First Mile

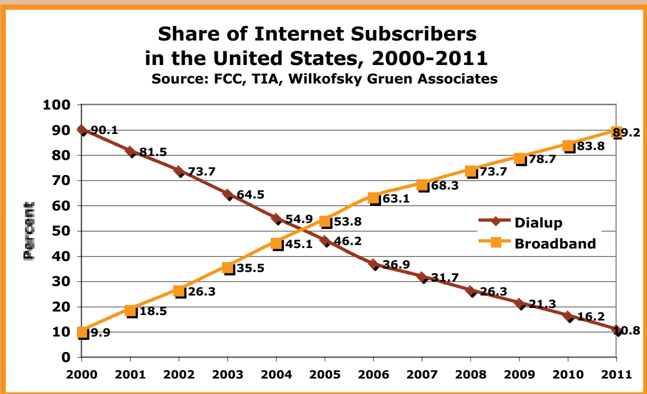
TIA Predicts Strong Telecom Spending Due to Demand

Explosive growth in network traffic, fueled by data applications, is forcing telecommunications companies to invest heavily in fiber and wireless upgrades, despite nervousness about a possible economic slowdown. In the US alone, bandwidth consumption quadrupled in 2007, after doubling in 2006.

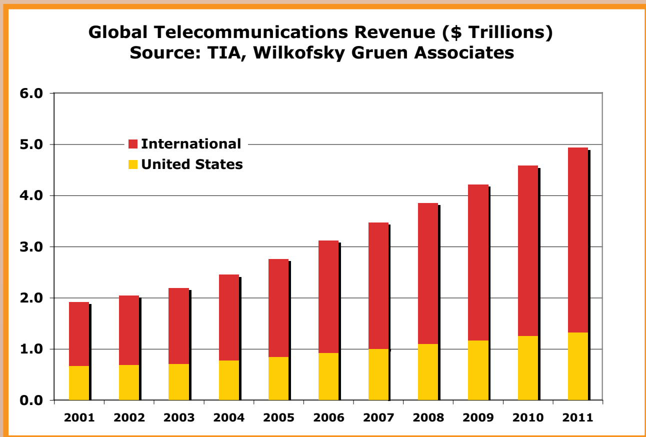
The data come from the Telecommunications Industry Association's annual report and briefing on February 22, by Arthur Gruen of Wilkofsky Gruen Associates. "Telecom is not immune to downturn," said Gruen. "We did these projections last summer, expecting a slowdown but not as bad [as what happened], but companies are committed to switching to IP and we don't expect them to really delay that. On wireless the spending is still robust."

The report sees the global telecom market at $4.9 trillion in 2011, with a 9.2 percent annual growth rate from $3.5 trillion in 2007, and $2.0 trillion in 2002. Of that, $1.3 trillion is from the US; growth here will be slower than in the world at large. There was an 8.3 percent increase in 2007 ($1.0 trillion revenue), and growth will keep pace this year – a 9.3 percent rise is expected in 2008 – but will be only 7.2 percent through 2011.

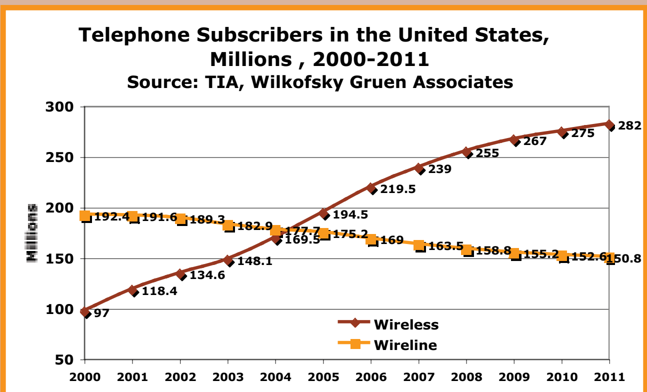
In contrast, the international sector saw a 12.5 percent jump in 2007 ($2.5 trillion, with $1.2 trillion from Europe) and 10 percent annually through 2011. Europe should see 7.5 percent annual growth through 2011, Canada 5.4 percent, and Middle East/Africa, Asia Pacific and Latin America markets should all grow in double digits annually.



