

Exactly what is high tech?

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Here is a bit of trivia for you. What were the first computers?
Answer: The first computers were women.

No, I am not headed for a sexist joke. During World War II, the U.S. Army needed data for ordinance tables, which tell where an artillery round will land given the conditions under which it is fired. Developing these tables involved a horrific amount of number crunching. It was done primarily by young women punching mechanical calculators while sitting at row upon row of desks in a large room. Because they were computing trajectories, these ladies were themselves referred to as "computers."

Then along came Eniac, and the rest is history. Computers were no longer women. But despite Fortran having been developed by Grace Hopper, gradually the perception developed that women genetically had a difficult time understanding or using computers. Even today, some people complain that educators steer women away from careers having anything to do with computers or high tech in general.

That brings us to another issue, and that is the way the term "high tech" is now used, especially in journalism. Take, for example, the headlines you have been seeing lately about high-tech stocks. Most allusions to high tech involve companies writing software or doing something with the Internet.

The programming I have done has been confined to writing maybe 200 lines of code in Basic. But that was enough to convince me that writing software is not necessarily "technical."

I have been to engineering school, and I think I know what technology is. In my mind, "high tech" begins with mathematics, especially calculus. It is also physics, even if limited to Newtonian physics. High tech is understanding electrical and electronic phenomena, especially at the circuit level. Being high tech is knowing how to mathematically model physical reality so that you are in the ballpark before you begin building prototypes or Job One.

What is not high tech? High tech isn't writing software from a high-level programming language to do accounting, record keeping, or to order products off the Internet. Yet, ironically, most allusions to "high tech" or "tech-savvy people" in today's

newspapers refer to exactly that type of activity.

Even more annoying is the mystique surrounding the Internet. For gosh sakes, people, the Internet is essentially a graphic and alphanumeric version of the telephone. And there is so much hand-wringing over the fact that low-income people don't have the Internet access we middle-class people enjoy.

What sort of foothold in my climb to the Good Life has the Internet given me? Well, I check airline fares. I get schedules for European railroads. And I reserve airplanes at my flying club. That is the sum total of utility I have gained from being on-line. I don't see how these particular capabilities let me wield economic power over the minimum-wage people who clean our office building at night.

Especially galling to me is what isn't called high tech. One of the most amazing devices built in the last 60 years is the jet engine, but I never see newspapers refer to airplanes or their powerplants as being high tech.

Nor is anything involving machine tools or numerical control ever called high tech. Yet modem controls and machines are far more technically sophisticated than accounting software. And I won't even get into what a modem automobile represents in terms of engine control, metallurgy, manufacturing know-how, as well as mechanical and structural analysis. Nevertheless, everything I've just mentioned constitutes the so-called Old Economy.

So when are you high tech? Do you understand calculus? Have you studied physics? Do you understand at least the fundamentals of electrical and electronic circuitry? If not, you don't even come close to being "tech savvy," no matter how much time you spend on the Internet.

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