

## MARKET FOCUS

# Emerging markets: broaching broadband

In the first *Market Focus* of 2001, Chicago, Illinois-based commodities information integrator GlobalView Software looks at the potential rise of the emerging market for broadband

The most promising of the new emerging markets for traders appears to be the broadband industry. It is expected to be worth \$400 billion by 2005, say industry experts, as the internet and telecommunications develop further and global networking escalates.

Several heavyweights in the energy sector have staked their claim in this high technology arena. Their goal is to create a market for broadband services that will trade liquidity just like their conventional commodities – natural gas, electricity and petroleum products.

Because of the market deregulation in the past decade and the advent of new technologies, these big energy companies have thrived in the huge new trading markets in natural gas and electricity. They now see great potential in bandwidth – network transmission capacity – dealing and are making substantial investments to capture opportunities.

So far US energy majors Enron, Williams and Dynegy have made significant moves. All have created telecoms subsidiaries in the past 18 months that join the ranks of wholesale bandwidth suppliers such as AT&T, Sprint and WorldCom. These energy companies anticipate acceleration in the already rapid price declines for broadband\*. They also believe that electronic exchanges will underpin this evolving marketplace.

These energy companies view the broadband landscape as another potential free-for-all similar to the natural gas business of a decade ago and the electricity business of the past few years. Each firm was instrumental in establishing efficient trading markets for natural gas and electricity and helped to commoditise them. "Commoditise" in this

context refers to the evolution of a material, good or service to a commodity where the price is a pure function of supply and demand.

To date, however, the high-bandwidth internet has been somewhat slow to emerge. As technology develops, widening the range of business and consumer services, it stretches the limits of the current infrastructure. This is partly due to the segmentation of the internet, which is not so different from the power grids that carry electricity. As the broadband consumer connections increase in size and distribution, the infrastructure demands expand significantly.

The internet is composed of a series of separate fibre-optic networks interconnected at a handful of

points – network access points (NAPs) – around the world.

The major, or so-called "tier one", backbone providers are generally considered to include UUNet; Sprint Corp; AT&T Corp; Genuity; Cable & Wireless, which bought MCI's internet backbone in 1998; and several others, including Qwest Communications, Global Crossing, Level3 Communications, Williams Communications and Enron Broadband Services.

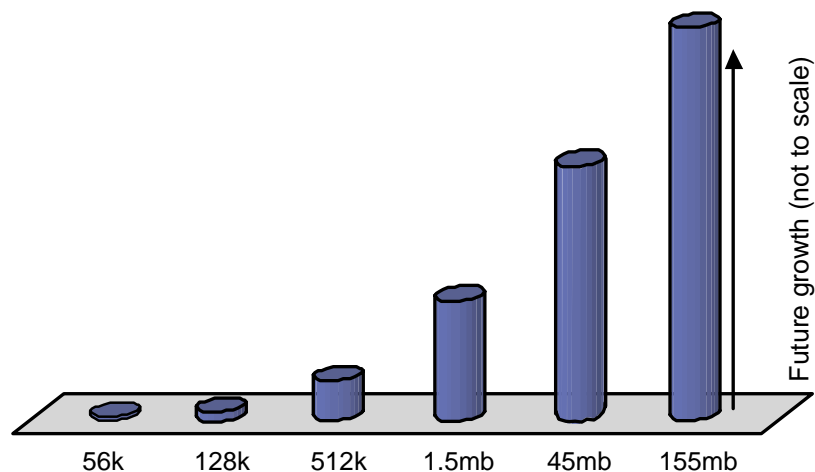
Backbone providers are the major information highway trunk lines – high-capacity networks that link together networks of lower capacity.

Core internet traffic is generally exchanged at the dozen or so worldwide NAPs. Internet service

providers (ISPs) connect directly to backbone networks, or to larger ISPs with direct connections. Many providers are moving away from these known congestion points to private peering in multiple locations.

The quickly evolving dot.com industry envisages high-value applications that require large amounts of dedicated bandwidth. In the current landscape, reserving the necessary bandwidth means establishing long-term relationships with vendors that negotiate price locks. Such price locks can extend over years. This makes it very difficult for broadband consumers – typically small and medium-sized telephone and ISP companies – to buy just the right amount of bandwidth needed for

Figure 1: Internet connection bandwidth: future growth



Source: GlobalView

The relative size of the home and office connections to the internet have grown quickly with the advent of cable and DSL (digital subscriber line) connections, which typically have between 56k and 512k of bandwidth. T1 connections are dedicated telecoms lines with 1.5 megabits a second (mbs) of bandwidth. A DS-3 fibre moves data at a rate of 45 mbs. Projections show that potential speeds of 155mbs can be achieved in the next few years.

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average use while allowing for the occasional spikes. To accommodate potential demands, overbuying is required, leaving expensive capacity largely unused.

## INSTANTANEOUS

This is where the new exchange opportunities lie. With the establishment of standardised and tradable contracts, consumers will be able to buy and sell almost instantly in a liquid market-place. Until now these markets have been barely more than a vision. But leaders in trading markets with proven track records – such as Dynegy and Enron – have already created the infrastructure and started to offer trading via electronic exchanges.

Traditionally, contracting for bandwidth entailed multiple-year contracts and waits of several months for actual connectivity. Transactions took weeks to negotiate. By contrast, an electronic system that automates key parts of the process can enable the trading of an individual bandwidth contract in as quickly as 15 minutes. Many analysts see great prospects in these developments.

