FTTH Equipment Sales Take Off as Business Case Improves

Worldwide sales for both major categories of fiber-to-the-home equipment rose during the first quarter, says Infonetics Research (www.infonetics.com). Passive optical network (PON) equipment sales rose by 9 percent, reaching $336 million, and Active Ethernet FTTH equipment revenue rose 10 percent, hitting $81 million.

Four trends are driving FTTH equipment markets, according to Infonetics:

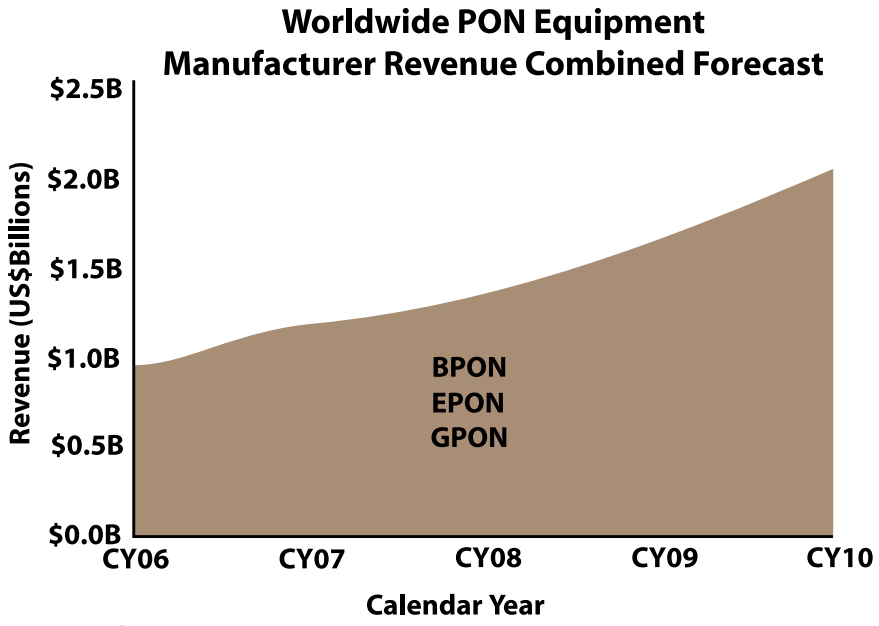
• **High-bandwidth entertainment.** Service providers are upgrading their networks to compete with cable and satellite providers and to support the demand for video, online gaming, P2P networking, and other bandwidth-intensive applications.

• **Video on demand.** Content providers are offering new on-demand and broadband video services that eat up more bandwidth into the home.

• **Residential amenities.** Residential and commercial developers are trying to outdo the competition with better, more high-tech offerings.

• **Economic development.** Municipalities around the world, notably in Amsterdam, Stockholm and Dubai, are upgrading their networks to Ethernet FTTH to keep and attract new jobs in an age where access to digital information is paramount.

In addition, the business case for investing in FTTH is improving for two reasons: First, innovations by FTTH component suppliers are bringing down the cost of FTTH ports, allowing service providers to recoup their investments faster. Second, service providers are succeeding in signing up FTTH subscribers both in Asia Pacific and North America. "A growing number of service providers are becoming convinced that FTTH is the only way they can continue to supply the applications digital homes will demand over time," says Jeff Heynen, directing analyst at Infonetics Research.



Source: Infonetics

Other report highlights:

• Asia Pacific, particularly Japan, accounts for 86 percent of all PON subscribers; Korea is on track to add 700,000 to 800,000 EPON subscribers by the end of 2007. However, Asia's share will decrease in 2008 as Verizon, AT&T, France Telecom, and Telefonica GPON deployments hit volume.

• EPON subscribers made up 64 percent of worldwide subscribers, BPON 33 percent, and GPON 3 percent in 2006.

• Tellabs, with its ongoing shipments to Verizon, maintains its strong lead in BPON revenue market share; Hitachi is a distant second, followed closely by Motorola.

• Mitsubishi leads in the EPON market, followed by Sumitomo and Fujitsu.