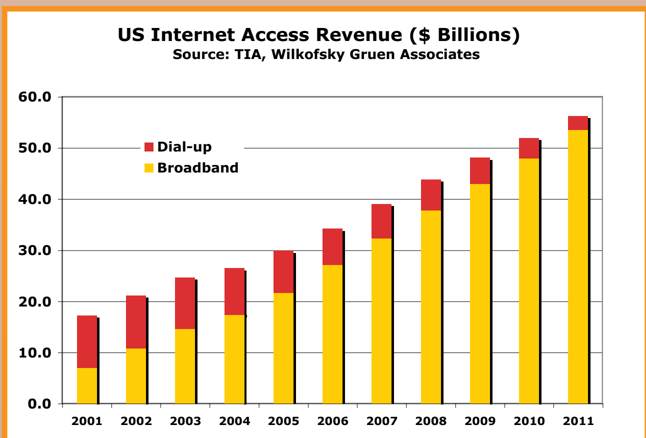
Broadband connections will come close to replacing dial-up connections in the US by 2011.



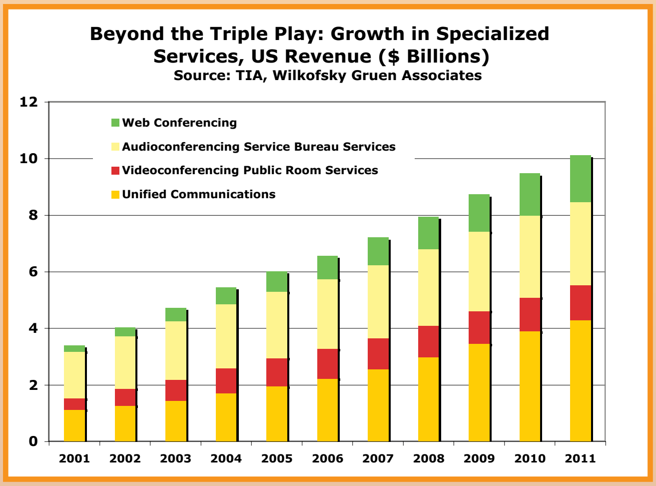
Revenues are growing more slowly in the US than globally. But there is healthy growth everywhere.



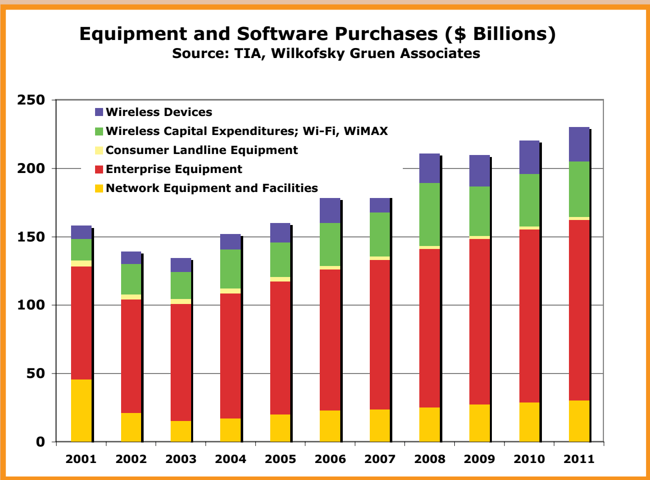
Loss of wireline subscribers moderated in 2007, and only slow erosion is expected through 2011.



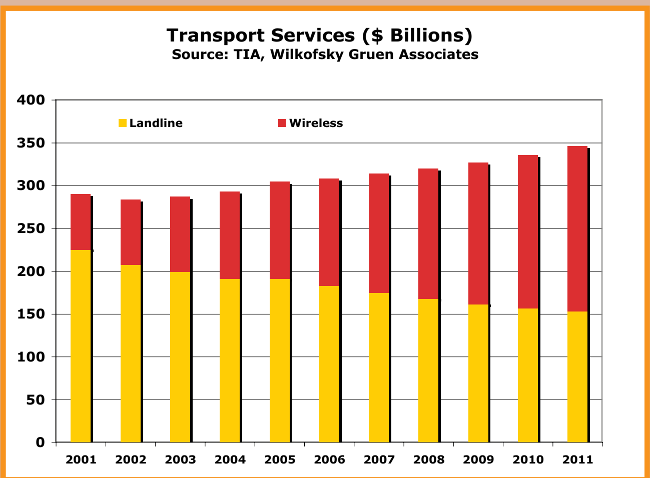
Dial-up Internet access revenue is vanishing.



