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## The Millennium Dilemma: Myth or Monster?

Just one year from now, we'll know whether the alarmists or the skeptics are right about the millennium "crisis." Some evangelists are predicting Armageddon, while other opportunists are cashing in on windfall profits from public ignorance. Predictions range from world-wide famine because of non-delivery of foods, global economic collapse because of paralyzed bank transactions, rioting among panic-stricken populations, to complete cessation of utilities such as power and water.

The heart of the problem is the real-time clock — the quartz-crystal-controlled microprocessor — that puts everything into digital sequence. The problem comes from calculations arising from comparing two dates, one before and the other after the turn of the millennium.

Most computers, in order to save processing space and speed, use only two (binary) digits to signal the year, just as we often do when we write the date ('99 for example). So when the world's clocks turn to "Y2K" (year 2000) at 12:01, January 1st, inadequately designed microprocessors around the earth will think it's 1900, not 2000.

The most seriously affected operations are those that are calendar dependent — billing, accounting, scheduling operations that rely on day of the week as well as the date — not technical services or industries. And it won't be just major computers affecting accounting, payroll, shipping, and inventory control, it will be minor headaches for any equipment or appliance that depends on a microprocessor-generated calendar. However, if all the calendar does is show the date, but doesn't control any function, there's nothing to worry about.

The list may include some cash registers, clocks, security systems, climate control systems, home entertainment systems (TV, VCRs, stereos), telephone systems, radio equipment, pocket organizers — anything with date-sensitive embedded computer chips. You may not want to be on an elevator when everyone is shouting, "Happy New Year!"

The result could be anything from mass chaos to sporadic inconvenience, depending upon our level of preparation by next January 1st. And just for an additional kick in the CPU, it's leap year as well!

*So what does all this mean for the world's businesses, citizens, and governments?* A recent Federal Communications Commission (FCC) report revealed that although there was considerable hand wringing over the issue among their regulated organizations, virtually nothing was being done to correct it. As usual, Americans are largely apathetic, assuming "someone will do something." Others seem to think that nothing really needs to be done, or that it's a government conspiracy to subdue the people and take absolute control. While most institutions have been upgrading in preparation

of the Y2K event since 1996, let's take a look at specific concerns:

**Public Utilities:** Will electricity supply shut down nationwide? Tennessee Valley Authority (TVA) engineers simply switch to manual control and phase the generators back on line when there are problems. Power providers have been bringing their systems up to Y2K compliance for three years; they are now in a check-out phase, and everything is going well.

**Airlines:** Will planes fall out of the sky? The Federal Aviation Administration (FAA) says that backup systems abound. When computer systems fail, pilots simply switch to their manual systems (VOR, ILS, VFR). All mission-critical FAA systems have been upgraded to Y2K compliance and are now in a final check-out phase. Some 500 worldwide airlines are sharing their upgrade information...on schedule. Any scheduling problems will be caused by phone-call swamping from concerned customers.

**Banking and financing:** Will our financial institutions fail, unable to keep up with transactions? Will ATMs stop functioning? Is it likely that transfers will be paralyzed by a panic bank run? Will the IRS default on tax refunds? Will Social Security and welfare checks be interrupted? Can credit cards be validated for transactions? Will Americans hoard cash, creating an artificial depression? What is the consequence of our dependence on the European and Asian economic communities?

Predictably, banking and other financial organizations have been working on this for some time. They know that mortgages, loans, interest rates, credit transfers, and similar transactions are time sensitive. Federal regulatory agencies are at the heels of the banks to be sure they are upgrading, and keeping backup records as well. Even so, it's a good idea to keep track of your own transactions — like keeping paper copies of bank deposits and receipts!

The U.S. stock market has been well ahead of the Y2K problem for some time now, regularly conducting mock emergencies. So far, so good — on the American scene. The international market — both European/Asian and third world — is a wild card.

**The Bottom Line:** Will Y2K end life as we know it? No. Will it impose serious safety hazards? No. Will there be minor disruptions and inconveniences? Yes.

While major institutions and networks have been working hard to be Y2K compliant, smaller businesses — and individuals — will be caught unprepared. Mom and pop operations may well have to go back to paper and pencil transactions until they upgrade their computers.

But we Americans are a hardy, resourceful bunch and, just as when hurricanes ravage our coasts, winter storms knock out power and communications, and homicidal dictators threaten our way of life, we come back swinging. We are survivors, and we'll get through the millennium.