

Capsule Summaries of Trend Data for Broadband

A Monthly Staff Report (The focus this month is on fiber deployments and weakness of competitors)

TIA Report:

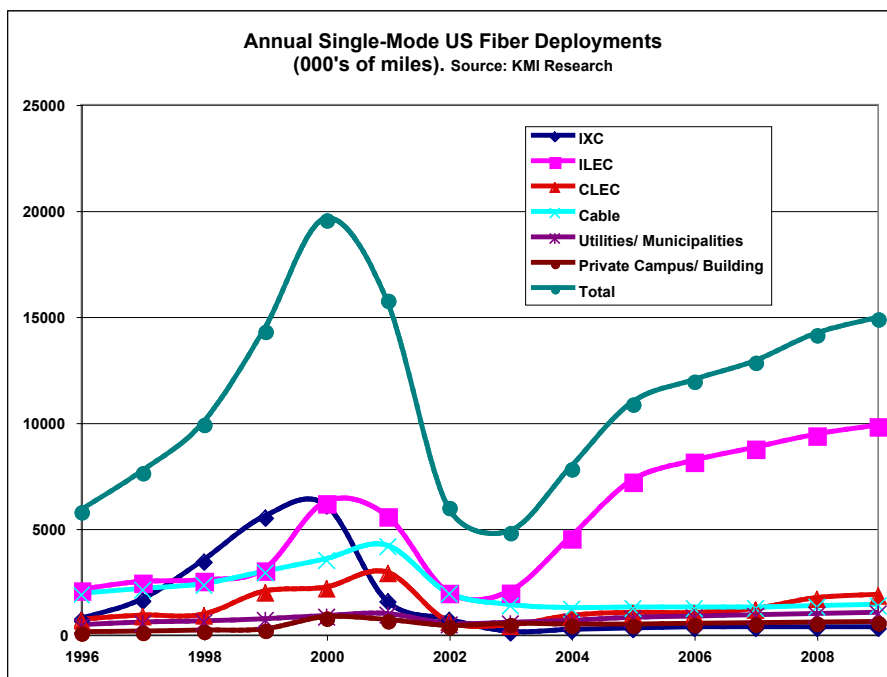
Fiber Deployments Boom, Paced by ILECs

The equivalent of almost 10.9 million miles of fiber was deployed last year. That's a doubling in just two years, to about 10 percent more than in 1998, according to the Telecommunications Industry Association's annual Market Review and Forecast. "Total fiber deployment rose 39 percent in 2005, following a 62.5 percent increase in 2004," the report says. TIA predicts a continued climb but at a slower pace, with growth averaging more than 8 percent a year through 2009.

Spending on fiber will also grow, from \$9.5 billion in 2005 to about \$13 billion in 2009, TIA and KMI Research predict. That's for fiber alone and doesn't include spending on ancillary equipment, TIA says. The equipment total was \$7.6 billion last year and should grow about 5 percent annually, through 2009.

While the fiber pace for 2005 did not match the 1999-2001 peak years of the irrational dot.com boom, Incumbent Local Exchange Carrier (ILEC) deployments set a record in 2005, more than 7.2 million miles. The previous peak for ILECs was 6.2 million miles in 2000.

In fact, two-thirds of fiber deployment last year was by ILECs. The CLECs – Competitive Local Exchange Carriers – deployed almost 1 million miles, also bettering their 1998 pace and up 17 percent over the super-strong 2004 pace. Municipalities and municipal utilities were up 23 percent – more than any years in history except for 2000 and 2001. Cable companies have not been idle, either. Their deployments held