Growing Broadband Connections Stimulate Online Activities

A new survey of US consumers, conducted by the trade group Consumer Electronics Association (www.ce.org), finds that close to three quarters of American adults use broadband Internet access either at home or at work, that the number of home broadband users will continue to rise, and that having broadband is directly correlated with use of the Internet in everyday activities. The survey concludes that:

• Broadband adoption in the US is robust. 57.8 million US households, or 51 percent of all households, now subscribe to broadband at home, an increase of 21 percent in the last 12 months.

• Broadband is the primary internet connection in US homes. Seventy-five percent of US adults with Internet access at home subscribe to broadband.

• Broadband access outside the home is a vital component of total access. More than 42 million adults regularly access a broadband connection outside the home.

• Seventy-two percent of all US adults regularly access a broadband connection. In addition to 51 percent of adults with home broadband, 21 percent of adults without home broadband regularly access a broadband connection outside the home.

• Speed matters. Sixty-five percent of current broadband subscribers upgraded for a faster Internet experience.

• Broadband adoption growth will continue. Twenty percent of non-subscribers expect to have broadband at home within the next two years.

• Increased digital entertainment use is a major driver of adoption. Current subscriber adults with Internet connectivity at home point to increased media-rich digital entertainment use as a key motivating factor in the decision to upgrade to broadband.

• Price is a major deterrent to broadband adoption. Fifteen percent of all non-subscribers say price is the number one reason they don't have broadband at home.

Percent of Households Engaging in Online Activities			
Broadband promotes Internet activity for common functions like e-mailing and Web surfing as well as for less common functions like VoIP or uploading movies.			
Online Activity	Broadband Connection	Other Home Internet Connection	Difference
Online Banking	66%	39%	27%
Getting Directions	83%	58%	25%
Viewing Video Content	46%	23%	23%
Streaming Audio	46%	23%	23%
Getting News	74%	52%	22%
Downloading Music	42%	21%	21%
Telecommuting	38%	22%	16%
Home Networking	23%	8%	15%
Shopping	73%	59%	15%
Surfing the Web	85%	71%	14%
Uploading Photos	58%	45%	14%
Downloading Photos	52%	39%	13%
Posting on Blogs	18%	6%	12%
Playing Games	58%	47%	11%
Reading Blogs	27%	17%	10%
Instant Messaging	47%	38%	9%
Downloading Movies	14%	5%	8%
E-mailing	94%	86%	7%
Social Networking	33%	26%	7%
Buying or Selling on eBay	38%	31%	7%
VoIP	8%	2%	6%
Uploading Movies	9%	5%	4%
Uploading Music	28%	25%	3%
Homework	45%	43%	2%

Source: Consumer Electronics Association

FTTx Subscriptions Expected to Reach 64 Million by 2011 – "Service Providers Cannot Afford to Stand Still" Opportunities for Fiber Deployments in Europe

Fiber-to-the-Premises and WiMax will be among the fastest-growing access technologies in the next five years, according to a report released by research firm Strategy Analytics (www.strategyanalytics.net). Fiber will account for 12 percent of the 536 million worldwide broadband subscriptions expected by 2011, and DSL will account for more than half of the market.

Broadband service revenues will surpass $150 billion in 2011, with Europe, Asia Pacific and North America leading the way. This represents a 13 percent annual growth rate. Average revenues per user for broadband will remain stable on a worldwide level.

"Service providers cannot afford to stand still with current access technologies," says David Mercer, VP of Strategy Analytics' Digital Consumer Practice. "Fiber to the home will eventually provide the ultimate broadband experience for many users, including high-definition TV and lightning-fast interactive Web-based services."

Strong Growth in Home Networks Fuels Demand for Customer-Premises Equipment

Driven by ever-increasing numbers of residential broadband subscribers, their desire to share bandwidth, and falling prices for networking equipment, the worldwide installed base of home networks is expected to grow by more than 35 percent in 2007. Asia is a significant contributor towards this growth, reports In-Stat (www.in-stat.com). Home network growth will slow over the next few years, but will remain solid, the high-tech market research firm says. And in a few years, the installed base of equipment will be large enough to present good opportunities for replacements and upgrades. Faster networking standards, including gigabit Ethernet, 802.11n, VoIP, and TR-69 are all drivers for customer premises equipment upgrades and replacements.

