Diabologic: Thinking About Technology
by Frank Dolinar

   Western culture depends on its technological infrastructure. Every day, we trust the technology that permeates our lives to perform its expected tasks and to do so flawlessly. We don't think about the technologies around us because they are so pervasive.

   Microelectronics and its spin-offs created my profession. It is a large driving force in the economies of the Western world. Its continuing evolution allows us to do things today that were unheard of a mere decade ago. New technologies raise our expectations of what is possible. It works pretty well, but not without the occasional flaw.

   Oh, how stressed we become when some technology we depend on doesn't work as we expect and we have to deal with getting it fixed. Today, many of us depend on the constant availability of our computers and the "always on" connectivity to the internet.   When my computer fails, I feel completely disconnected -- not just from my ability to do work, but from the community of my friends and colleagues.

   Beyond what we expect, new technologies often change our lives in novel, unexpected, and not always positive ways. A century ago, the electric light illuminated our cities and gave us Broadway and Las Vegas. More recently, communication satellites -- originally intended to make long distance and international phone calls easier and cheaper -- gave us worldwide news services such as CNN. The internet and email have provided us with ways to distribute our best (or worst, depending on your point of view) jokes and to electronically mass produce junk mail. The web has given us one-to-one connections, an enormous information resource, and the ability so shop any store anywhere in the world that has a website -- and allows anyone with modest technical skill a plethora of ways to track our every move in cyberspace.

   Recent cell phones with the explosively popular instant messaging (IM) feature allow us to define and keep in constant touch with our own far flung communities while excluding and ignoring the family and friends in our midst. As of the end of this year, all new cell phones will be equipped with GPS locating capability so that you can always be found.

   Pervasive technologies become the background tapestry of our lives shaping, in part, our cultures and our history. Flint, bronze, and iron all have their historic epochs. I wonder what the future will call our era. Who knows? There will be lots of options.

   Nanotech is no longer science fiction. It is rapidly emerging from labs all over the world. Proof that it's becoming big business is the fact that it's showing up on legislative agendas in Washington under the general rubric of regulation. For good or ill, my guess is that nanotech research and its delivered capabilities will rapidly outstrip any attempts at regulation. It will reshape architecture, medicine, computers, economies, and both the reasons for and the way we will fight future wars (regrettably).

   Man's second, privately funded, space program is going to allow us to re-think what it takes to get into and live in space, on the moon, on Mars, and farther out. It will take advantage of every tool current and emerging technologies can provide, and create more along the way.

   Computer gaming is a potent mix of real-time, high-resolution, 3D graphics combined with artificial intelligence that learns about the player as the player's gaming skills improve. Interactive computer games of all genres are driving the development of both graphics and AI systems.

   As AI combines with light & strong materials, we will find ourselves facing, and learning to live with, the robots our science fiction has been predicting since Asimov's robot stories. They won't just be in factories and laboratories, they'll be in our homes and offices. Already, there are "robot agents" developed explicitly to handle online disputes.

   Quantum computers, currently in the research labs, will provide such prodigious capabilities that they will allow us to solve intractable problems that today are literally beyond calculation.

   All of these -- and many more -- will be part of the tapestry of our lives within a decade.