The complete TIA report (see TIA's Web site for ordering details) shows a sharp rise in new services. They reach 20 percent of Internet raw data access fees by 2011.

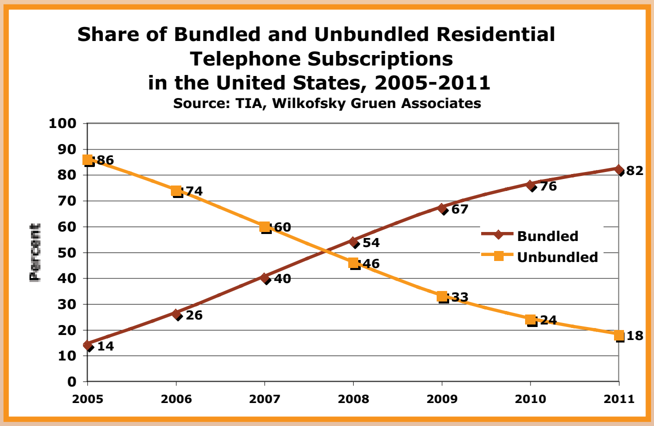


Enterprise equipment dominates telecommunications spending, and will continue to do so.

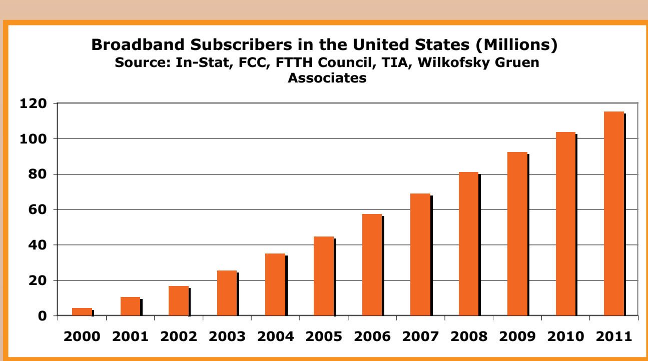


Wireless revenue is growing, while landline "plain old telephone service" is falling under pressure from mobile and, to a lesser extent, from converged services.

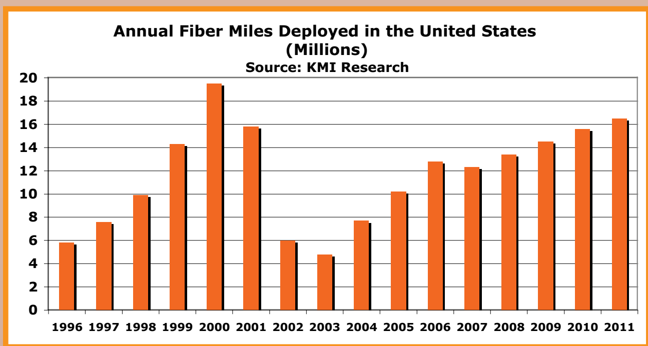
The triple play is already being supplemented with revenue from specialized services such as VPNs, data backup and web conferencing.



Bundling of services is the key to revenue increases.



By 2011, almost every US household is expected to have broadband, if the TIA data are to be believed: 115 million subscribers out of 120 million households and 20 million business addresses.



A little history: Fiber deployment (almost all intercity and metro rings) peaked in 2000. Since then, new fiber deployments have been necessary in those areas and of course, to the home. That's so, even though older fiber has been upgraded with DWDM to vastly increase bandwidth. Thanks to DWDM, there was a small drop in 2007 even as FTTH deployments exploded.

Gruen said the demand for bandwidth could lead to shortages if broadband and wireless network upgrades can't keep pace.

SOME MODERATION DUE TO ECONOMY

Gruen admitted that any "moderation" in spending "may be more severe than we had anticipated," but that the areas to which telecom enterprises are devoting their spending – the upgrade from legacy to converged systems – "has not really slowed. Leases are up for legacy systems bought early in the decade anyway so there is pressure to change, and to change to IP." Companies expect cost savings as well as service improvements, Gruen noted.

Falling wireless rates – new flat-rate offers at Verizon, AT&T and T-Mobile – were described as more of a marketing tool because existing plans offer so much usage anyway, so there is growth in average revenue per customer. T-Mobile's plan included text messaging as well, however.