One contender in the electronic markets is EnronOnline. Since its launch in November 1999, it has attracted more than \$250 billion in trades. If it is as successful in broadband as it has been in natural gas and electricity, it could trade that amount in broadband by 2005. Based on a spread of 3% between bid and ask prices, that could represent \$7.5 billion in trading profits. The financial markets have validated this view by directly tying a \$10 billion market cap increase directly to Enron's bandwidth trading initiative.

## TRADING FLOOR

In February 2000, the Bandwith Exchange (Band-X) – a trading floor for global telecoms capacity – launched the world's first trading floor for internet transit capacity, revolutionising the way that internet connectivity is bought and sold.

Band-X now has 11,000 members, and estimates it transacts more than 80% of all trades executed within the telecoms business-to-business exchange industry. More than \$40 million worth of bandwidth has changed hands via the reverse auction process. This process involves buyers posting their need for a product or service, then suppliers bidding to fulfil that need.

In April 2000, Band-X received a \$40 million joint investment from global investment banks Goldman Sachs, Morgan Stanley Dean Witter

Private Equity and Chicago, Illinois-based Madison Dearborn Partners.

So energy companies are clearly well suited to broadband trading. As a result they have put substantial investment into the broadband arena. Dynegy bought Extant, a Colorado telecoms company, for \$188 million earlier this year. With that purchase came more than 80,000 miles of fibre-optic network and a presence in more than 40 US cities. Also, Williams has laid more than 33,000 miles of fibre to date, more than double that of Enron's network.

These networks can be compared to those of specialised telecoms companies, such as Global Crossing, which has plans to lay more than 100,000 network miles, and Level3, with more than 25,000 miles.

Given the energy sector's recent strength, these powerhouses are well situated to continue heavy investment in broadband infrastructure. Trading operations will grow increasingly stronger. ■

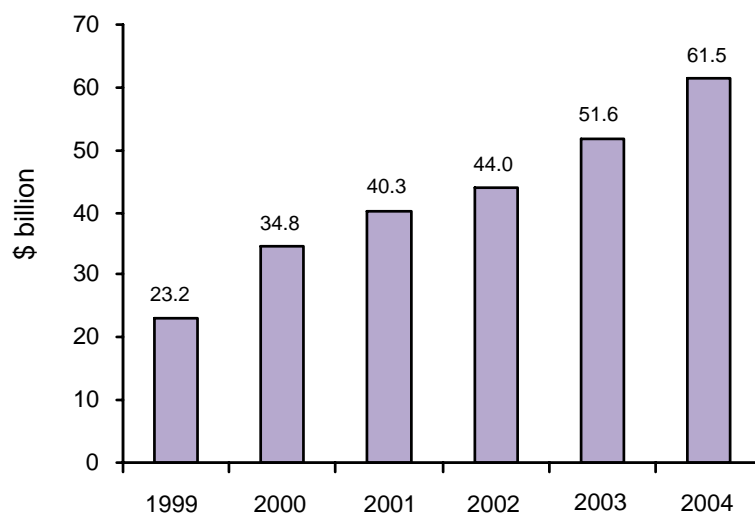
\* Broadband prices have been declining at a rate of more than 30% a year. Declining bandwidth

prices indicated by the bandwidth world composite index published by Band-X are as follows: May-00: 41.2; Jun-00: 38.3; Jul-00: 37.5; Aug-00: 34.8; Sep-00: 34.0; Oct-00: 33.1

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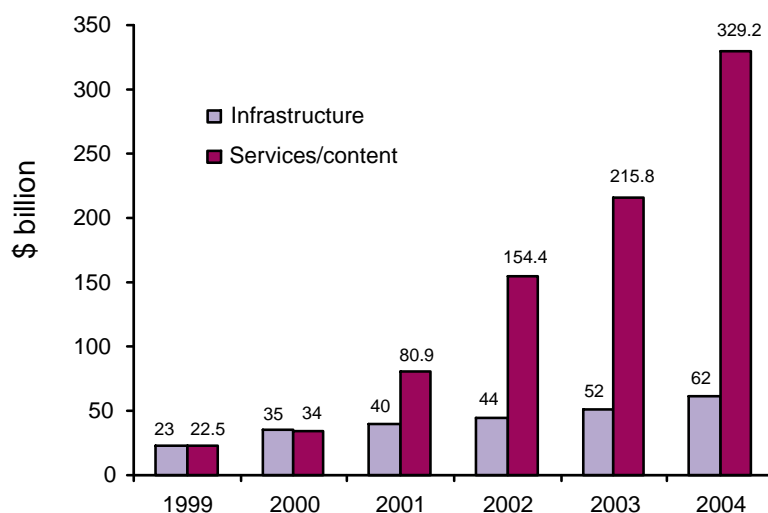
Figure 2: Internet service provider revenue forecast, 1999–2004



Source: Cahners In-Stat Group

The growth projection for internet service provider infrastructure revenues indicate sustained growth for the next several years.

Figure 3: Worldwide broadband forecast revenues, 1999–2004



Source: Cahners In-Stat Group

The revenues from broadband infrastructure are forecast to demonstrate tremendous growth in the next few years, but will be surpassed greatly by the growth in services and content sold over the networks.