



Hype

vs.

Reality

The New Telecom Infrastructure

By Dave Gunning

Boston's "Big Dig" central artery/tunnel project is the largest, most complex and technologically challenging highway project ever attempted in the United States. The city is replacing an outdated highway infrastructure with a new state-of-the-art highway system — an 18-year, 11-billion-dollar project.

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The reason for this undertaking? Traffic. And lots of it. The former elevated highway carried approximately 75,000 vehicles per day when it opened in 1959. Today it carries more than 190,000. The booming economy and popularity of the city has caused a surge in traffic no one could have predicted four decades ago.

Traffic. And lots of it is also creating new revenue opportunities and major headaches for telecommunications service providers. This time it's Internet traffic. E-mail, e-commerce, and World Wide Web traffic, generated by businesses and consumers, is causing an explosive growth in Internet Protocol (IP) transmissions over carrier networks.

We've all seen the curves (see Figure 1), which outline the explosive growth in Internet traffic.

According to the current hype, everyone is rushing to offer new Internet services while service providers are scrambling to support IP in order to remain competitive and take advantage of new revenue streams. As the exponential growth in IP traffic clogs the public network's arteries, so the current story goes, service providers that are today equipped to deliver traditional voice services are being forced to migrate overnight to solutions that can efficiently support data.

Reality: Voice for Dough, Data for Show

The reality, however, is that more than 80 percent of telecommunications carrier revenues, on a global basis, are derived from circuit-switched voice services. And voice will remain the major source of carrier revenues for quite some time to come. As a result, carriers are not willing to sacrifice voice revenues for the sake of migrating to new IP technology. The existing telecommunications infrastructure, like Boston's main artery, has taken decades and billions of dollars to build — making it difficult and expensive to replace.

Tearing down an entire city's highway system to begin construction of new roads is not an option. Instead, Boston's highway planners had to come up with a transitional infrastructure (e.g., new access roads, local loops) to support the burgeoning commuter traffic while the new highway system was being put in place.

Likewise, network operators need to continue to deliver high revenue voice services, while they build out new infrastructures for offering high-speed and value-added data services. Most carriers are finding that it is easier to support existing services on a new data-centric infrastructure than to try to adapt the existing circuit-switched network to support IP traffic. Hence a new road

