



# Y2K product liability

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..... At present, \$1 per month buys approximately 10 Mbytes of computer storage. In 1963, 10 Mbytes of memory cost approximately \$1,750 per month (in current dollars). For that reason, in 1963 and for a long time after that, programmers coded 1963 as 63.

Because programmers reduced four-digit codes to two-digit codes over a long period of time, many systems will malfunction when they read the code for the day after 31 December 1999. They will read it as 1 January 1900, because it's coded as 01/01/00. This, with its resulting functionality issues, is the Year 2000 or Y2K problem, also known as the Millennium Bug.

### Disasters in everyday life

Imagine that on Monday, 3 January 2000, you head into work. You don't stop for gas, even though your tank is low. You know that the gas pump won't accept your credit card as valid, and you already tried and failed to get some cash at the ATM. Nonetheless, you manage to make it to work, despite traffic tie-ups due to nonfunctioning traffic-light computers and roads littered with cars that stalled Saturday when their internal computer systems stopped working. (Lucky you, as a poverty-stricken electrical engineer, you have a car so old that it has no microprocessor chips running it.)

Your security card won't work, so you

can't get in through the front door. You break a window and get into the building. No problem, because the intruder and fire alarm systems don't work either. You climb up many flights of stairs, because the elevator isn't working. (Fortunately for you, you weren't riding in it, an airplane, or even a train at 12:01 a.m. on 1 January 2000. Many elevators are programmed to go immediately to the bottom of the elevator shaft and stay there until the controls are reset, unless the elevator's maintenance program indicates that fewer than  $x$  months have passed since the last maintenance and inspection. What airplanes will do you don't even want to think about.)

Assume that somehow you can get into your office. You try to log on to your PC. Your password won't work, because it hasn't been re-entered within what the system reads as the last three months. That problem may be academic, however, if the computerized power grid is no longer functioning. Backup power? Unfortunately for you, the backup system and its fuel pump have embedded microcontroller chips with internal date-related functions that do not permit them to operate unless they've been serviced within the last six months. So, no backup power. Welcome to Y2K.

### Medical emergencies

Meanwhile, at the hospital, your cousin Charlie is having the kind of problems that occur when an air navigation computer

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program can't tell the difference between Kamchatka and Seoul. Or when it reads that somebody's prescribed X-ray dose is several orders of magnitude higher than it ought to be.

The Food and Drug Administration recently informed medical device manufacturers that "some computer systems and software applications currently used in medical devices, including embedded microprocessors, may experience problems beginning 1 January 2000, due to their use of two-digit fields for date representation." (FDA Y2K information is found at <http://www.fda.gov/cdrh/yr2000.html>.) In the same advisory, the FDA admonished device manufacturers that section 518 of FDA law requires them to notify users "when a device presents an unreasonable risk of substantial harm." Furthermore, FDA regulations now require manufacturers "to investigate and correct problems with medical devices that present a substantial risk."

Testimony before the House Subcommittee on Technology (see <http://www.house.gov/science/y2k.htm>) warns that embedded-chip medical systems vulnerable to Y2K failure include

- pumps in intravenous drips,
- heart defibrillators,
- pacemakers,
- intensive-care monitors,
- MRI machines and CAT scanners,
- dialysis systems,
- chemotherapy equipment, and
- radiology.

**Business disasters**

At the same time, all the just-in-time inventory control systems on which manufacturers depend will stop working. Factories will then run out of supplies, grind to a halt, and experience business failure. Lack of inventory may not be what shuts down General Motors, however. A GM study found embedded chips in every one

of its robotics systems, and nobody is sure which chips have date functions that are likely to shut the robots down in January 2000.

Processing accounts receivable, mortgage payments, tax bills, sales of stocks, and other financial transactions is likely to be faulty. (Y2K problems are already cropping up; for example, rejections of otherwise current credit cards with expiration dates after 00.) Commentators predict that between 5% and 50% of business organizations will experience some Y2K failures in 2000, and many will be bankrupted as a result. It is safe to conclude that early in the next millennium, many juries will be asked to decide whether somebody in a defendant's organization was careless, and therefore whether the defendant should be liable for Y2K losses.

**Who pays?**

Who is going to pay for these losses? Senator Bob Bennett of Utah, chair of a congressional subcommittee (part of the Senate Banking Committee) assigned to worry about Y2K, has an opinion. He estimates that the litigation bill will be \$1 trillion in legal expenses, and seven times that much in damages awarded. (The latter figure approximates the US gross domestic product, which may indicate faulty extrapolation or an incredible disaster.)

How will it be decided who should pay the bill when something goes wrong because of a Y2K failure? Several possible legal standards apply.

**Personal injury cases**

In cases of personal injury, courts use one of two principal standards. For some products, a rule of strict liability governs. For an inherently dangerous or life-support product such as a radiation therapy device or a pacemaker, the product is sold to work in a given way, and it must work that way. If the device fails to operate as contemplated, the seller is liable for the damage that results—for example, for the wrongful death of a victim of the malfunctioning device.

