

Perfect Storm To Drive Telecom Turnaround

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In years to come, February 20, 2003 may well be looked back upon as a key turning point for the telecom turnaround and a watershed for the future of the communications and entertainment industries. That's when the FCC decided to remove much of the uncertainty that has chained critical U.S. investment decisions in converged multiservice broadband delivery since 1996's so-called telecom deregulation.

It's a decision that importantly coincides with the now practical viability of packet-based, next-generation network platforms as well as with very real competition among large cable operators and incumbent telcos for household wallet share and business budgets. These three forces have created a tempest of change – a “perfect storm” if you will – both in how communications, information and entertainment are delivered and in the business models delivering them.

An urgent national priority. The transformation that's underway has come none too soon. Telecommunications, along with health care, transportation, energy and education, is among the most vital of infrastructures for sustaining healthy U.S. economic growth. As goes telecom, so goes the economy: More than 500,000 telecom jobs have been lost in the past two years – 30 percent fewer jobs than in 1990, even before the euphoric rise of the Internet. More than \$2 trillion in market capitalization has vanished, along with investor confidence. And after 100 years of U.S. global leadership in the development and deployment of advanced communications infrastructure, our nation is ceding that role to the likes of South Korea, China, Taiwan and other nations making aggressive investments in their telcom infrastructures.

What happened? In great part, we've been saddled with traditional legacy networks that were designed for yesterday's slow, stable traffic growth and localized calling patterns, not today's telecom realities. Despite the laments of network “overcapacity” in recent years, the facts are that total network traffic volumes have continued to soar 80-90 percent year over year and the frequency with which the patterns of traffic change over time (i.e., traffic volatility) has grown an estimated 300 percent. As the lead network architect for one of the nation's largest independent telcos said last year, “Sure there's more than enough capacity, but the problem is very little is where I need it.”

Not just broadband, but converged broadband. What is needed are scalable and flexible capabilities to deliver managed packet services over dynamic optical fiber under softswitch control. Wall Street should take heart that the technology platforms to meet these requirements have finally matured in two key areas: (1) technically, for the sake of QoS, reliability, and security; and (2) economically, in terms price-performance of components and network elements.

Services like video telephony (introduced by AT&T at the 1964 World's Fair), multipoint collaboration, multimedia Web services, voice activated dialing, and on and on have been easily enough envisioned for the past 40 years but impossible to practically or profitably deliver. In fact, one of the key reasons for the \$1 billion market failure the world's first wireless personal digital assistant – Apple's Newton – is that the public communications infrastructure simply wasn't ready to support its full capabilities.

So while providing broadband access to more Americans is important in order that they can take advantage of these services in their personal and business lives, it's equally important to enable *converged* broadband access. Only a converged approach can lower service providers' operating and capital costs by orders-of-magnitude, driving sustainable *and profitable* business models and offering consumers and business owners more competitive options.

War of the giants, spoils to their customers. The third force driving the perfect storm is the showdown between the large telcos and large cablecos for bigger shares of the communications, information and entertainment markets.

After spending more than \$60 billion in bi-directional, digital upgrades for its hybrid-fiber coaxial networks over the past few years, the large cable operators (and their shareholders) are anxious to generate more revenue from these assets. After the runaway success of providing broadband Internet access to their customers, they're now poised to do the same with voice services. In fact, Cox Communications, an early cable telephony provider, just received the J.D. Powers award for telephone customer satisfaction – the first time a cable company has won the coveted award.

Like it or not, telcos have no choice but to respond to cable's threat to their customer base. But it's not a simple matter of buying a satellite television company for delivering entertainment services. Such a move would only add more complexity and cost to a telco's business model. It simply doesn't make economic sense to increase your asset base to expand your service portfolio. Instead, the solution is to deliver more

revenue-bearing services over a streamlined asset base, which is the fundamental rationale for converged, next-generation networks.

An economic cyclone toward NGN. Telcos today are learning that how they transform their networks is not a matter of evolving a legacy circuit-switch network to a packet-based one. That's like trying to evolve a bicycle to a jet; the two could not be more different.

Inside today's perfect storm of regulatory, technology, and competitive forces, a new co-evolutionary deployment model has emerged: Legacy networks will coexist with packet networks, but their coexistence will start a cyclone of change in favor of packet. That is, every time a new, revenue-bearing service is deployed over a converged, packet network instead of the legacy network, the cost of the packet network effectively declines relative to its revenue while just the opposite occurs in the economics of the legacy network. Eventually further investment in legacy networks will make less and less economic sense.

Of course, this co-evolution and ultimate transformation of how we communicate, access information, and entertain ourselves will take years if not a decade or two. Whenever a disruptive technology enters the marketplace, we need time to study its implications for delivering services, for the network assets, and for business models. The times, however, could not be better for starting packet network deployments and that is exactly what is reflected in flood of proposal requests across the industry today. Clearly the telecom turnaround is underway.

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