

International Broadband Traffic and Capacity Grow

Mobile and fixed networks share the zest for expansion as fiber and WiMAX attract investment; Asia is particularly active.

International Internet Capacity Growth Accelerates

International Internet capacity increased steadily between 2003 and 2006, growing at a compound annual rate of 45 percent, according to a study by TeleGeography Research (www.tele-geography.com). In 2007, annual international Internet bandwidth growth accelerated to 68 percent as backbone operators around the world upgraded their networks to meet demand.

In 2007, international Internet network capacity grew faster than the

volume of traffic carried on these networks. On average, peak international Internet backbone traffic grew 60 percent between 2006 and 2007 (see Figure 1), while bandwidth grew 68 percent. Consequently, peak utilization declined somewhat, from 47 percent in 2006 to 44 percent in 2007.

International Internet traffic growth varied by region, but the pace was generally slower than the torrid growth experienced in 2006. Intra-European

Internet traffic grew 71 percent in 2007, compared with 85 percent the previous year. Intra-Asian Internet traffic grew 55 percent in 2007, down slightly from 59 percent in 2006. Traffic growth on both the trans-Atlantic and trans-Pacific routes was 41 percent in 2007. In contrast to other regions, traffic growth between the U.S. and Latin America accelerated to 87 percent during 2007, up from 72 percent in 2006.