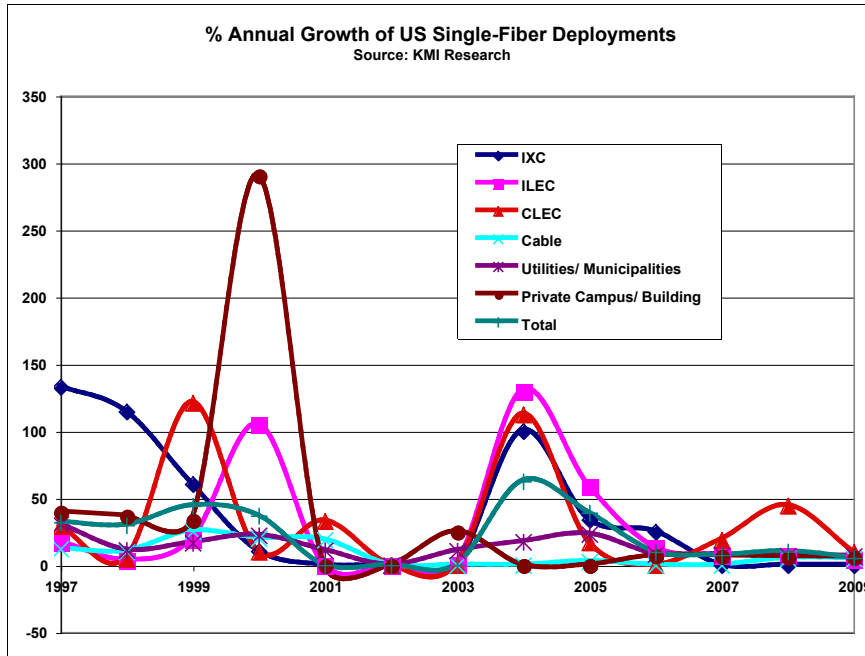
ILECs are pacing new fiber deployments, and are in fact installing more fiber than at any time in history, according to KMI Research data released by TIA. IXC, CLEC and cable deployments, which fueled the peak in 2000, are growing again but are far from their highs.

steady at more than 1.2 million miles, about 11 percent of the total for 2005. The big drop, of course, has been among IXCs (Inter-exchange carriers, organizations that provides interstate ATM services). Major IXCs like MCI and AT&T have, in fact, been absorbed by ILECs.

The fiber rebound of the past two years is "an ironic development" and "stunning" according to TIA, given the prevailing view that so much excess fiber capacity would depress equipment spending for years. Spending during the latter part of the 1990s and the early part

of the current decade was running at unsustainable levels as carriers focused on expanding long-haul capacity between major cities to accommodate the expected explosion of Internet traffic. Internet traffic did grow, but did not expand as fast as anticipated, TIA noted.

The recent jump in deployment, according to TIA, reflects the facts that the nature of the telecommunications market has changed, and that excess fiber supply in one area cannot offset insufficient supply in another. When Verizon decided to go into the televi-



ILECs also led in year-to-year percentage growth last year, but deployments by CLECs, municipalities, and IXCs (from a low recent base) grew strongly as well. Note the anticipated jump for CLECs at the end of the decade.

sion distribution business using fiber to the home, new fiber had to be deployed. Thus, aggregate capacity was less a predictor of future fiber needs than was originally believed.

The following characteristics of the marketplace today do not describe the market of 2000, according to TIA:

- Cable system operators are significant competitors to ILECs in the landline market.
- Broadband is the dominant Internet access technology.
- Wireless is the dominant voice communications technology.
- RBOCs offer long-distance service in

their own markets.

- CLECs without their own infrastructure face major hurdles.
- Landline subscribership is declining.
- VoIP is becoming popular.
- Bundled services and flat-rate pricing are common pricing models.
- Television is an important service to attract telephone subscribers.
- Wi-Fi has become a popular wireless networking technology, extending WLANs in homes and businesses.

Broadband users spend more time online, visit more Web sites, download more high-volume content such as music, movies and video games and send more high-volume content such as photographs than do dial-up users.

TIA, perhaps not realizing that new CLECs are being created by developers, is a bit pessimistic about CLECs, noting that non-cable CLEC deployments declined until two years ago, but increased as the surviving companies have become financially healthier and better able to compete. "Going forward, CLECs will no longer be able to rely on leasing fiber from ILECs. Those that choose to remain in the market will need to deploy their own fiber. CLEC fiber deployment will rise to a total of 5.6 million miles over the 2006–09 period."

Yankee Group:

Consumers Say They Need Broadband, but Price Still an Issue

Broadband is the preferred access technology for most Internet users in the US, but according to the Yankee Group, there are still plenty of people who are sticking with dial-up. The most common reason US consumers don't subscribe to broadband is that it's too expensive, The Yankee Group says in a new report. Less than 10 percent are not able to get broadband access in their area, and only 14 percent say dial-up meets their needs.

