

View from the Top: The broadband boom

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From early morning calls to Europe to very late night meetings with China, sales manager Mike Kallbrier works around the clock from his home office to communicate with his clients, using his digital subscriber line. "My career is very dynamic," Kallbrier explained. "I rely on my DSL connection to allow me to effectively communicate with my clients and colleagues around the globe at the push of a button. Whether it's through video conferencing or sending and receiving voice mail online, I rely on having a strong connection at all times."

Without a doubt, DSL has become an integral part of the business world, and for home subscribers utilizing it for a host of applications, such as e-mail and Web access. Over the past decade there has been an explosion of broadband networks worldwide. According to the analyst firm iSuppli, by the end of this year U.S. broadband subscribers will total 35 million and China's will total 39 million. The firm also predicts the number of subscribers will reach nearly 350 million in 2009. The majority of DSL networks were built on a core standard known as ADSL. Designed to increase speed and availability, ADSL originally was developed to deliver up to 8 megabits of bandwidth per second to each home, depending on the length of copper from the phone company's offices to each location. In other words, the longer the length, the lower the speed. Later, the standards organizations approved ADSL2 delivering up to 12 megabits per second, then ADSL2(plus), which increased the top rate to 24 megabits. Some countries are beginning to deploy this version of ADSL. Japan has gone even further by deploying the latest version, ADSL2(double-plus), which delivers a whopping 50 megabits to each user.

In addition to ADSL, two other new technologies are taking the game to a new level. VDSL2 promises to deliver higher bit rates than ADSL for short distances. With optical access technology such as Passive Optical Networks, or PONs, there is the prospect of taking fiber all the way to each

home and delivering a gigabyte of traffic to each user, making the amount of data content coming in and out virtually unlimited.

Today, the broadband networks cater mostly to the user's need for fast Internet access. Service providers, on the other hand, are working to expand their choices of revenue-generating services and offerings for users. Voice over Internet Protocol, or VoIP, is finding the broadband pipe a comfortable medium to change the way traditional voice services are offered. VoIP users today have just started to take advantage of a plethora of capabilities: receiving home phone calls anywhere via a simple, portable telephony adapter or IP phone, or picking up messages from any phone or computer anytime. Along with the convenience and portability of VoIP, the reasonable prices and ease of one bill for voice, video and data services is extremely alluring to consumers. The Holy Grail of broadband access is the "triple play" -- when you can deliver voice, video and data on the same pipe to the end user.

The prevalent way of thinking among most telecom companies is to compete with the cable providers by offering the same video services. This involves offering broadcast channels as well as pay-per-view and video-on-demand under the IP Television umbrella. In order to offer IPTV services to the consumer, the telecom companies require broadband pipes to each home.

There are a few challenges to realizing the multi-play broadband-services vision. First, the more bandwidth needed, the more investment required to bring the larger pipes to the home. VDSL2, for example, requires telecom companies to bring fiber very close to the home. Although PON technology has reduced the optical equipment costs significantly, the costs of building a fiber network to a neighborhood is still significant and will take many years to implement fully. Telecom service providers are evaluating network architectures that support the delivery of Internet-based video services, and not burdening the future network by having it

deliver the analog broadcast channels that cable companies have been delivering for decades. It is inconceivable to be building next century's network based on last century's concept of services. IPTV service providers will be able to provide viewers with flexibility, quality and a variety of features unmatched by traditional cable networks.

Future generations will want access to desired video services instantly. ESPN, NBC, CBS and thousands of other sources of content will become simply the links on the Internet, available for those who want to watch that type of programming. The next generation does not want to watch only ESPN, but be able to look for specific programming on his or her favorite sport. So, ESPN will be viewed as a supermarket for sports-related content. This model is clearly focused on viewer-driven transactions.

Service providers should use this opportunity to change the game by moving consumers toward transactional video content, which can be supplied and viewed by anyone. This is sure to put their competition, the cable companies, at a disadvantage.

With new innovative broadband technologies continuing to change the lives of consumers and the way companies do business, we can expect the market to generate a steady increase in the number of subscribers. As the technology advances, people such as Mike Kallbrier can expect a whole new level of communications anytime, anywhere -- a quick seven-digit call to France on an IP phone with videoconferencing capability while sitting on the beach in Santa Cruz will become commonplace. Now that would be an exciting journey.

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