

## The Year 2000 Computer Problem

Amy Matsui

Computers are an essential aspect of the modern world. We use computers to write our letters and reports, pay our bills, keep track of our financial records and appointments, and do numerous other important tasks. We have become so dependent upon computers that if something goes wrong with our hardware or software, we almost cannot function.

According to predictions of computer experts, many computer programs will stop working when the year 2000 rolls around. This is because most of the world's mainframe computers, which use only two digits to represent the year, will be unable to tell the difference between the year 2000 and the year 1900. Since so much of our personal and business financial data is stored in government and business computers, and since so much of this data is tied to dates, the arrival of 2000 could bring chaos (Nocera 51). The world faces computer catastrophe, and it will not be easy to fix the problem.

It has been estimated by one market research firm, the Gartner Group, that it could cost as much as \$600 billion to fix the problem. Capers Jones, head of a software research firm, claims that "Y2K appears to be the most expensive single problem in human history"; he believes the potential bill may be \$1.6 trillion (qtd. in Green 54). A good part of this sum will be the expense of lawsuits; according to Los Angeles lawyer Vito Peraino, "This is a litigation catastrophe waiting to happen" (qtd. In Newberry 50).

There are ways that people can check their own PCs by resetting the time and date to 11:58 P.M., December 31, 1999. They should switch off the computer for a couple of minutes and then restart it. If the computer prompts them for a date, then it has the problem ("Preventing" 44). People also can check to see if their software has the Y2K bug. They can create a table in Microsoft Excel with 1996 to 2000 in the first vertical column to represent the year, and "1" and "1" in the next two vertical columns to represent the month and day. In the fourth vertical column, they should calculate the dates. If a valid date doesn't appear in that column for the years after 1999, they won't be able to use the software after December 31, 1999 (de Jager, "Working" 32).

This state of affairs can be blamed on the original computer programmers of the 1960s and 1970s, who first decided to use "68" instead of "1968" to represent the date. Two digits were used by these programmers instead of four because memory in early computers was expensive, and so using two digits reduced by half the storage space needed to represent years. Also, before the age of hard drives, data in mainframe computers were stored on cards, and one card could store only 80 characters. Representing dates with two digits considerably reduced the number of cards needed (de Jager, "Kidding", Internet). Now memory is much cheaper, but unfortunately, it is not so easy to put back the missing digits. One commentator used an analogy to illustrate the difficulty: a man born in 1915 has a headstone carved with "1915-" to represent his birth and death dates, leaving two digits of space to represent his death, presumably in the 20th century. But if he lives past the year 1999, two digits' worth of space won't be enough, and his headstone will have to be recarved ("Beware" 86).

Fixing the Y2K problem is so difficult because there's no "silver bullet." There is no quick and reliable way of replacing two numerous digit-date codes with four-digit ones. It will be extremely time-consuming to locate the date representations (which often are inconsistent) in millions of lines of computer code written years or even decades ago in the COBOL language, which is now obsolete (Levy et al 54).

Thus, it will be extremely expensive and time-consuming to fix the year 2000 problem. Although the original computer programmers had no intention of creating this problem, they have left us with a large task to deal with. Once the year 2000 rolls around, much of our modern technology and communications may stop unless we take immediate steps to solve this problem.

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