Also, the recently passed economic stimulation bill allows $50 billion in immediate capital writeoffs, and there is marginal benefit to telecoms from lower interest rates, Gruen said. "Telecom is not at the center of the downturn. Not that telecom companies are immune, but they happen to be in an area where there is a lot of growth."

Gruen also pointed to the intensified fight between telcos and cable companies for customers, and to the fact that subscriber landline erosion is moderating now that most customers have given up the secondary lines they originally bought for handling dialup modems.

DATA OVER WIRELESS PUSHES DEMAND

Stand-alone VoIP operators such as Vonage are "hanging in," but a majority of cable telephone subscribers are VoIP, Gruen said. VoIP should comprise 37 percent of residential landlines in 2011 (up from 16 percent in 2007). TIA says the residential market tripled to 15.9 million subscribers in just the past two years and will double again to over 33 million by 2011. It should produce $14 billion in enterprise revenue in 2011.

Gruen said that serving advanced data applications has become "integral" to wireless revenue, and that it drives consumer spending for new handsets as well as carrier spending. TIA expects wireless revenue to surpass landline revenue next year, although wireless subscriber growth slowed to single digits last year for the first time.

Domestic wireless service revenue is expected to grow to $200 billion in 2011, exceeding landline revenue by 26 percent in that year. Eighty-four percent of overall service revenue growth is expected to come from data. In fact, data was responsible for about 6 percent of wireless revenue in 2006. This jumped to 16 percent last year and will be 35 percent in 2011, Gruen said. By then, 90 percent of adults will have a mobile device; last year, 79 percent did.

There were 165 million domestic landline subscribers last year, a loss of less than 10 percent from 2006. There will still be 150 million landline subscribers in 2011, Gruen said, with 82 percent of subscriptions bundled. Only 40 percent had bundled subscriptions in 2007, up from 14 percent in 2005.

EQUIPMENT SPENDING DRIVEN BY NEW SERVICES

Enterprise equipment revenue is expected to rise at 4.8 percent a year and reach $132 billion in 2011, up from $110 billion in 2007 and $100 billion in 2005. Enterprise spending is driven in part by shifts to converged systems. Priorities for new services include IP VPNs (hence a drop in frame relay and ATM), videoconferencing, and security. The expectation is that IP VPNs will account for 34 percent of data transport revenue in 2011, up from 21 percent in 2007. Legacy systems accounted for four or five times IP revenue in 2007; they will fall to only twice IP revenue by 2011, but they certainly will not disappear.

Broadband's "ongoing expansion to rural areas" is proceeding "to satisfy demand for entertainment applications," Gruen said. He described the network equipment market as strong, with consolidation and bandwidth demand propelling sustained revenues for vendors. IP equipment in general, and Gigabit Ethernet needs in particular, are spurring growth. But the upside is mitigated by losses in modems, remote access devices, and other legacy products.

Nevertheless, broadband equipment providers' revenue is expected to grow at 13.4 percent a year on average, through 2011. The prediction is for Internet access revenue alone to exceed $50 billion by then. That helps pay for network equipment (vendor revenue is expected to increase at 6.5 percent annually to $30 billion in 2011 from $24 billion in 2007, and $15 billion in 2003; it peaked at $45 billion in 2001).

Broadband Legislation Could Provide Economic Stimulus of $134 Billion Annually

The US could realize an impact of $134 billion annually from a modest increase in broadband adoption, according to a new report released by the nonprofit Connected Nation (www.connectednation.org). The report details the potential state-by-state impact of broadband legislation currently under Congressional consideration.

"Just as the Congress needed to pass the recent economic stimulus package to accelerate the economies of every state, so too does the nation deserve passage of pending legislation that could accelerate access to and use of broadband. The beauty of the broadband legislation currently in play … is that it would provide a jolt to the nation's economy in the near term – to the tune that rivals the recent economic stimulus package," says Brian Mefford, Connected Nation's CEO.

The report measures the impact of the organization's first state-based program, ConnectKentucky. Kentucky experienced an 83 percent rate of growth in broadband adoption at a time when national broadband use grew by 57 percent. By surveying consumer savings in time, miles driven and health care, and by calculating the impact on job creation and retention, the report projects the estimated annual economic benefit for Kentucky. From this estimate, Connected Nation extrapolated the economic impact of modest growth in broadband adoption for each state and the country as a whole.