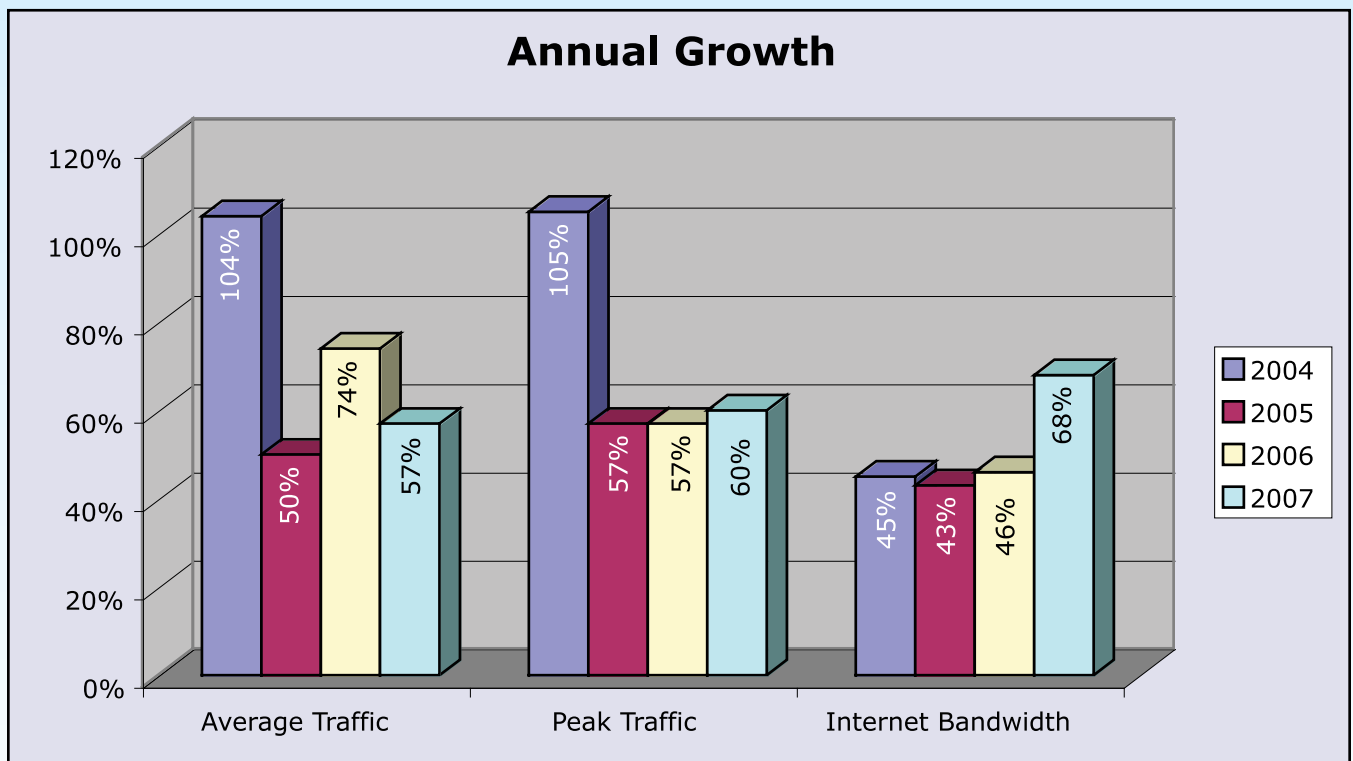


Figure 1. International Internet Traffic and Bandwidth Growth, 2004-2007 Source: TeleGeography Research

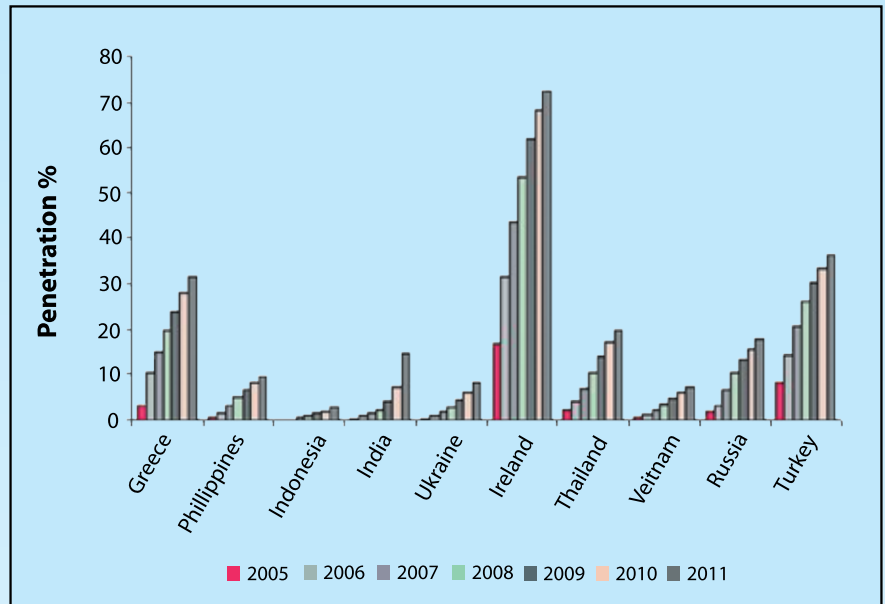
Top Ten Fastest-Growing Broadband Markets

Analyst firm Ovum (www.ovum.com) has announced the fastest-growing broadband markets. After benchmarking countries from Asia-Pacific, Western and Eastern Europe, and the Middle East & Africa, Ovum identified the top ten as Greece, Philippines, Indonesia, India, Ukraine, Ireland, Thailand, Vietnam, Russia and Turkey.

Infrastructure competition, relative pricing and regulatory involvement are the main factors driving broadband growth in these markets. In addition, the report says, each country has unique market characteristics.

Wealth relative to the cost of broadband is a major consideration in most of these markets. Broadband ISPs in Greece, Turkey, Ireland and Russia all offer services that are inexpensive relative to average disposable income, in order to make broadband attractive to greater proportions of the country. This has helped drive uptake of broadband services.

Regulation surrounding wholesale and local loop unbundling (LLU) of broadband pricing (in the case of DSL) is also



Consumer Broadband Household Penetration, 2005 – 2011. Source: Ovum

a major factor, as is fixed line and PC penetration. Demand for content is also helping fuel broadband growth, as operators incorporate TV and VoD services into their offerings early on.

WiMAX Prepares for Takeoff, Creating New Markets for Ultramobile Connected Devices

Operators are approaching critical decisions about their 4G strategies as mobile WiMAX (802.16e) starts to move from trials and pilots to the first real-world deployments.

A new study from ABI Research (www.abiresearch.com) finds that service providers are planning mobile WiMAX networks all over the world, mainly in the 2.5 GHz and 3.5 GHz bands (the WiMAX standard also covers a band centered roughly on 5.8 GHz). Sprint and Clearwire have made firm commitments in the United States, while Vodafone is planning to deploy WiMAX in newer markets such as the Middle East and Eastern Europe; BT and Telecom Italia Mobile are also show-

ing interest. And ABI Research says another as-yet-unnamed “major European mobile operator” is “seriously considering WiMAX.”

