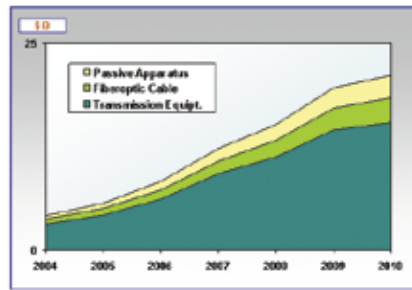


**This Month's Focus:** Global Market Forecasts for Fiber and Mobile Services

## Forecasts for the Global FTTx Market

Worldwide spending on fiber optic systems for broadband access will grow from \$8 billion in 2006 to \$21 billion in 2010, according to a new report from KMI Research ([kmi.pennnet.com](http://kmi.pennnet.com)). This amount includes fiber to the node and fiber to the curb as well as fiber to the building (FTTB) and fiber to the premises (FTTP). The percentage of broadband subscribers on FTTB or FTTP networks will increase from 7 percent in 2005 to 27 percent in 2010 (see chart). Service providers already offering ADSL will extend fiber farther into their loop plant to support higher speeds. Such "upgrade" deployments are underway in Canada, Japan, Korea, the Netherlands, Singapore, and the U.S. Many of the carriers that have launched such projects will accelerate fiber optic deployments in the next five years. Operators offering broadband access for the first time



**KMI Research sees substantial growth in fiber optic system spending, even though unit prices are dropping sharply. The increasing demand for fiber optic systems comes from both existing providers upgrading their ADSL plant and new operators entering the broadband access market. Less than 10 percent of the spending is on electronics and passive modules.**

are using fiber either to enter an established market as a new competitor or to benefit from its cost advantages

for bandwidth, distance and density requirements. New broadband service providers installing FTTx can be found in both advanced telecom markets (North America, Western Europe, parts of Asia) and in emerging markets (Eastern Europe, Latin America, Africa, and much of Asia). China, for example, has a large market for FTTB systems associated with the massive construction projects underway in large, dense metropolitan areas. In Japan, the competition among carriers is a key factor in the widespread use of FTTH. These two markets together represented half the worldwide market for fiber optic products in broadband access networks in 2005. With Korea, Australia, and several emerging markets, the Asia-Pacific region represented 70 percent of the world market and will remain more than 50 percent of the world market through 2010.

## FTTx Modules and Components Market to Surpass \$1.5 Billion in 2011

According to a new report from industry analyst firm CIR ([www.cir-inc.com](http://www.cir-inc.com)), the market for modules and components used in FTTx networks will grow from an estimated \$629 million this year to over \$1.5 billion in 2011. FTTx subscriber growth over the same period is projected to be robust, with 125 million new subscribers projected. The FTTx business has reemerged in the past year as carriers have expanded their rollouts of fiber-based networks, resulting in new opportunities for the components sector. The market for active components, which includes products such as transceivers, trans-

mitters and receivers, is projected to reach close to \$800 million in revenues by 2011. CIR analysts say the opportunity is significant enough to draw larger manufacturers to this space, which currently lacks dominant suppliers. The market for passive components, including passive optical networking (PON) splitters, couplers and amplifiers, is projected to grow to a total of \$438 million in 2011. For the electronics used in PON, CIR projects revenues of almost \$300 million in 2011. CIR says the FTTx components market will remain highly price sensitive. Firms with propri-

etary manufacturing technologies that result in high yields and those that deploy optical integration will remain competitive while maintaining margins. Due to economies of scale in manufacturing, smaller firms will likely be bought up or relegated to niche status. New markets will soon begin to emerge for novel components that cater to the needs of wavelength-division multiplexing PONs and PONs operating at both 2.5 Gbps and 10 Gbps. Electronic chip firms will have increased opportunities to supply high-layer chips that enable new services such as VoIP and IPTV.