PON and VDSL Markets Fueled by Sales to Verizon and AT&T

A report from research and analysis firm Dell'Oro Group says that worldwide PON equipment revenues increased 10 percent year-over-year in the fourth quarter of 2007, driven by strong sales of BPON equipment to Verizon. During the same period, access concentrator revenues from sales of VDSL increased more than 60 percent.

"Deployments of high-speed VDSL and PON technology are primarily being driven by competition and the desire of telecom service providers to offer video services; but build-outs have been uneven in many regions of the world," says Tam Dell'Oro, president of Dell'Oro Group. "However, we saw increasing demand for BPON and VDSL equipment in the United States through 2007. Verizon drove BPON shipments with expansion of its PON-based FiOS service while AT&T drove growth in the VDSL market as they began build-outs for their U-verse service."

The report shows that Tellabs, the primary BPON supplier to Verizon, was the overall lead PON vendor in 2007. Alcatel-Lucent was the VDSL market leader, largely because it supplies the access concentrators for AT&T's U-verse project.

Diffusion Group: Place Shifting to "Change the Rules of Portable Media Consumption"

Place shifting – allowing consumers to access media from remote locations – is destined to become embedded in millions of home devices like PCs and set-top boxes, according to an analysis by The Diffusion Group (www.tdgresearch.com).

Place shifting requires consumers to have broadband Internet access in two locations – for example, the user's home PC might be pushing content to the laptop PC he is carrying on a trip. Unlike many broadband applications, it places heavy demands on upstream bandwidth.

The Diffusion Group predicts that by 2012 there will be close to 95 million active, configured place shifting servers in broadband households around the world. The most frequently used device for this function will be the PC, followed by game consoles, hybrid IP/digital TV set-top boxes and digital media adapters.

Colin Dixon, broadband media practice manager at TDG and author of the new report, argues that several market trends suggest that place shifting will move away from stand-alone, dedicated hardware platforms to become a purely embedded application. Dixon points to two recent events:

- Microsoft entered the place-shifting space in September, adding the newly acquired WebGuide software to its Media Center. Since Microsoft is delivering this functionality for free (and with the entire Microsoft infrastructure behind it), one can assume that personal streaming services will rapidly become part of core Media Center functionality. Dixon expects that a future Vista service update or Windows release will include a place-shifting component.
- Orb Networks, a pure-play embedded place-shifting solution, recently announced that its software will be delivered to close to 70 million WinAmp users as part of a major software update. As with Microsoft's offering, consumers do not have to pay a dime for this functionality – it simply comes as part of a larger download. This announcement resulted in the doubling of Orb's registered users to two million.

Based on these events, Dixon believes that business models attempting to extract a separate fee for this functionality are certain to have a hard time succeeding in this market space. Even if place shifting proves to be a compelling application, it will not be capable of acting as a stand-alone revenue driver or support an independent hardware platform.

Given how rapidly place shifting will be embedded in devices such as game consoles, cable/satellite TV tuners, hybrid IP/digital set-top boxes, and digital media adapters – combined with its status as a "free" application – Dixon argues that, within the next five to ten years, place shifting will have a sizable impact on how consumers engage with digital media.

"We strongly believe that place-shifting functionality will become a standard feature of almost every Internet-connected home media platform," Dixon says. "EchoStar's recent purchase of Sling Media is an indication of how important even established media companies believe place shifting will become. Should this happen as we expect, it will forever change the rules of portable media consumption."

Multimedia Home Networking Poised for Growth

Home networking has begun to blend into networked media devices, but the majority of consumers still only use their home networks for Internet sharing, says In-Stat.

Home networking has begun to blend into networked consumer electronics (CE) devices, or networked media devices, reports In-Stat (www.in-stat.com). The market has been trying to move past the early adopter stage, but the majority of consumers still only use their home networks for Internet sharing.

"Improvement is still needed when it comes to consumer awareness of the new breed of PC and non-PC network-capable media devices (Media Center PCs, CE media servers, digital media adapters, digital media receivers/players, and other networked CE devices)," says Joyce Putscher, In-Stat analyst. "To date, non-PC network-enabled stationary media devices have been dominated by game consoles. However, the vast majority of non-PC network-enabled stationary devices are not currently used to stream audio and video multimedia streams from room to room."