The major semiconductor and equipment makers, other than Qualcomm and Ericsson, are also staking out their positions for this emerging sector, the report says.

“The new and unproven (on a large commercial scale) mobile WiMAX has positioned itself against the potential Goliath that LTE (Long Term Evolution) is expected to become,” says mobile broadband analyst Philip Solis. Solis points out that in spite of WiMAX’s delayed certification timelines and LTE’s advantage in having evolved from

the widely deployed GSM technology, WiMAX has at least a two-year head start in reaching the market.

ABI forecasts that more than 95 million subscribers worldwide will be using WiMAX-enabled customer premises devices by 2012 and almost 200 million will be using mobile devices, with some overlap between the two groups. In addition to wireless handsets and laptops, these devices will include portable game devices, portable media players, imaging devices, ultramobile PCs and mobile Internet devices.

These last two categories – ultramobile PCs and mobile Internet devices – constitute a new class of “always-on” Internet-connected products, collec-

tively termed “Ultramobile Devices” (UMDs). ABI Research expects them to become popular over the next five years, and to prove extremely profitable for their makers.

“UMDs are a very exciting, potentially very lucrative area,” says ABI Research vice president Stan Schatt. “What makes this market so intriguing is that products will assume so many different forms. That product differentiation will be an integral part of the ultramobile device marketing plan.”

Ultramobile PCs (UMPCs) run Windows and business applications

and are aimed at business users, while mobile Internet devices (MIDs) target consumers and are more likely to run a Linux operating system. MIDs, with their lower prices and wider appeal, will make up by far the majority of the devices shipped. Apple’s iPhone and Nokia’s N800 may be seen as precursors of the MID. Both UMPCs and MIDs will feature multiple wireless connectivity technologies – WiFi, WiMAX, and cellular – to maintain “anytime, anywhere” Internet connectivity.

This diversity is also reflected in the range of applications that will be offered:

Web browsing, music, navigation, voice, and data communications including email and IM, photo/video, and vertical commercial applications will all be popular. Some new applications, such as medical monitoring, are now in development as well.

ABI’s research identified several types of users who will find varying combinations of these applications appealing. These include “Frugal Generalists,” “Lifestyle Boomers,” “Soccer Moms,” “Gen Y Social Networkers” and “Multimedia Enthusiasts.”

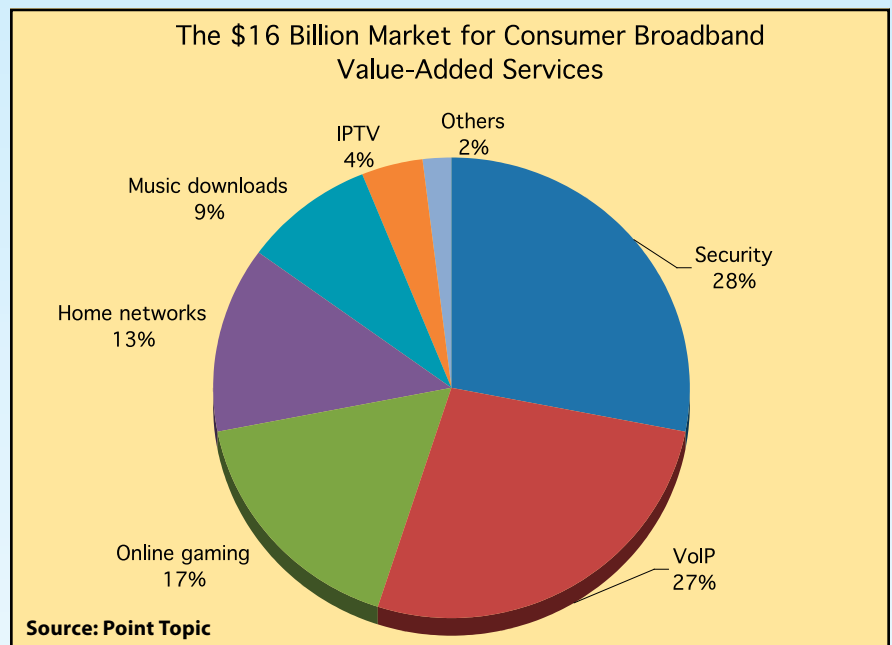
Revenues for Consumer Broadband Services Rise 81%

The market for consumer broadband value-added services grew by 81 percent during 2006, says research firm Point Topic (www.point-topic.com). With more than \$16 billion in revenues, these services, which providers sell in addition to basic broadband access, have become increasingly essential to the financial success of broadband.