Recent research by In-Stat found that:

- Worldwide CPE unit shipments grew almost 20 percent in 2006 to 127 million.
- By 2011, more than half of worldwide CPE revenue will be accounted for by gateways.
- By 2011, routers still account for a higher percentage of wireless units than DSL gateways. Driven by growth in China, Asia/Pacific's share of routers will continue to increase through 2011.

Customer Satisfaction Favors Telco TV

For decades, telecommunication companies and cable companies operated as virtual monopolies, each with its own domain. Telecom companies provided phone service, and cable companies provided video. But with the convergence of technology, telecom companies and cable companies increasingly find themselves encroaching on each other's turf. In such a competitive environment, customer satisfaction becomes increasingly important.

A new consumer survey by research firm CFI Group (www.cfigroup.com) finds that consumers are generally happier with telcos than with cable companies, and that their satisfaction, together with their preference for service bundles, translates into demand for telco triple and quadruple play services.

According to the survey, while more customers buy bundled services from cable companies today, telecom companies have the edge going forward. Primarily because of superior customer service, customers are more satisfied with DSL than with cable Internet service, more satisfied with satellite television resold by telcos than with cable TV, and more satisfied with telco wireless plans than with wireless services resold by cable companies. In addition, the IPTV services that telcos are beginning to implement are making telcos even stronger contenders. Overall, survey respondents preferred telco bundles to cable bundles by 54 percent to 44 percent.

The competitive strength of telco TV – at least as delivered over fiber-to-the-home networks – was demonstrated recently by research firm OneTRAK (www.onetrak.com), which analyzed data from the Massachu-

setts Department of Telecommunications and Cable for 34 Massachusetts cities and towns a few months after the introduction of Verizon's FiOS TV. OneTRAK concluded that, while incumbent cable companies lost customers, overbuilders such as RCN were being hit disproportionately and were effectively insulating the incumbent cable providers. Interestingly, given the CFI Group's finding that customers were satisfied with satellite service (see above), as many as 40 percent of FiOS TV subscribers appeared to be coming from DBS. One possibility is that since Verizon had resold satellite TV along with its DSL offering, it was simply upgrading its own customers from a DSL/DBS bundle to a FiOS Internet/TV bundle.

In all cases, OneTRAK points out, Verizon's entry expanded the market, causing overall wireline video penetration to rise.

Yankee Group: Consumer VoIP Buoyed by Cable Telephony

Consumer VoIP isn't just a residential phone equivalent anymore, says a new study by Yankee Group (www.yankeegroup.com). VoIP is becoming an integral part of Web-based advertisements, Web site assistance and other click-to-call solutions. Also, demand for "anywhere connectivity" is creating a market for mobile VoIP.

Led by cable MSOs and broadband VoIP providers, consumer VoIP grew more than 125 percent in 2006 to reach more than 9 million subscribers, Yankee Group says. Consumer VoIP services penetrated 9 percent of all US households in 2006, up from 4 percent in the previous year. The report concludes that the opportunity for VoIP on dual-mode mobile phones will increase as the number of units in use rises from 913,000 in 2006 to 22 million in 2011.

More key findings:

• Cable VoIP experienced the strongest growth in 2006 (167 percent).

• By 2011, the majority of residential VoIP users will be subscribers to cable-company bundles.

• The broadband VoIP market continues to see greater competition, with new market entrants bringing innovative solutions.

• There is significant potential for VoIP with FTTH in the market, considering the ongoing initiatives by Verizon with FiOS and AT&T with U-verse.

Analysys: Even VoIP Can't Keep Europeans from Abandoning Fixed Voice Lines

Europeans are quickly abandoning their landlines, particularly in those countries that have experienced the most traffic migration already, according to a new report published by Analysys (research.analysys.com). VoIP appears to have little impact on the migration of voice traffic to mobile networks – paradoxically, it appears to release consumer cash for additional spending on mobile services.

"In many markets it looks as if fixed voice is going to suffer not the slow and lingering decline many have predicted, but a rather rapid one," says report co-author Dr. Alastair Brydon. "At the current rate of traffic migration, 90 percent of all voice minutes in Finland will originate on mobile phones by 2008."

