may be rejected. Computer software is not sufficiently intangible to be exempt from strict products liability. Also, there are some software manufacturers who are in a position to spread the loss, detect errors, and who make representations as to quality.

C. *Happy Middle-Ground*

Because strict products liability only applies to the sale of products,¹²³ consideration must be given to the various ways in which software is sold. Frequently, this sale includes not only the computer software, but hardware and other services. This bundled transaction further complicates analysis of whether a particular sale is a product. Also, software programs can be transmitted by the sale of hardware that contains preprogrammed software, such as a computer board or computer chip. More often, software is sold off-the-shelf to mass audiences. Yet, it is fairly common for software to be custom made for the user.

An ideal analysis would differentiate between those software manufacturers that satisfy the policy grounds for imposition of strict liability and those that do not satisfy the policy grounds, while avoiding a case-by-case application of policy. The analysis should focus on the nature of the software itself to see which types of software best satisfy the policy arguments behind strict liability.

The easiest software to classify as products is the off-the-shelf software and the software that is preprogrammed into hardware. Both of these items are mass-produced and sent off to unknown consumers who are forced to rely upon the representations of the manufacturers. Although the skill necessary to create this item is high, the item is not necessarily provided by a professional.¹²⁴ The manufacturer has control over product quality before it leaves the factory and the manufacturer is selling the software programs on a large scale. The manufacturer is in the best position to absorb the costs of loss spreading. Off-the-shelf

119. *E.g.*, Freed, *supra* note 2, at 467-71.

120. *Id.* at 469.

121. 938 F.2d 1033 (9th Cir. 1991).

122. 772 F.2d 543 (9th Cir. 1985).

123. *See infra* part III.C.4.

124. *See supra* notes 83-85 and accompanying text.

software and software that is preprogrammed into hardware look like any other item that is considered a product for purposes of strict products liability.¹²⁵

At the other end of the spectrum, a custom made piece of software should properly be viewed as a service. Instead of a remote, inaccessible producer, custom made software is manufactured by an immediate producer who is performing a service for the consumer. The policy reasons supporting the application of strict products liability to off-the-shelf software manufacturers do not support application of strict product liability to services such as custom made software. First, the provider of custom made software usually does not deal in high volume and cannot spread the risk of loss among many consumers.¹²⁶ Second, one who is injured due to defective custom made software is better able to prove negligence than the purchaser of the off-the-shelf software manufacturer.¹²⁷ Third, the purchasers of custom made software contract for the expertise of the software designer and not because of representations of the designer. Finally, the designer of custom made software does not have the advantage of safety tests aimed at assembly line production.

Careful attention must be paid to what is meant by custom made. The sale of a standard program that is accompanied by services for training or technical support are considered in the same category as off-the-shelf software. But if the manufacturer either writes a program from scratch or alters a skeleton program, that manufacturer has custom made that program. The service rendered must in some way change the actual program.¹²⁸ An application of this approach in the *RRX Industries*¹²⁹ situation would lead the court to the same result, *but for better reasons*. Instead of focusing on the essence of the contract, the discussion should focus on the essence of the service provided by asking whether the service altered the program. Finally, such a distinction serves as a happy middle ground to the previous extreme approaches of either total expansion or total exclusion.

125. For purposes of this analysis, therefore, a computerized aeronautical chart is as much a product as the same chart that was once reproduced on paper.

126. See *supra* part III.C.4.

127. Such plaintiffs may also pursue a breach of contract action.

128. To change the actual computer program, alterations must be beyond "bells and whistles" (color of screen, types of warning bells, etc.).

129. 772 F.2d 543 (9th Cir. 1985).

VI. POTENTIAL DIFFICULTIES WITH THE HAPPY MIDDLE GROUND

This middle ground approach, which calls for the differentiation among types of software, has the potential to create other difficulties for the application of strict products liability. This approach lacks the simplicity of either total expansion or total exclusion. In order to determine whether strict products liability is applicable, the software package will have to fall neatly within one of the categories of prepackaged software, software preprogrammed into hardware, or custom made software.

While these categories may seem artificial, analysis based on this approach will focus on the nature of the software itself. By maintaining such a focus, courts are relieved of a case-by-case analysis and its inherent inconsistency.¹³⁰ The consistency that the middle ground provides far outweighs the advantage of other alternative approaches.

VII. RAMIFICATIONS

If strict products liability is expanded to include certain software manufacturers, it should be done by following the middle ground approach described above. However, the move toward expanded liability should be made with great hesitancy so that the effects of such social engineering can be weighed.

Computer software may be threatening because the average citizen mistrusts these machines. The computer's reputation has certainly taken a beating. Movies depict computers taking control of humans.¹³¹ All types of mistakes are now attributed to computer error.¹³² Almost everyone has been forced to wait for some important transaction because "the computer is down."

However, these encounters actually illustrate how important computers have become in our society. We are now able to do things with computers that were never possible before their development. For example, although computer malfunctions in the medical profession can be extremely alarming, computer programs have allowed for better and more accurate practice of medicine.¹³³

130. See *supra* notes 88-92 and accompanying text.

131. See e.g., 2001 (Metro-Goldwin-Mayer 1978).

132. This phrase is very misleading. A computer program is merely a set of instructions created and used by people. If an employee dug a hole deeper than was proper, it would be absurd to claim that the inaccuracy of the hole is due to the shovel. Computers, like shovels, are merely tools and are only as good as their human users and creators.

133. Freed, *supra* note 2, at 462, 464.

In fact, increased reliance upon computer technology has given humankind a glimpse at a technological revolution that will rival the industrial revolution in its impact on society. It is through the use of computers that we are now able to perform important tasks with greater precision, accuracy and speed.¹³⁴ New ideas need no longer be tested by costly trial and error. Computer simulations and models can test the idea while the designer sits in her chair.

Additionally, the continued growth of computer technology has important political effects. Computer systems help gain access to a critical source of political power—knowledge. As more and more of the general populace has greater access to computers, information will have to be shared by a larger percentage of the body politic. While measuring such an effect is necessarily difficult, this may prove to be one of the more significant consequences of the explosion of the computer era.

Computers have improved our lives in many ways. The imposition of strict products liability may have a chilling effect on the creation of new advances in computers. If other courts follow the Ninth Circuit's suggestion, they should consider the possible ramifications of the policy they create.

VIII. CONCLUSION

The possible application of strict products liability to computer software is only one example of the strain that new and future technological advances will place on our legal system. Our legal system is designed for slow, careful examination of legal issues with some opportunity to revise the structure with the benefit of hindsight. However, technology is progressing at a dizzying pace, embarking on new territories that the legal system has not contemplated. In short, the legal system is in danger of being left behind in a haze of confusion.

The current debate over strict liability for computer software is a good illustration of this confusion. In time, the very existence of computer software will force lawmakers to reevaluate the entire doctrine of strict products liability because the doctrine is founded upon a simple fallacy. It assumes that everything can be classified as primarily a traditional product or traditional service. Despite all the analytical agonizing,

134. See Diane B. Lawrence, *Strict Liability, Computer Software and Medicine: Public Policy at the Crossroads*, 23 TORT & INS. L.J. 1, 17-18 (1987). "Rather than protecting the consumer from unsafe products, strict liability may drive vital products from the market and cause severe harm to the health and welfare of the public." *Id.*; Freed, *supra* note 2, at 462, 464.

computer software refuses to fit nicely into either category. This refusal to be placed into an old box should signal the legal system that there are additional boxes other than product and service. As technology continues to grow, so too must our willingness to view technology for what it is—a challenge to our outdated legal framework.

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