## U.S. Reaches Second Place in FTTH Subscribers

Fiber-to-the-home subscribers increased by 34 percent to 463,000 in the second quarter of 2006, according to a new report by Ovum-RHK ([www.ovum.com](http://www.ovum.com)). The increase is largely driven by Verizon's FiOS initiative; Verizon accounts for approximately 81 percent of all FTTH subscribers and 93 percent of second-quarter growth. The remaining 19 percent of FTTH

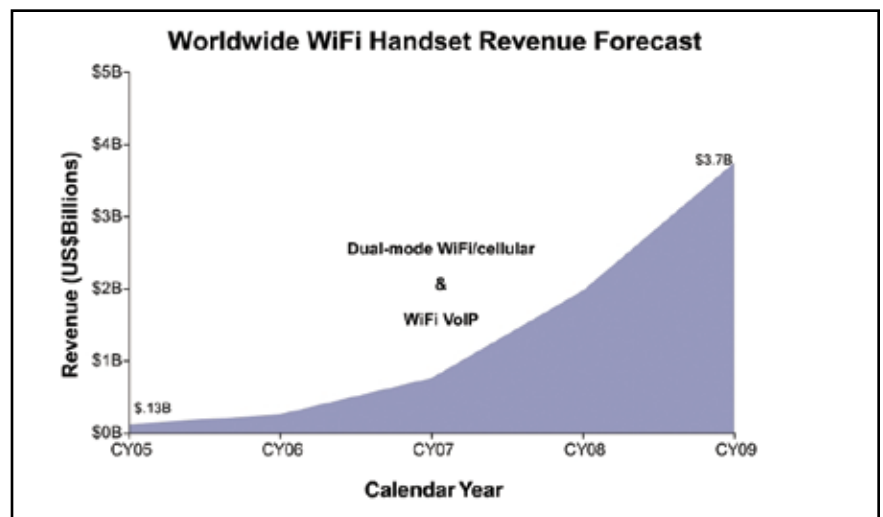
subscribers were accounted for by AT&T, Qwest, CLECs, independent operating companies and municipalities. This growth catapults the U.S. to second position behind Japan, in terms of the number of FTTH subscribers. However, the gap between the U.S. and Japan is still large. At the end of the first quarter of 2006, Japan had more than 5.4 million FTTH subscri-

ers. Ranked by number of broadband subscribers per 100 people, as measured by the Organization for Economic Co-operation and Development (OECD), Japan is 11<sup>th</sup> and the US is 12<sup>th</sup>, each with about 17 broadband subscribers per 100 at the end of 2005. Iceland, Korea, Denmark and the Netherlands are all over 25 per 100. In 2004, the US ranked 16<sup>th</sup>.

## WiFi Phone Market Could Soar to \$3.7B in 2009

The worldwide WiFi phone market increased 116 percent from 2004 and 2005 to \$125.5 million, and is projected to more than double in 2006 as enterprises and consumers slowly but steadily continue deploying voice over wireless LANs, says Infonetics Research in its latest report, WiFi Phones. Infonetics projects WiFi phone revenue to double, and even nearly triple, every year through 2009, when the worldwide market will reach \$3.7 billion (see chart).

Initially an enterprise application, VoWLAN will eventually become more popular with consumers as well, having enormous growth potential as part of a VoIP service bundled with broadband connections. "Single-mode WiFi VoIP handsets continue to penetrate the enterprise market, and with D-Link, Linksys, and NETGEAR all launching products, we expect increasing adoption in the consumer market, too," said Richard Webb, directing wireless analyst with Infonetics Research. "But the real growth will come from dual-mode WiFi/cellular handsets," Webb continued. "With the increased activity from both fixed and mobile operators to deliver dual-mode services to the mass market, often as part of a more far-reaching fixed-mobile convergence strategy, the long-term



**Worldwide WiFi handset revenue is expected to jump substantially by 2009, but will still be far short of switched cellular.**

forecast for dual-mode WiFi/cellular handsets is strong, assuming these handsets come down in price to sub-100 dollars or euros." Highlights:

- SpectraLink leads the overall WiFi phone revenue market in 2005, followed by Cisco and Motorola.
- Total WiFi phone units grew 151 percent between 2004 and 2005 and will grow 182 percent between 2005 and 2006.
- 58 percent of WiFi phone revenue came from single-mode WiFi VoIP handsets in 2005, 42 percent from dual-mode handsets; by 2009, 91 percent of revenue will come from