Recent research by In-Stat found the following:

- Worldwide media server-capable device shipments will grow by a 43 percent compound annual growth rate from 2006 to 2011.
- The worldwide market for basic media server shipments to be placed in home networks within one year is expected to grow by 62 percent from 2006 to 2011.
- Global home networks with at least one PC and at least one networked CE device will grow by about 100 percent in 2008.

Prime Time Is Anytime: Americans Turn to Broadband for TV

Nearly 80 million Americans – 43 percent of the online population – have watched TV shows on the Internet, up significantly from 25 percent a year ago. A full 20 percent of the American online population said they watch TV on the Web on a weekly basis – more than the 14 percent who say they take advantage of cable's video-on-demand offerings.

These findings come from Digital Life America tracking study conducted in November 2007 by Solutions Research Group (www.srgnet.com). SRG's other findings include:

- "To watch a specific show" was the main reason cited for 21 percent of visits to major networks' Web sites. Of these sites, abc.com received the highest user experience score among those who streamed a TV show, with 52 percent rating their overall experience as "excellent," followed by fox.com with 44 percent "excellent."
- A quarter of prime-time viewing was time shifted using DVR, broadband, mobile or other device. Among viewers 18-34, one-third of viewing was time-shifted. And among 18-49 households with a DVR, a remarkable 55 percent of the leading 20 shows were time-shifted.
- For households with both DVR and broadband, DVR is the preferred means of time-shifting. DVR users are becoming more aggressive in skipping commercials – 65 percent say they "always" skip commercials, compared to 52 percent a year ago.

ABI Research (www.abiresearch) is also bullish on broadband video. Its latest report finds that rental, download-to-own and subscription models will all see significant traction, but that the greatest number of downloads – particularly movies – will be rentals. ABI says that pay-video streams for over-the-top video downloads will grow from 215 million in 2008 to over 2.4 billion in 2012, with rentals accounting for approximately half.

"The opening up of rental for video on iTunes is not surprising, given that is how most consumers looking for legal paid movie downloads will choose to acquire them," says research director Michael Wolf. "Distribution offerings for movies that are in attractive release windows and that offer easy viewing on a TV or portable screen will see the greatest success."

However, challenges still remain for this market, particularly competition from legacy VoD services as well as unattractive ownership and rental terms offered by the studios. Cable and IPTV service providers are offering impressive VoD libraries to consumers, and increasingly video service providers such as Comcast are expanding into over-the-top streaming. Additionally, over-the-top rental terms are unattractive because the studios dictate the same rental terms to all distributors, even iTunes.

"Studios are locked into the same 24-hour 'once-started' viewing window and similar pricing for all online rental partners," said Wolf. "We believe that over time they will begin to offer greater flexibility, in particular as DVD and other physical media continue to mature and new consumer Internet-to-TV hardware expands their audience of consumers."

Alternative Carriers Lead in FTTH/FTTB Deployments

Worldwide, fiber deployments are mainly pushed by alternative players rather than incumbents, according to a new report by market research and consultancy firm InfoCom (www.infocom-de.com). Many competitive providers are overbuilding with fiber to the home in order to achieve higher margins by avoiding paying incumbents for the use of local loops. In some countries, incumbents' network upgrades are putting pressure on alternatives to compete. In Germany, for instance, a number of city carriers launched fiber projects in late 2007 in response to Deutsche Telekom's FTTC/VDSL deployment.

InfoCom's report discusses several business models for fiber, including the "open platform" model, the "partnership" model and the "proprietary" model, and concludes that carriers' choice of business model depends on their history, local regulation and the competitive landscape.

Incumbents' incentives to invest in fiber include:

- Competitive pressure: For example, in both France and the US, alternative carriers, both telcos and cable companies, are offering high-speed Internet connections and TV/video content.
- Government programs and subsidies: Japan and South Korea, for instance, have pushed incumbent carriers to deploy fiber.
- Opex savings: Incumbents can cut costs by reducing the number of local exchange sites and associated workforce and maintenance expenditures.

Despite these incentives, many incumbents are still choosing to invest in FTTC/VDSL2 instead of FTTH/B. Especially in Europe, the report points out, restrictions on incumbents' capital budgets often limit FTTH/FTTB deployments to greenfield developments.