Although recent Associated Press data

from Ipsos Public Affairs found that only 37 percent of online households in the US used dial-up by December 2005, compared to 61 percent who used broadband, and although the Yankee Group estimates that dial-up use will fall through the rest of the decade, accounting for less than 20 million online households by 2009, growth could be higher.

By then, there should be about 66 million broadband households, out of 115 million US households overall. Yankee Group says that despite promotional price

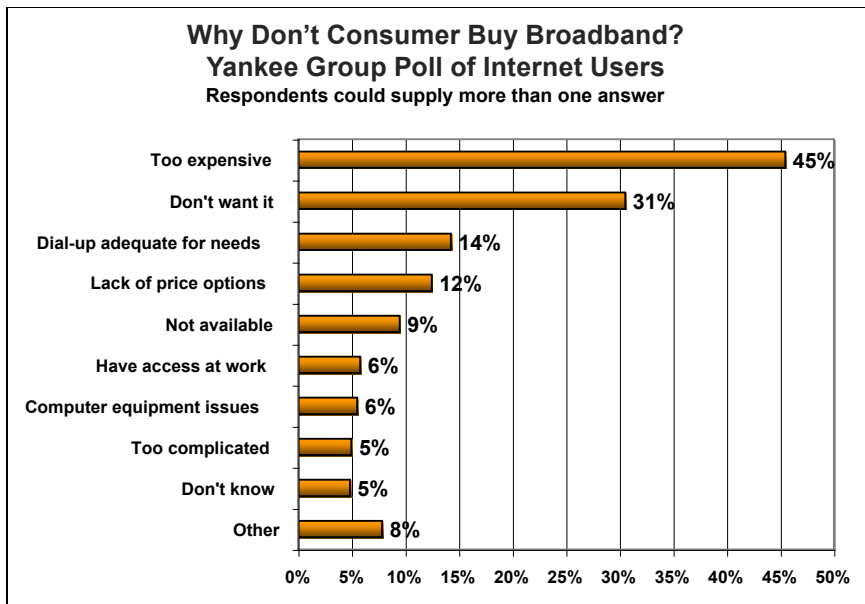
cuts for DSL (which often cover slower connection speeds and eventually expire, shooting the price up), broadband is more costly than dial-up, especially for truly high speeds. Presumably, dial-up consumers have little need for tasks beyond e-mail, IM and simple Web browsing, which are doable through broadband, and want to keep their monthly expenses low.

Price isn't the only factor. More than 30% of consumers say that they just don't want broadband, and about 14% say they

feel dial-up is adequate for their needs.

Yankee Group says the survey shows that there are some ways operators can entice dial-up users to make the switch, mostly involving price. Lowering the price of broadband, or making less costly options available, could convince more stragglers to up their speed. But they face a harder time convincing those who feel that they just don't want it. Bringing these people over requires an educational effort that demonstrates the advantages of broadband.

More than 45 percent of consumers polled said broadband is too expensive to consider; 12 percent (mostly from among the 45 percent) complained about lack of pricing options. But only 14 percent said dial-up is adequate for their needs.



In-Stat: Satellite TV Revenue Rising Faster than Subscriber Base

Thanks to price increases, digital Direct-to-Home (DTH) pay-TV revenues continue to grow at a faster rate than subscribers, reports In-Stat. This makes DTH a less attractive competitor, compared to cable or fiber. But revenues were still \$46 billion in 2005 and will rise to \$80 billion in 2009, the high-tech market research firm says.

“In countries where DTH pay-TV has been available for over five years, as in North America and Europe, the market is mature and subscriber growth is slowing,” said Michelle Abraham, In-Stat analyst. “Where DTH pay-TV platforms were launched after 2000, subscriber growth rates are higher. In India, for example, DTH pay-TV subscribers are expected to have tripled in 2005.”

In-Stat found the following:

- By the end of 2008, there will be 100 million digital DTH pay-TV subscribers, continuing the DTH reign as the top digital TV platform.
- The expected launch of a DTH pay-TV platform in China in 2006 or 2007 will help make Asia the fastest-growing region for Direct-to-Home pay-TV subscribers.

Mobile Phone and Data Pricing Under Pressure

Lack of perceived value by consumers for 3G bandwidth indicates continued downward pressure on cellular data pricing, and will also dampen prospects for for-pay Wi-Fi service providers and aggregators, reports market research firm In-Stat. Sales are trending downward for Wi-Fi equipment as well.