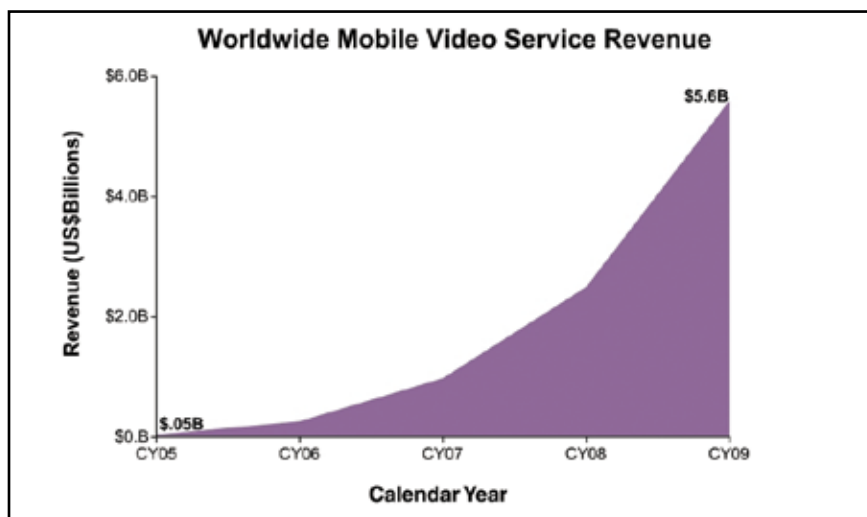
dual-mode handsets.

- 49 percent of dual-mode WiFi/cellular handset revenue came from Asia Pacific, 27 percent from North America, 22 percent EMEA, 2 percent CALA in 2005, but this shifts dramatically by 2009, when much more revenue will be generated in Europe.

Infonetics' report tracks single-mode WiFi VoIP handsets and dual-mode WiFi/cellular handsets, providing 2005 market size totals, annual revenue and unit forecasts through 2009, market share detail, and analysis of the WiFi phone market for all regions.

## Go, Team! Sports Broadcasting Drives Mobile Video...

If mobile video providers can resolve issues of quality and content – and analyst firm Infonetics Research ([www.infonetics.com](http://www.infonetics.com)) thinks they can – then worldwide revenue from mobile video services is set to skyrocket from \$46.2 million in 2005 to \$5.6 billion in 2009, a staggering jump of 11,997 percent in five years. The number of subscribers is likely to increase more than 8,000 percent over the same period, and the number of handsets sold will increase 11,000 percent (see chart). Sports will be the anchor for most mobile video service providers, and exclusive coverage will help drive the industry. In the U.S., Sprint/Nex-tel has a 5-year, \$600 million deal with the National Football League, while in Europe and Asia, broadcasts of the 2006 World Cup games generated a huge spike in mobile video subscriptions. According to Infonetics analyst Jeff Heynen, the success of mobile video hinges on the availability of low-power handsets, value for



**Expected growth in worldwide mobile video revenue through calendar year 2009. Source: Infonetics.**

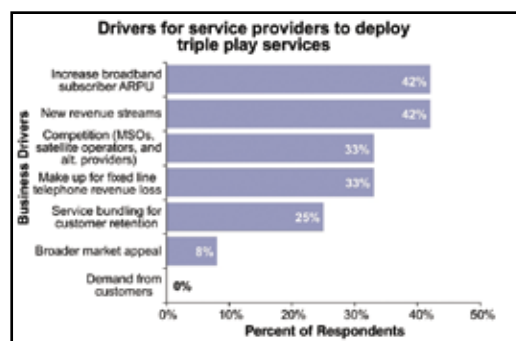
the subscriber's money, ease of use, acceptable price points for multimedia handsets, and most importantly, the right selection of standard and unique channels, content, and services. Heynen says mobile video needs to replicate the home TV experience as much as possible, something it doesn't

yet do. But mobile operators are expanding the bandwidth of their existing 3G networks, rolling out dedicated, RF-based broadcast networks and deploying new mobile video service delivery platforms, all steps that paved the way to offer the same content available on TV at home.

