# *DIABOLUS EX MACHINA:* AN ADVENTURE IN ELECTRONIC PROPOSAL PROCESSING

Marc D. Levenson

I had been cursing at an Eastwick Coven & Co Model 666 workstation for about a day when the Devil appeared on the screen. His dialogue box opened and—in a 13-point sans seraph font—the Devil said, "Truly, it does not have to be like this." (Usually the Devil just says "Gotcha!" and then you have to reboot the system. . . .)

I pressed the "Help" button and the dialogue box changed. It said, "You know how computers always seem to create more problems than they solve? (Y/N)"

"Y," I responded.

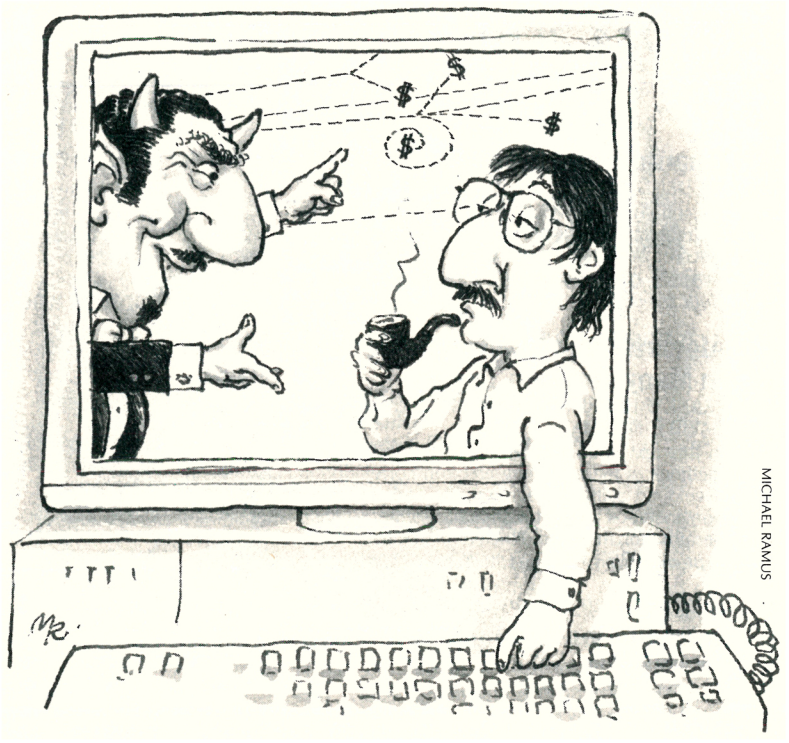
"That is the nature of electronic computation. It has to do both with the finite speed of propagation of electrical signals and with the basic negativity of the electron. Only humans use electrons so extensively for computation. Do you want to learn about the alternatives? (Y/N)"

"Y."

"Optical computers use photons, which are neither negative nor positive, but still have a finite speed. With parallelism, the machines can seem faster. Really advanced computers use phenomena that don't have a speed limit."

At that point I pushed the "Enter" key and found myself on the CRT screen conversing with the Devil face to face. "Look," I said, "in our universe, nothing goes faster than the speed of light."

"Not so," said the Devil (who up close looked a lot like David Mermin). "The place where the electron beam hits the CRT screen on an oscilloscope is a tiny point of light. At the fastest scan speeds, that point moves 1 centimeter in 10 picoseconds; that is three times faster than $c$. Your standard model of high-energy physics allows for tachyons, which *always* move faster than the speed of light. Really advanced computers have tachyonic circuitry. Such computers are so fast they solve problems before their users know what problems they have to solve. Isn't that what you really want?"



MICHAEL RAMUS

"What I really want is to get my latest funding proposal finished and to get out of this computer screen," I said.

"All in due time. Your proposal is about new computer architectures based on neural networks, right? That is a hot topic now because everyone on Earth is having the same kind of problems that got you in here with me. Well, if you are going to propose reinventing the computer, you might as well go for the maximum payoff. Don't be limited to light speed; propose a tachyonic computer! Trust me, the funding agency will love it!"

"That's ridiculous; no one would ever fund a tachyonic computer."

"*Of course you can't come out and say you will build a tachyonic computer!* Say you will research the potential of "ultra velocity particles" for data processing. Form a UVP consortium with participants in several states. Find interested corporations. Think up a catchy name. You can get high-energy physicists to study the power supply and cooling system issues. (You need a cooling system because hot tachyons go slower.) Theoretical computer scientists can work on designing gates that do logic operations backward in time. The big

**Marc Levenson** is managing director of the Bureau-Hazard Foundation, which was formed in 1989, in Saratoga, California, to denigrate hazardous bureaucratic waste, wherever it may be found.

problem will be interfacing with sub-light-speed electronics on the input–output, but you can propose assigning this problem to the instrumentation departments of the national laboratories—they're used to doing the impossible in obscurity. In any case, input–output and user friendliness are always terrible in computation. Expectations have been lowered! With good error-correction codes, a tachyonic computer shouldn't be any harder to use than your UNIX workstation. And you can always be sure that it has solved your problem, even if you can't quite get the result printed out!"

"That does sound familiar," I said, "but I can't believe that any scientist could take such a proposal seriously. I would be laughed right out of APS! People proved long ago that you cannot communicate faster than the speed of light. Not even quantum mechanics can do it—all that transactional picture and acausality business doesn't affect the real world at all."

"Look," he said, "computation is not communication, and the world of research proposals doesn't have much to do with reality, either. The guys who make the decisions on funding want to see something new and dramatic, not the continuation of something old and established. I know: I talk to them every day. So give it to them! Your proposal will be bought and sold in the marketplace of ideas, and the rule of the marketplace is *Caveat emptor*. If they really want to pay people to violate the laws of nature (or economics or simple prudence), they are sure to find them! Do you think all the others who are competing for research funds are being as conservative as you are? At the present stage of knowledge no one can prove that the tachyonic computer is nonsense. Doesn't that make it different from a lot of well-funded things you read about in the newspaper? If *you* don't propose a tachyonic computer, someone else will—and money that you might have spent intelligently will go to someone who has volunteered to violate 'laws of nature.'

"Oh, and by the way, a century ago atoms were as controversial as tachyons are today. Think about that!"

"Yes—," I said, but before I could finish there was a loud "beep" followed by a laughing "Gotcha!" I found myself outside the workstation, staring at the ruins of yet another complex computer graphic. On the hard disk was a new file: "UVP Supercomputing Super Initiative: A New Nationwide Multidisciplinary Program." I am still wondering whether to mail it in. ■