For other products, which are not inher-

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ently dangerous or specifically intended for use in circumstances where failure may cause serious physical harm, the standard is simply exercise of due care versus negligence. The seller of the product does not guarantee its successful use, but must take due care to avoid foreseeable problems.

Say you use a microprocessor (sold off the shelf) as a component of your HVAC system's cooling apparatus. The microprocessor causes the release of a chlorine bleach pill every three months to kill microorganisms in the cooling water. It stops working early in Y2K; as a result, in July 2000, half the people in a building come down with Legionnaire's Disease. Did you exercise due care to avoid a foreseeable problem? Did the microprocessor manufacturer? Perhaps you didn't but the microprocessor manufacturer did. Accordingly, the people in the building have a negligence claim against you (who proceed to go bankrupt), but not against Intel (which dodges the Y2K bullet on this one).

Other business tort law risks exist besides negligence and strict liability. Customers or users may have a claim for misrepresentation if a product is advertised or promoted to work in a particular way that in fact is not how the product works. Say a hotel buys your HVAC system of the preceding example. It sends out brochures that say: "You don't have to worry about Legionnaire's Disease at our hotel! We have a specially designed

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antimicrobial ventilation system." The hotel will now probably be liable if this misrepresentation induces victims to go to the hotel and then contract Legionnaire's Disease. If the hotel goes so far as to make representations on a subject, it ought to inquire and make sure that the representation is correct. This could reasonably and foreseeably include making sure that the specially designed antimicrobial ventilation system will continue to work after Y2K.

Another foreseeability issue will play a significant role in Y2K cases: the foreseeability not of *some* harm but rather the particular harm for which the plaintiff sues. This involves chaos or Rube Goldberg-type theories. For example, a train conductor carelessly pushes a man onto a train on 3 July. The man drops a package of fireworks, which explode. All of Penn Station rattles, and a scale falls off a wall at the other end of the station. The scale hits Mrs. Palsgraf, who sues the Long Island Railroad in a famous case.

In another incident, a crane operator carelessly drops a plank into a ship's hold, which has fuel vapor in it. The ship, the S.S. Polemis, catches fire and sets all of Sydney harbor afire—another famous case. In both incidents, the resulting harms are at the remote end of a long

chain of causation, as when a butterfly flaps its wings in Australia and a drought occurs in central Africa.

Now, consider the elevator that went to the bottom of the elevator shaft at 12:01 a.m., 1 January 2000, and stayed there. Nobody was in it, but on Monday, 3 January, an employee (with a Type A personality) denied access to the elevator climbs up 15 stories and has a heart attack. There is no doubt that for years anybody in the computer or electronics industries must have known that 2000 was coming and that 01/01/00 would be ambiguous after 31 December 1999.

Without being careless, how could anybody fail to foresee and take steps to avoid Y2K problems? (Famous last words and 20/20 hindsight.) All right, assume that. But was it a reasonably foreseeable consequence of the defendant's failure to be Y2K compliant that the plaintiff would respond to the lack of elevator service by climbing 15 stories and suffering a heart attack instead of just turning around and going back home? Must the defendant foresee Type A tort victims?

### **Business injury cases**

Economic harm to a business, as contrasted with personal injury, is largely subject to less strict legal tests. These tests are based on what the reasonable expectations of the parties should be under the contract or other arrangement by which one party furnishes products or services to the other party. These reasonable expectations fall under a legal rubric termed express or implied warranties. An express warranty is an express statement in a contract (or a document referred to in a contract, such as a user's manual) that a product will perform in a given way. For example, a statement in a contract that the "product will be Y2K compliant" is an express warranty to which courts will hold a seller.

An implied warranty is a statement about how a product works that custom or ordinary expectations indicate should apply. Typically, a customer legitimately expects a product to be fit for the ordinary purposes to which people would expect

to put the product. (A spreadsheet should calculate properly. So should a microprocessor chip.) A customer legitimately expects a custom-made product to perform the functions for which the customer and the seller knew the customer would use it, particularly when the customer relied on the supplier's expert knowledge to select an appropriate unit. (For example, a disk drive manufacturer may reasonably expect a motor manufacturer to supply it with a motor that will not wobble and will not shed particles of dirt onto the disk medium.)

Accordingly, a customer who buys a billing system in 1998 will reasonably expect the system to keep working after 1 January 2000. A customer for whom you designed an elevator control system in 1995 will have expected you to provide one that works after 1 January 2000. If such a customer's expectations are disappointed, they will doubtless sue, and courts will probably award them damages to compensate them for the losses they suffer as a result of the Y2K malfunction.

Moreover, misrepresentation claims and federal Lanham Act claims may supplement claims based on breach of warranty. Say a contract is silent on Y2K issues. But suppose the seller makes claims with Y2K implications in its advertising or promotional materials. (For example, "this inventory system will solve all your inventory control needs from now on" or "never worry again about your mortgage payment being sent out on time.") The seller will be held to the express or implied representation of no Y2K problems. At the very least, the seller must not have been negligent in making the statements.

