

Jim Carroll

Ordering fried chicken with the TV remote

Convergence. It's a word that can strike terror into the heart of any technology person.

After all, it is the most over-used, overdone, overhyped phrase to come out of the Information Age.

I shudder every time I see yet another telecom, broadcast or entertainment executive talk about their vision of convergence. From their perspective, it is a world in which we become wired couch potatoes. We'll watch their latest entertainment pap on TV, and as soon as something catches our eye — zap — we'll click our way into consumer heaven, instantly using our remote control to buy the latest, greatest Chia-Pet.

Gosh, when are these people going to get a clue?

To many, convergence is more than warmed-over, stale, rehashed ideas that have little likelihood of succeeding. Indeed, the real concept of convergence is found in the fact that in the next 10 years, much of the Internet is going to disappear as the world of microprocessors becomes tightly linked to the Internet.

From my perspective, one of the most significant developments today is that the very essence of the computer revolution — the microprocessor — is about to become an integral part of our global Internet.

The emergence of the Internet chip, or what I call the "IP-chip" (for Internet-Protocol-Chip) is going to lead to some pretty fascinating developments through the next 20 years. It leads us into a world in which the various devices that surround us in our day-to-day lives, whether used for personal or business reasons, are about to become linked to the Internet. And to me, that's convergence.

Let's contrast the "old" model of convergence with the IP-chip model. In the old model, bandied about by those who don't have a clue, one day we'll buy an Internet fridge. They believe consumers will want a fridge with a Web screen, and we will stand there and surf the Web, buying our groceries. A bar code reader built into the fridge will "see" that we have just emptied a milk carton, and instruct the fridge to go off and buy a carton or two. As it does so, it will flash us some great coupon offers for yogurt and instant Pina Colada mix.

In their converged world, our fridge — heck, our kitchen — becomes yet another shrine to consumerism, a world in which we are all too willing to turn our homes into a non-stop, flashy-trashy advertising extravaganza.

As if.

Ok, so what is my view of convergence? Well, I do agree that over time, the typical fridge will become part of the Internet. But most of us won't notice it or be aware that it has happened because five or 10 years out, most fridges will still contain a variety of microprocessors, as they do today. Yet these microprocessors will be IP-chips, or Internet-aware processors. They'll monitor the conditions of the fridge and adjust operating conditions as appropriate. A bit of an energy brown-out? Adjust the cooling range for that. The kids left the door open for too long? Feed some extra cold air to the vegetable crisper. The compressor is about to go? Send a message off to the fridge manufacturer, notifying them of the potential problem. Maybe it's running hot? No problem, a small bit of code will be sent back to recalibrate the engine speed.

That's why we joked in our *Light Bulbs to Yottabits* book that in the future, you'll go to answer your front door, and see the Maytag repairman. "I didn't call you," you'll say. "No, your fridge did."

Far-fetched? Perhaps, but more believable than the idea of ordering fried chicken with my TV remote through the MegaConvergeCorp Multimedia Interactive SuperChannel.

Once you start thinking about the Internet chip, you begin to realize how far reaching the implications of the converged world will be. As anyone involved with Y2K knows, we are already surrounded by microprocessors. Intel suggests that by noon, most of us have already interacted with 130 different microprocessors. They're in our cars, cellphones, toaster ovens and garage door openers. It is estimated that there are 600 billion of them.

And the simple fact is, the next generation of microprocessors, in development now, is being engineered with the ability to talk TCP/IP. And once you do that, the fundamental role of the microprocessor, and the device in which it is embedded, forever changes.

One of the most fascinating areas of opportunity is the manufacturing sector. IP-chips permit a level of interaction and monitoring of the production process never possible previously. Or consider a $5 device with a chip in it that can monitor the flow in a flood prone river. Attach a few to several bridge supports, build an application, and you've got a tool by which emergency crews can monitor for dangerous conditions. The possibilities are endless, and intriguing.

Career opportunities? I think there will be plenty with anything having to do with the word "embedded." There are already many companies actively working in the area of hardware. The embedded software market is extremely active. Then there are the control and monitoring systems that go with this interconnected world, not to mention the opportunities that will emerge in interface design. I think this will prove to be one of the most fascinating and fast-paced areas in the world of technology in the years to come.

As for the other idea of convergence? Twenty years from now, we will have the same old, tired entertainment telecom and broadcast executives pushing their idea of the supercharged ad-driven couch-potato entertainment universe. And most of us will still continue ignoring them. «

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