Nevertheless, because consumer enthusiasm for free Wi-Fi is ample, Wi-Fi hotspot operators do have an opportu-

nity to exploit the technology's low barriers to entry.

“Both cellular and Wi-Fi are currently serving mobile data users” says Allyn Hall, In-Stat analyst. “However, so far, neither service has found the sweet spot, the perfect balance of speed, coverage, and price.”

Challenging that, Google and Skype have invested in a startup that will assist hotspot owners to start charging for Wi-Fi access, an idea that ISPs – and appar-

ently consumers – generally oppose.

A recent report by In-Stat found:

- Among Wi-Fi users, more than 60 percent sometimes or always plan their travel with Wi-Fi availability as a consideration.
- 1Q05 year-on-year Wi-Fi revenue and shipment growth was strong, but quarter-on-quarter growth figures show an overall slowdown.
- According to an In-Stat consumer survey, laptop/notebook computers are

used for mobile data almost twice as often as cell phones.

- More than one-third of Wi-Fi users use only free Wi-Fi connections, and 18.9 percent use Wi-Fi only at home or

at work. Nearly two-thirds (61. percent), however, also said they use commercial hotspots.

The report, "3G and Wi-Fi: In Search of the Sweet Spot" features the results of

a proprietary consumer survey covering their use of and preferences regarding 3G and Wi-Fi data services.

For more information visit them at www.in-stat.com.

Cable Telephony Service Worldwide Revenues to Hit \$10 Billion by 2009...But Telco VoIP Revenues Also Climb

Yes, VoIP from Cable companies is cutting into telco revenues. Worldwide cable telephony service revenues rose from \$4.5 billion in 2004 to \$5.6 billion in 2005, and are projected to reach \$10 billion by 2009, reports In-Stat. The widening availability of VoIP-based cable telephony services has resulted in thousands of new cable telephony subscribers for operators like Time Warner Cable and Cablevision in the United States, Videotron and Shaw Communications in Canada, and Liberty Global in Europe. The high-tech market research firm also notes that VoIP is increasingly becoming the technology of choice for cable operators.

"The key attraction for cable operators is the cost advantage that VoIP offers in comparison with circuit-switched service," says Michael Paxton, In-Stat analyst. "Based on our analysis, it costs between 17 and 25 percent less to provision a VoIP cable telephony subscriber than a traditional circuit-switched cable telephony subscriber."

A recent report by In-Stat found the following:

- VoIP-based cable telephony is having a big impact in the U.S. Fueled by Comcast, Time Warner Cable, and Cablevision, In-Stat projects that US cable telephony subscriber households will reach 4.4 million by the end of 2006.
- Total worldwide VoIP cable telephony subscriber households are expected to reach almost 7 million by year-end 2006.

- US cable operators are beginning to look beyond wired cable telephony services to the wireless world. In November 2005, several leading cable operators announced an agreement with Sprint Nextel to develop a wireless telephony option for cable TV subscribers.

For more information on this report, "Cable Telephony Service: VoIP Drives Subscriber Growth" see www.in-stat.com.

In Europe, however, telcos and other

Middle East and Africa. "Twelve to 18 months ago the VoIP services that were gaining popularity very quickly were Vonage in North America and Skype over here in Europe," he said.

Vonage holds less than 1 percent of the European market, while all other VoIP providers have 3.5 percent, combined.

A similar situation is taking shape in North America, with cable and ISP companies now sending 53 percent of all VoIP minutes. Vonage is a clear but

The increasing trend toward ISPs is likely due to the benefits of bundling with other services like Internet access and cable TV. Customers are much more likely to try a service if it's provided by a company that they already deal with and trust. Obvious examples of ISP-branded VoIP services include Shaw Cable in Canada and Time Warner in the US.

ISPs are now supporting more VoIP minutes than providers of free PC-to-PC VoIP services such as Skype, according to new figures from broadband management firm Sandvine.

The telcos offer VoIP systems ranging from just voice to integrated "triple play" services for voice, video and data, and account for 51 percent of all VoIP minutes, beating Skype, which has 45 percent, according to Chris Colman, Sandvine's managing director for Europe, the

distant second with a 21.7 percent share, while Skype trails with 14.4 percent, and all others account for 10.9 percent.

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