Key findings from the new report include:

• In five Western European markets, more voice minutes originate on mobile networks than on traditional voice and broadband networks combined.

• Finland had the highest level of fixed–mobile traffic substitution in Western Europe in the fourth quarter of 2005 – mobile-originated calls accounted for 64.6 percent of voice traffic. However, the country also experienced the greatest increase in this proportion during 2006, by 10 percentage points, to reach 74.6 percent in the fourth quarter of 2006.

• Traffic substitution is also progressing rapidly in markets that have previously undergone little substitution. Germany has experienced much less traffic substitution than the Western European average; only 17.5 percent of its voice traffic originated on mobile phones in the fourth quarter of 2005. However, this proportion increased by 6.8 percentage points – one of the highest increases in Western Europe – to reach 24.3 percent in the fourth quarter of 2006.

"The widespread introduction of home-zone tariffs in Germany is having a significant effect, which demonstrates that mobile operators' actions can significantly increase usage," says co-author Dr. Mark Heath. "Following years of usage stagnation, average outgoing mobile voice usage per subscriber increased by 23 percent during 2006."

"What is particularly worrying for fixed-line operations is not that FMS is happening, but the pace at which it is happening," adds Rupert Wood, principal analyst at Analysys Research. "Of course, fixed-network operators are looking to different sources of revenue for growth, but the accelerating decline in core voice revenue is damaging at a time when they are embarking on long and expensive next-generation network re-engineering programs."

China's Broadband Growth Slowing

The rate of broadband growth in China is slowing dramatically, leaving a digital divide between city and rural areas of the world's most populous nation, and challenging operators to find new sources of revenue growth.

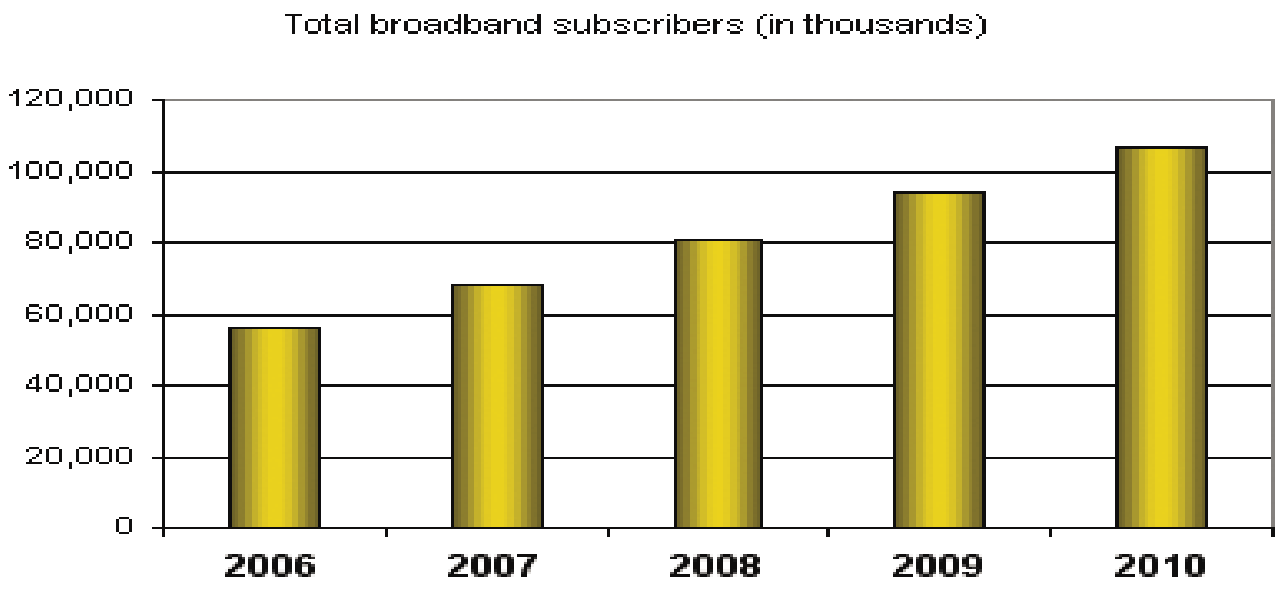
A new report from Ovum (www.ovum.com) finds that after 114 percent growth in 2004, China's broadband growth slowed in 2005 and 2006 to 57 percent and 38 percent respectively. Ovum expects double-digit growth to continue for the next two years, though at lower rates.

