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Convergence: It's Not Just a Buzzword Anymore

Gary Breed
Editorial Director

Convergence—the combination of previously discrete services into a single telecommunications system—is sneaking up on us. That is, it is sneaking up on us from the viewpoint of public perception, but it is an avalanche rolling down the mountainside in the boardrooms of major electronics and telecom companies.

It's not happening all at once, like a few futurists suggested, and it's not happening as fast as was hoped by the companies that buried thousands of miles of fiber back in the 1980s and '90s. But, there are several recent developments that are significant parts of the convergence movement.

At the top of the list is the growth of wireless technology. Convergence's "one giant pipe" for voice and data could never happen if it couldn't reach everyone, everywhere. Several US cities were in the news recently, announcing plans to develop metropolitan area wireless networks (MANs) using various combinations of wireless point-to-multipoint, fiber optics and wireless LAN hot spots. In addition, the next generation (whether 2.5G or 3G) of the wireless "phone" system is beginning to spread, which will provide relatively high-speed data capability to every handset user.

The second item on my list is Internet use by ever-greater numbers of people. According to a recent news report, Internet usage has reached the point where adults are now better than kids at navigating the Internet to find the information they need! Cable modems, DSL and enhanced dial-up services have increased the speed of everyday access, supporting both greater usage and additional services.

Here's a concept that seemed to make sense the first time I heard it—convergence will follow a period of the opposite trend, a proliferation of discrete services. The simple voice telephone is the best example. From your home, you can make a phone call by traditional copper landline, via a CATV system, by cell phone, using Voice-over-Internet Protocol (VoIP) or even with a satellite phone. Such a range of services is incredibly inefficient! If all of them are in place, each service needs a unique phone number and an array of hardware to make them function.

Video and audio entertainment is following the same pattern. You can get programming via terrestrial broadcast, CATV distribution, DBS satellite, MDS microwave broadcast, recorded media or Internet download.

The logical question is, "Do we need all of these choices?" Well, right now, yes we do. But it is easy to imagine how many of them could be combined into a single system, greatly enhancing the convenience to consumers.

Convergence Challenges

I see two major challenges for convergence to continue—security and competition.

Security of the actual transmission of data appears to be manageable, with advanced encryption well-established. Unless the hacker community uncovers the Rosetta Stone of encryption (yes, I enjoyed the movie *Sneakers*), this part of security is not a problem.

The other part of security is the use of accumulated data. Our current diversity of service providers means that personal data is compartmentalized—there is no single place where it is collected. If we have a single point of access for our communications, it will be easier for identity theft and invasion of privacy to occur.

In the US, the biggest barriers to total convergence are our anti-trust laws. Who runs the "single point access" that provides phone, Internet, entertainment, banking, etc.? It's essentially the same issue as AT&T and the telephone, or Microsoft and PC operating systems. I'll be watching with interest!

When Not to Converge

I don't expect convergence to be the entire answer to our communication needs and preferences. The giant retail stores have not put all the small shops out of business, either. At the very least, there will be "boutique" services that are highly individualized, and people like me will do things the old way just for our personal enjoyment.

World politics and economics will prevent global convergence, so existing technologies will continue to be used where they still make sense. Developing nations may leapfrog some steps as they implement improved services, but it will be a long time before they reach the level of the economic giants, which will have moved ahead in their own ways, of course.

As you might guess, my overall opinion on the value of convergence is, "It depends." There are many areas where integrated, convenient communications makes perfect sense. But, being individuals, we all will have preferences in the way we live that no single provider will ever be able to satisfy.

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