## ...And HDTV, Too

The number of households watching high-definition television (HDTV) continues to rise rapidly, reports In-Stat ([www.in-stat.com](http://www.in-stat.com)). HDTV households are projected to jump from 15 million in mid-2006 to 20.3 million at the end of 2006. HDTV is available in just a few countries today – the U.S. and Japan currently account for 91 percent of all HDTV households – but several countries have introduced HDTV service this year. “Consumer demand to see the World Cup in HD served as a catalyst for the start of HDTV services in several European countries,” says Mike Paxton, In-Stat analyst. “In

addition, select TV households in countries like China, Singapore, and Mexico can now also get HDTV service.” Other countries with significant numbers of HDTV households include Canada, Australia, and South Korea. By the end of 2009, as we reported earlier this year, In-Stat is projecting that the number of HDTV households will exceed 55 million. All types of television service providers, including satellite/Direct-to-Home service providers, cable TV opera-



**Desire for revenue from new services, and not customer demand, is fueling the push toward new broadband services. Customers can't demand what they don't know about and haven't used yet.**

tors, telco TV operators, and terrestrial broadcasters, are currently delivering HDTV services. In the US,

there is still a “disconnect” between HD services and the penetration of

HDTV sets. Currently, only one-third of US households with HD-

capable TV sets are actually using them to watch HD programming.

## Home Networks Are Catching on in Urban China

Aside from the essential “outside plant” infrastructure, the home network is the foundation for the development of the true digital home. An increasing number of players has begun to enter the digital home market in China. According to a February, 2006, survey conducted by In-Stat

(www.in-stat.com), home networks have gained nearly an 18 percent penetration rate among respondents in urban areas in China. In addition, a substantial percentage of non-owner respondents are planning to build home networks within 12 months. Although the main purpose of the

home network is still bandwidth sharing, industry players say entertainment applications will soon be dominant. The In-Stat survey gauged consumer interest in networks used to watch video, listen to digital audio, record television programs, and play online games.

## Russians Embracing Wireless Broadband

With the Russian economy flourishing, demand is quickly outpacing the wired telecommunication infrastructure that was built during the Communist era. Industry analyst firm Maravedis (www.maravedis-bwa.com) predicts a consolidation among the 200 broadband wireless access (BWA)

service providers currently active in the country. The most active players, Maravedis says, will be companies with deep pockets that belong to one of three major holdings in Russia — Alfa, Sistema and Telekom Invest, which control both fixed and mobile service providers. However, shortage of spec-

trum and very stringent regulation for equipment and licensing are serious obstacles for massive adoption of broadband wireless and WiMAX in Russia. For WiMAX to prosper in Russia, frequency bands in the 2 GHz range (2.3-2.4 and/or 2.5-2.7GHz) must be made available to commercial operators.

## In-Stat: Users Find Smartphones More Valuable than PDAs and Laptops

In a consumer survey, more users of smartphones called these devices essential to their business than the users of PDAs or laptops, reports In-Stat (www.in-stat.com). But this does not mean users will automatically replace their PDAs and laptops with smartphones, the

high-tech market research firm said. Before converged phones start taking market share from other devices, users will need better keyboards, automatic synching with other devices, applications that have the same look and feel as on other devices, and expandable

screens. Until then, users will continue to carry devices with redundant applications, in spite of their desire to have fewer devices. Smartphones represent about 10 percent of the wireless phone market today, which is expected to grow to 25 percent over the next five years.

## Worldwide CPE Equipment Sales

Sales of broadband customer premises equipment are predicted by In-foretics to soar, almost doubling in dollar value over the next five years despite sharp drops in unit pricing for many items. More sophisticated functionality is one reason. A potential hitch: Media-centric home computers could take more of the market than is now predicted. Computers are getting more compatible with media, and the introduction of Microsoft Vista next year may accelerate the trend as is Web-based IPTV.