But while the big-city broadband market in China is approaching maturity, like the markets in many more developed countries, the large rural markets remain almost untapped. Household broadband penetration in China stood at only 13 percent in December 2006, and is expected to reach 21 percent, or 106 million subscribers, by 2010. This is nowhere near market potential, says Kevin Lee, an Ovum analyst based in Hong Kong. He comments, "The slowdown will entrench a digital divide."

Lee believes that slower broadband revenue growth also leaves China's fixed network operators vulnerable to ongoing revenue losses caused by fixed-to-mobile substitution. Unless growth can be maintained, these operators will see their total revenues shrink. "The lack of competition between the main operators is a major factor, because it keeps prices higher than necessary," says Lee. Higher prices mean lower uptake.

Despite the booming Chinese economy, demand for broadband will continue to be boosted by increased Internet and PC population, emerging applications such as peer-to-peer and operators' push for IPTV. Cable operators and other broadband providers do not have the coverage, financial power and international gateways needed to compete with these operators.

Regulatory issues also play a part. Lack of clarity about spectrum policy blocks the wireless broadband option. Conflict between two powerful regulatory agencies is a barrier to the deployment of IPTV services over broadband networks.



Source: Infonetics

Internet Video: Coming to a TV Near You

One in five broadband homes will soon have the capability to watch some form of Internet-based video on the TV set, according to Emerging Media Dynamics' (www.emergingmediadynamics.com) analysis of the Internet-video-to-TV market. By year-end 2007, around 12 million homes – about 20 percent of US broadband homes –will be equipped with one of several Internet video-capable TV devices, including gaming consoles; special appliances and extenders; multichannel video distributors that use IP technology as the underlying transport mechanism; all-purpose digital TV set-top boxes; and high-end TV sets.

This ratio will rise to slightly more than two-thirds of all broadband homes, or around 72.8 million households, by year-end 2017, a rapid rise that exceeds even the dramatic growth rate of broadband connectivity itself. But the mere availability of devices capable of turning TVs into Internet video viewing devices doesn't guarantee that viewers will actually use that capability, Emerging Media Dynamics warns.

Japan Leads in Communication Systems

Japan continues in the forefront of the world market for cutting-edge communication technologies, according to a report by Australian research firm Budde Communications (www.budde.com.au). The report calls Japan a leader in the use of third-generation mobile (3G), fiber-to-the-home broadband and Internet telephony. The country's 3G mobile market is already outpacing last year's annual growth rate, a quarter of broadband services will have fiber-to-the-home by the end of 2007, and about 18 million Japanese will be using IP telephony services.

In Japan's mature mobile telephony market, eight out of ten users own mobile phones and 76 percent of mobile subscribers, or 73 million users, are linked to 3G networks. 3G services are popular in part because mobile handsets are becoming increasingly sophisticated, but also because of fierce local market competition.

With more than 26 million broadband lines, Japan ranks third in the world behind China and the US. But consumers are rapidly adopting fiber-to-the-home broadband service; in 2007 this market will have grown 70 percent, from 7.9 million in 2006 to an estimated 11.5 million. Subscribers are choosing FTTH over DSL both because they do not have to pay for basic telephone service with VoIP, and because many of them are dissatisfied with unreliable and slow DSL connections.

IP telephony is expected to gain nearly 4 million subscribers in Japan this year, reflecting a more comprehensive range of voice and data services, delivered more efficiently.

The Japanese government and network operators have made significant commitments to overhaul existing infrastructure. Japan's Ministry of Internal Affairs and Communications announced that it intended moving from the domestic fixed-line telephone network to a fully integrated IP system by 2010. The largest providers, KDDI and NTT, have said they are migrating to IP by 2008 and 2010, respectively.

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