Uncertainty of technology makes decision tougher

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Anyone who has ever bought a computer is familiar with Moore's Law, in practice if not in name.

In 1965, Gordon Moore, the co-founder of chipmaker Intel, said that every 18 months companies like Intel would be able to affordably manufacture a chip with twice the transistors - and therefore speed - of its last model.

That meant top-of-the-line 286 central processing units quickly became second-chair to the 386 and so on through the Pentiums and Itaniums.

It also meant that the box a buyer shelled out thousands for today would be worth hundreds in a year and probably work better as a fish tank than a computer in five years.

But at least consumers knew what they were getting into.

The series of municipal broadband referendums in the Tri-Cities on Tuesday's ballot will guide the cities on investing millions in a fiber-optic system to bring cable TV, high-speed Internet and phone service to residents and businesses.

If they decide to make that purchase, the cities won't have the same odd assurance computer buyers do because no one has come up with a Moore's Law for the broadband revolution - although fiber technically carries light signals and nothing can go faster than that. Laboratory tests have shown fiber can carry billions of phone calls a second.

Still, making an investment in a technology that could soon be outdated is risky, especially when what could outdate it remains unknown.

Emerging technologies could totally eliminate the need for wires within miles of customers, or turn everyday power outlets into data ports.

Cable companies like Comcast know quite well how technology can change the playing field. When satellites shrunk to the size of large pizzas and the Federal Communications Commission allowed them to broadcast local channels in 1999, the dish took off.

Now, the two largest satellite providers have 23.2 million subscribers and growing, while the cable industry lost 300,000 subscribers in six months last year, leaving it with 65.7 million.

The telecom giants remain heavily invested in fiber. After a recent FCC ruling that telecoms didn't have to share fiber lines built within 500 feet of customers homes, SBC announced it would build its network twice as fast.

Within the next two to three years, 18 million households would receive the new service, rather than the five it had planned on. Another Baby Bell, Verizon, has also been running trials of fiber-to-the-home in Keller, Texas.

"Even Verizon recognizes this is the technology that is going to help economic development and schools and that people want for years to come," said Annie Collins, the organizer of the Fiber For Our Future group backing the referendum questions.

Comcast has continued to pour millions into beefing up its network of fiber in the Tri-Cities alone. None of the telecoms have implied fiber will soon be obsolete, or anything on the horizon will soon replace it.

"There's no reason to believe that anything is going to replace fiber itself," Eugene Edmon, director of broadband access for SBC Laboratories said in a published report.

But at the same time, there's been rumblings of technologies that could totally change existing networks, or even destroy the need for them.

Moore's company, Intel, is pushing a wireless technology called WiMax, and in the next few years will be building all its chips with WiMax access.

The technology works much like Wi-Fi, but instead of feeding off a home network, it can send signals for miles. The copper and coaxial wires that now run from fiber-optic lines into the home could be unnecessary.

WiMax can work at speeds of up to 75 megabits per second, roughly 25 times the speed of a cable modem, though still significantly below fiber's capacity.

But so far, wireless technology lags at providing television service, which still makes more than the bulk of cable customers and profits.

"In order to compete they need to be able to offer triple play, this is not just about one service, this is about three," television, phone and Internet, Collins said.

Of course, 10 years ago high-speed Internet over telephone lines or telephone service over coaxial cables seemed like a pipe dream.

Another too-good-to-be-true technology on the horizon would make the Internet available anywhere there's electricity. Federal Communications Commission Chairman Michael Powell said last year "it could simply blow the doors off the provision of broadband."

The FCC recently ruled power companies could offer broadband to their customers through power lines. But the technology remains in its infancy, with pilot programs that involve just 5,000 customers nationwide.

Though electric lines can transmit data signals, the stability of the power grid makes it more than tricky. In most tests, data is actually carried by fiber around high-voltage lines and then crosses over closer to home once the voltage decreases.

The signals also interfere with radio signals like those used by ham radio operators, which has caused an uproar in that 700,000-strong community.

And even power giants like Cinergy don't know if they will be able to offer service cheaper than DSL or cable providers.

While technology can be hard to pin down, given the flexibility and availability of fiber, and the confidence even the Baby Bells have in it long-term, Collins doesn't see it going the way of the PS/2 anytime soon.

"The fiber-to-the-home builds are where the industry is headed, even for the Bells," Collins said.