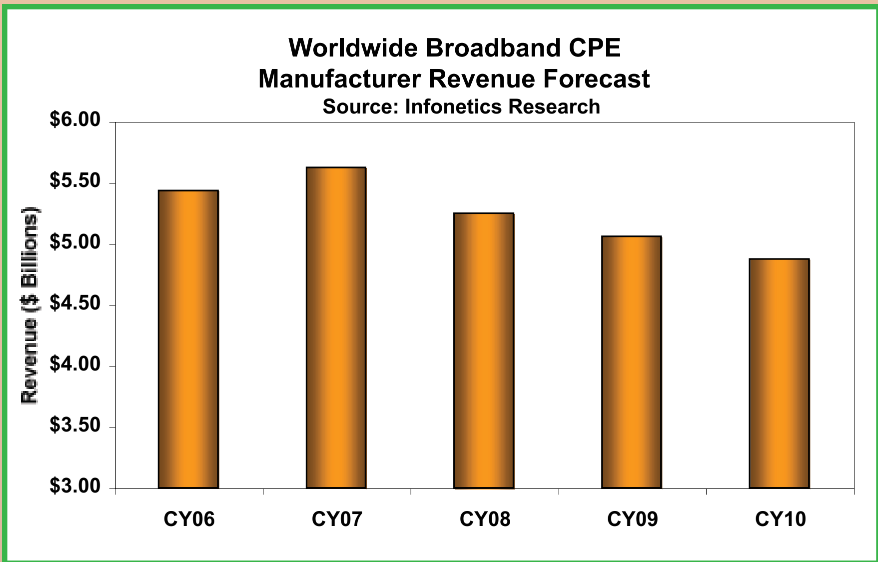
DSL Growth Slowing

Since 2004, worldwide DSL port shipments have increased in the strong double-digits year over year, but 2007 will be an inflection point for DSL port shipments, as growth remains flat or declines slightly from 2008 on, says a recent report from Infonetics (www.infonetics.com). The downturn is being caused by major markets getting saturated and growth in developing markets slowing down after growing at a torrid pace over the last few years. This will result in slower DSL subscriber growth and, in turn, slower DSL customer-premises equipment (CPE) growth, the report states.

"The overall broadband CPE market suffered parallel declines as the number of net DSL and cable broadband subscriber additions fell this quarter. The third quarter is typically strong for CPE sales, with parents signing up for broadband subscriptions for their children returning to school; however, this seasonal upswing was not strong enough to offset economic concerns in the US and Europe, which may be preventing people from increasing spending on their broadband connections," says Jeff Heynen, directing analyst at Infonetics Research.

Other highlights from the report:

- Residential gateway revenue dropped slightly in 3Q07 due to slower DSL subscriber growth in North America and EMEA.
- Worldwide VDSL broadband gateway revenue shot up 84 percent between 2Q07 and 3Q07; cable broadband gateway revenue jumped 27 percent.
- Thomson takes the lead in the fast-growing digital home gateway market in 3Q07; 2Wire moves up to second, and Actiontec falls from first to third.
- 41 percent of all broadband CPE revenue comes from North America in 3Q07, 33 percent from EMEA, 18 percent from Asia Pacific, and 8 percent from CALA.



Due to major markets becoming saturated, DSL port revenue is expected to fall over the next several years.

Chinese Market for Fiber Optic Test Equipment Is Booming

The market for fiber optic test equipment in China reached $77 million in 2006 and will increase to $143 million in 2013, according to a new study from Frost & Sullivan (www.frost.com). The rollout of FTTN and FTTH networks for triple play services is driving the rapid growth in sales.

The need for enhanced bandwidth is increasing the demand for high-speed networks, triggering the deployment of fiber optic cables. Because high-speed networks require dispersion testing for most of their components, this in turn drives the demand for fiber optic test equipment.

Another important market driver is the introduction of multipurpose test equipment, which attracts buyers by providing higher-layer testing and cost savings. End users consider multipurpose test equipment a "one-stop solution for all their testing requirements," according to Frost & Sullivan. However, most users seem to be waiting to buy the new multipurpose test equipment until some of their older equipment needs replacement.

"Upgrading existing test equipment to support these technologies is another major challenge for test equipment vendors," says report author David Ren. "Integrating new technologies into a single piece of test equipment to satisfy all the requirements of the end users with a comprehensive test solution could hold the solution to this challenge."