The Internet: Next Steps in the Evolution

by Richard P. West

The “network” was a given when the Coalition for Networked Information was formed over five years ago. The Internet, used primarily by the higher education community and to a lesser extent the federal government, had matured to the point that “content” deserved attention separate and distinct from the network per se. Discussions prior to that time had focused on the network as a way of exchanging messages or tapping into large mainframe or supercomputing resources at remote sites. While these uses of the Internet are information uses, CNI’s founders envisioned “content” available on the Net that previously had been available only via print forms.

The underlying infrastructure that the CNI program relies upon continues to get a lot of attention in the national media and in Congress. CNI has a keen interest in the spirit and results of these discussions, not only because they are important in their own right, but because deciding what’s good for promoting the development of network conduit versus what’s good for network content is not a simple matter. Let’s review the current status of the network.

Reforming the telecom industry

Most Congressional policy discussions don’t start with the idea of legislating Internet-related activities. Rather, the government is trying to enact a legislative reform of the telecommunications industry in response to the revolutionary technological and marketplace changes that started in the early 1980s with the break-up of AT&T. This break-up is often remembered as the “deregulation” of the telephone industry in the U.S., but it was actually a mandated “divestiture” by AT&T of its regional and local operating companies to create a more competitive marketplace for long-distance services and to allow AT&T to enter the market for computer systems and services. Although often used synonymously, “deregulation” and “divestiture” actually describe quite different processes and outcomes. Much of the current debate seems at cross-purposes because different parties place different priorities on “market structure” (i.e., who participates in what sectors of the market under what rules) versus “market functions” (i.e., the national as well as individual purposes to be served by the market and by what means). The Internet has been swept into this debate, and decisions arising from it will influence how the Internet will grow and be managed for years to come.

The long-distance phone service market has been a competitive one for a number of years now, although only three or four firms dominate that market and one of those, AT&T, is very much larger than the others. This is definitely a situation in which divestiture has led to competition, but how much competition makes for a “competitive market” worthy of the name? Certainly some of the expected benefits of a competitive environment (e.g., lower prices and constantly improving technology and quality) are now present in the long-distance voice and data services market-place. However, a market with only a few large providers cannot be considered a highly competitive one, and the market for local phone service is not competitive at all. So, two of the major targets of the current legislative reform effort are how to generate still more competition in the long-distance sector, and how to generate competition for the first time (since the very earliest days of telephony, that is) in the local one.

Changing technology and, more precisely, the integrating effect of digital technologies is the second, profoundly confusing, target of current federal and state telecommunications legislative reform efforts. Many, perhaps even most, services and functions that can now be provided over an integrated digital network have traditionally required their own delivery networks, often provided by entirely different firms. Voice, data, and video delivery systems have generally been built and regulated separately, and have also been subject to different industry practices and customer and government expectations. Parts of some of the resulting distribution systems are regulated, while others are not.

A “uniform code” (also known as the “level playing field”) for all telecommunications services, functions, and delivery systems is the ultimate goal of legislative and regulatory reform efforts. But it has proven to be very difficult to describe, let alone achieve. This is particularly so in light of the companion goal of wanting to increase competition, as the various “do’s and don’ts” of the uniform code are often viewed and
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Legislat ing the Internet

Unfortunately, throughout most of 1995 the only aspect of the Internet that has drawn the attention of the popular media and members of Congress is the existence of pornography, among other objectionable materials and behaviors. This attention is unfortunate not only because it eclipses the real lessons that the Internet experience can bring to the broader telecommunications reform debate, but because proposals arising from this attention seek to prohibit the “availability” rather than to manage the “accessibility” of certain networked resources and services. In so doing, they represent over-reactions that would not only constrain expression within consenting Internet-user communities, but would preempt, rather than assist, traditional roles and responsibilities of parents and teachers in favor of government-imposed, national standards.

CNI advocates the view that technical rather than legal measures are the way to address objectionable materials and behaviors in networked environments, and that the nation will be much better served by a vibrant, competitive, customer-oriented market for such technical measures than by the years of litigation and adjudication, regarding what materials and behaviors are and are not objectionable before the law, that will most certainly result from the legal measures some have proposed.

However this issue is finally addressed, there remains an important question regarding the regulation of local telephone service which will determine how many providers there may be in local markets and what prices will be charged for voice, data, and video services. The potential integration of video, voice, and data communication via digital distribution systems means that regulation, if any, in the new digital world will be different from what was true in the single, functionally differentiated distribution system environment. Changes here will affect higher education’s traditional special treatment in some areas, such as the reserving of video broadcast spectrum for higher education’s exclusive use. Although broadcast video will continue to exist, using integrated digital networks will be much more in higher education’s overall interest given the expanded range of resources and services enabled by integrated networks. The nature of higher education’s access to these systems will most likely be very different from what has been the case for access to broadcast systems. For instance, special reservations of capacity will be technically impractical at best, and such reservations may even be technically impossible.

Encouraging the evolution of the NII

What should be higher education’s position regarding telecommunications reform? I argue that the presence of the new, ubiquitous, integrated digital delivery system is essential, and that all efforts should be focused on means that assure proper management and coordination of the dispersed Internet. Reserving capacity on this new delivery system should not be a higher education priority; encouraging the rapid evolution of a national information infrastructure (NII) on the model of the Internet should be higher education’s overwhelming priority. I believe that this objective is best achieved by encouraging competition in all network environments and by the reduced costs and improved technologies that will occur as the result of this competition. However, I also believe that the deregulation of the local phone service is not the same as creating competition in those markets. If there are only one or two providers of network services in many or most local markets, then competition is not likely to be sustained.

We should concentrate our efforts on assuring a competitive Internet marketplace on the way to a competitive NII marketplace. Let’s find the will to avoid the temptation to seek the sorts of special treatment that higher education has traditionally enjoyed, and not to over-react to tangential issues such as pornography on the Internet. If we are not attentive to how telecommunications reform occurs in this Congress, and in our statehouses, we could end up without a competitive market, which will disenfranchise those of us who are counting on a low-cost, higher-value Internet and NII.

Unless we are very careful and diligent, CNI’s assumption that the network will take care of itself will be proven wrong, and the sorts of content-rich resources and services that have been CNI’s primary focus will prove to be impossible or too expensive for higher education.