Altogether, consumer broadband value-added services added 25 percent to the revenues generated by basic broadband access during 2006. VoIP, TV services (IPTV) and online gaming all produced significant revenues.

The run-rate for consumer service revenues increased by almost 81 percent during 2006, from \$11.9 billion at the start of the year to \$21.6 billion at the end of the year. This was steeper than the growth rate for the number of consumer broadband lines (34 percent, to 246 million) or the run-rate of broadband access revenues (32 percent, to \$71 billion) during the same time period.

The top five services in 2006 were network security, VoIP, online gaming, home networks and music. VoIP, defined as full-service phone-over-broadband offerings, grew by 188 percent and has now overtaken security as the top value-added service. In some markets, such as France, Japan and the US, VoIP has won a significant share of the telephone market – for example, it accounted for around a



quarter of all telephony traffic in France by the end of 2006. Even with tariffs lower than traditional telephone charges, the growing size of the IP telephony subscriber base means significant revenue.

Internet voice services that offer a best-efforts level of service, such as Skype, had a similar rate of revenue growth (180 percent) but much lower revenues (\$173 million at the end of 2006).

Average revenue per user (ARPU) for broadband services went from \$65 per

user per year at the beginning of 2006 to \$88 at the end of the year. Since prices for individual services have remained unchanged or even fallen slightly, this increase reflects the fact that consumers are using more services.

Excluding security, there were 307 million broadband value-added service accounts at year-end 2006, an average of 1.25 per broadband line. That compares to 0.75 per line at year-end 2005 and 0.59 per line at year-end 2004.

New Opportunities for Fiber Optic Testing Equipment

New analysis from Frost & Sullivan (testandmeasurement.frost.com) finds that world markets for fiber optic test equipment (FOTE) generated revenues of \$586.1 million in 2006 and will reach \$891.7 million in 2013.

Worldwide FTTx projects continue to increase due to huge requirements for bandwidth in the access networks. Part of fiber's appeal is its reliability, and this in turn is driving significant demand for fiber optic testing equipment.

As network speeds increase, FOTE vendors are under pressure to expand their product portfolios in order to keep pace with evolving user needs. High-bandwidth networks challenge equipment manufacturers to design and develop high-precision network elements and may compel them to increase investment in R&D.

With the shift to converged networks, technicians are increasingly performing

several kinds of tests at one time. These changes have caused a shift toward integrated testing platforms – several test solutions combined in a single box – which are more compact and easier to use. The gradual shift from dedicated instruments to optimized platforms is a significant trend in the FOTE market. The demand for dedicated test equipment will likely decrease over time, the Frost & Sullivan report says.

Telecom Milestone: More Cell Phone-Only Than Landline-Only US Households

The United States has passed a milestone in telecommunications history: The percentage of Americans in cell phone-only households now exceeds the percentage of people living in landline-only households, according to Mediamark Research Inc. (www.mediamark.com). Mediamark conducts approximately 26,000 in-home, in-person interviews yearly with US adults, collecting data in two waves of interviews with 13,000 respondents.

The landline-only population has been larger than the cell-only population since MRI first began measuring cell phone use in 2000. In the most current wave of interviews, fielded from September 2006 through April 2007, those positions were reversed, with the cell-only segment rising to 14.0 percent, and the landline-only population dropping to 12.3 percent.

“This milestone is a consequence of two trends – a steepening decline since 2000 in the percentage of households with any landline, accompanied by a rapid rise in the number of households with at least one cell phone,” says Andrew Arthur, the report's author. “The MRI data show that 84.5 percent of people now have landlines in their households, while 86.2 per-

cent now have at least one cell phone.”

Young people, particularly those who live on their own, dominate the burgeoning cell-only population. Fifty-seven percent of 18-to-24-year-olds who live in single-person households are now cell-only, making them more than four times as likely to be cell-only as the average adult.