By the same token, a seller may try to disclaim responsibility for some malfunctions by appropriate, specific, express statements in contracts and sales literature. (This is why you sometimes see statements in all capital letters in product brochures denying responsibility for consequential damages if the product fails. This is usually followed by a statement to the effect that some states will allow none of this.) Where personal safety risks are

not involved, a seller may be able to limit its liability this way. In most states, however, statements to the effect of "we're not responsible for physically harming you" are legally ineffective. Thus a specific statement disclaiming responsibility for Y2K malfunction would probably be effective for a dating service computer program but ineffective for a dialysis machine.

### Intellectual property problems

Finally, engineers and manufacturers may encounter intellectual property law problems. As far as patents are concerned, the law is clear that a customer has the right to repair a product or modify it to meet the customer's needs—short of building a completely new unit. Y2K bug fixing will therefore probably not create any patent infringement problems. (Just don't incorporate a patented fix.)

But the copyright situation is less clear. Commentators have suggested that users may infringe copyrights in two ways to fix Y2K bugs. First, the mere rewriting of code to eliminate the bug, absent permission from the copyright owner, is said to amount to the preparation of an unauthorized derivative work. Second, reverse-engineering the code (disassembly) to get source code on which to work can constitute the unauthorized reproduction of a copy. Each of those acts is copyright infringement.

On the other hand, section 117 of the US copyright law gives owners of computer programs (but not mere licensees) a right to modify the code if that is necessary to use the code. But customers can contract this right away. What of shrink-wrap (or "click here to continue installation") licenses that prohibit any modifications at all and prohibit reverse engineering? Do they effect a contracting away of section 117 rights? Appellate courts have split on the enforceability of shrink-wrap licenses. Moreover, a move is afoot in the American Law Institute to enact state legislation specifically making shrink-wrap licenses enforceable.

The doctrine of fair use might also be invoked to justify curing Y2K bugs. Perhaps that too could be contracted away

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## Update

After this month's Micro Law went to the editor, news of the following two Y2K lawsuits was published:

### Doctor sues medical office software vendor to get free Y2K upgrade

A New Jersey physician sued Medical Manager Corp., a vendor of doctors' office software, when the vendor tried to charge him for Y2K compliance updating. In November 1996, the plaintiff-doctor bought *Medical Manager*, Ver. 8.1, an integrated medical software system for record keeping and billing. The vendor now offers Ver. 9.0, which is Y2K compliant, but 8.1 is not Y2K compliant. The vendor advertised 8.1 in the following language:

Flexibility designed for a rapidly changing industry, the system offers the ultimate in expandability. ...Medical Manager excels at meeting your current needs and provides you with the ability to manage your future.

Instead of offering a free patch or bug fix, the vendor offered to sell purchasers of earlier versions the new Ver. 9.0. The plaintiff alleges that it will cost him thousands of dollars to remedy the Y2K defect. He therefore demands a free update for himself and the class of 25,000 other doctors who bought the program. He alleges that the vendor has breached the implied warranties of merchantability and fitness for ordinary purposes, as well as federal and state consumer protection laws against making false and misleading representations in selling products.

### Procomm 4 user sues Quarterdeck over Y2K compliance

Procomm+ 4.0 is a widely used Win 95 communications program for modems, faxing, and Web browsing. From November 1996 to July 1997, Quarterdeck sold tens of thousands of copies of 4.0 from \$140 to \$180 each. Quarterdeck now seeks to charge a minimum of \$30 for an upgrade to 4.7, to make the application Y2K compliant. Quarterdeck now states on its Web site (<http://support.qdeck.com/y2k/y2knotes/procomm40.htm>) that in the year 2000, Procomm 4.0x will cause some files to set dates as 2028 and others as 100, or sometimes it may cause a general protection fault. Quarterdeck advises, however, that "these issues are resolved" by the update for \$30 plus shipping and handling.

The plaintiff, an NYC clothing retailer, demands a free upgrade for the copy it bought in March 1997 and similar treatment for the whole class of other purchasers in its position. It alleges that Quarterdeck knew or should have known about Y2K problems at the time it marketed 4.0, but it failed to inform the public of the problem until June 1998. At that time, plaintiff says, Quarterdeck's sales representatives contacted it, advised it of the Y2K problem, and sold it a \$38 upgrade. The plaintiff wants Quarterdeck to give it, and all other customers in the class of 4.0 purchasers, back the \$38 update fee and to provide a free upgrade. The plaintiff also demands treble damages and attorneys' fees under federal and state consumer protection laws for itself and the class allegedly subjected to Quarterdeck's false and misleading representations.

under a shrink-wrap license.

Therefore, consider this nasty situation: Your shrink-wrap license prohibits reverse engineering or any code modifications. It also says that you agree that neither of these shall in any circumstances be deemed a fair use. You contact your vendor and complain about a Y2K problem. The vendor offers two options: (1) buy an expensive upgrade that's available

immediately, providing several useless bells and whistles and Y2K compliance; (2) use our free bug fix that we'll *definitely* send you in October 1999. But us give you a waiver of the shrink-wrap prohibitions? No way.

What should you do? What will the courts say if you undertake self-help? Check this column for the answer some time after 01/01/00.