



# Access is Everything

Each year, PricewaterhouseCoopers' global team of entertainment and media practitioners generates in-depth forecasts for 12 industry segments, incorporating data from four principal regions comprising 48 countries and areas around the world. Following are extracts from the *Global Entertainment and Media Outlook, 2009–2013* that cover the global Internet access market, a key driver of entertainment and media spending in most segments.

The Internet access market—comprising wired and mobile access but not content purchases—rose by 12.7% in 2008, continuing its trend of double-digit annual increases. The global economic downturn during 2009–10 will reduce growth during these two years to mid-single-digit increases, following the double-digit annual gains of the past five years. The near-term slowdown will occur because of a slower migration rate from dial-up to broadband, a slower take-up rate for high-speed services in the near term, and increased competition that will lower average spending per subscriber.

Once economic conditions have improved, we will look for a return to double-digit annual gains during 2011–13. Over the longer run, penetration into rural areas and faster broadband speeds will accelerate the migration to broadband. Increased fiber deployments in the Internet backbone and fiber-to-the-home (FTTH) deployments will increase broadband speeds, making it more suitable for high-volume video applications. Wireless network upgrades; the further rollout of enhanced third-generation (3G)

cellular wireless services—notably, high-speed packet access (HSPA); and the increased penetration of smart phones with touch-screen capabilities will stimulate demand for mobile applications and drive even further demand for high-speed Internet access. Spending will rise from US\$215 billion in 2008 to \$334 billion in 2013, a 9.2% compound annual increase (see Figure 1).

### North America

We project Internet wired and mobile access spending in North America to grow by 9.2% compounded annually, reaching \$68.3 billion in 2013. Wired broadband access will increase to \$53.2 billion, a 7.1% compound annual advance. Wired dial-up access spending will decline to \$2 billion from \$5.1 billion in 2008, a 17% drop compounded annually. Overall, wired Internet access spending will reach \$55.2 billion in 2013 from \$42.8 billion in 2008, growing by 5.2% compounded annually. Mobile access will total \$13.1 billion in 2013, increasing from \$1.2 billion in 2008, a 60.9% compound annual increase from a small base (see Figure 2).

In terms of overall spending growth, including mobile access, Canada will be the country with the faster growth during the next five years, with a projected 9.9% compound annual increase compared with 9.1% for the United States. In 2013, the US will expand to \$62.7 billion from \$40.6 billion in 2008, while Canada will rise to \$5.6 billion from \$3.5 billion.

**Broadband.** Telephone companies and cable operators have been in head-to-head competition in the broadband market for years. The nature of the competition has evolved from being price-centric—whereby cable and telephone companies offer steep discounts to lure broadband subscribers away from the competition—to speed-centric, with providers now featuring high-speed options.

The appeal of large bandwidth is the ability to access high-volume video applications. Uploads and downloads of video material, from such sites as YouTube, and the sharing of videos between users are leading to a surge in video traffic. Although only about 5% of broadband subscribers are high-volume video

**Figure 1:** Global Internet access market: wired and mobile (US\$ millions)

Segment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2009–13 CAGR	
Internet access: wired and mobile	110,370	136,588	162,394	190,425	214,601	226,221	238,450	262,360	296,387	333,628		
% change		21.9	23.8	18.9	17.3	12.7	5.4	5.4	10.0	13.0	12.6	9.2

**Figure 2:** North America—Internet access market: wired and mobile by component† (US\$ millions)

North America	2004	2005	2006	2007	2008p	2009	2010	2011	2012	2013
<b>Wired Internet access</b>										
Dial-up	9,475	8,587	7,398	6,285	5,148	4,654	4,174	3,505	2,854	2,025
Broadband	17,144	21,402	26,735	33,942	37,689	38,372	39,320	42,964	48,433	53,196
<b>Total wired Internet access</b>	<b>26,619</b>	<b>29,989</b>	<b>34,133</b>	<b>40,227</b>	<b>42,837</b>	<b>43,026</b>	<b>43,494</b>	<b>46,469</b>	<b>51,287</b>	<b>55,221</b>
Mobile access	—	1	149	735	1,212	2,571	3,825	6,034	9,210	13,073
<b>Total</b>	<b>26,619</b>	<b>29,990</b>	<b>34,282</b>	<b>40,962</b>	<b>44,049</b>	<b>45,597</b>	<b>47,319</b>	<b>52,503</b>	<b>60,497</b>	<b>68,294</b>

†At average 2008 exchange rates.

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

users, they account for half of all the bandwidth consumed. Video traffic now accounts for around 40% of all Internet traffic.

The major long-term impediment to expanded household penetration is the limited availability in rural areas where the population is sparse. With cable and DSL, households need to be within 18,000 wire-feet of the nearest node in order to receive broadband. Cable and DSL providers have held back from extending their infrastructure to rural areas because the return on the investment is low. This is an issue of significant concern in Canada, which has very large, sparsely populated geographic areas, though its major population concentrations are in well-served city and suburban areas. To a lesser extent, this is an issue in the US as well.

The 2009–10 Canadian budget contains a \$225 million allocation over three years to develop and implement a strategy on extending broadband coverage to unserved communities. This initiative will engage additional funding from other levels of government and the private sector to continue to expand Canada's broadband network.

In the US, the Department of Agriculture announced in late 2008 that it is awarding \$342 million in loans to companies that will help bring improved services to rural areas. The economic stimulus package announced by Pres. Barack Obama includes broadband as part of a national infrastructure investment. If funds are allocated to that program, broadband availability in rural areas would increase.

Over the long run, the appeal of faster speeds, even at higher prices, and increased penetration in rural areas will drive the broadband market. Nevertheless, growth will be limited by approaching saturation. In Canada, two-thirds of the households were already subscribed to broadband in 2008, and the US was just behind, at 63.5%.

During 2009 and 2010, the weak economy will likely reduce the inclination of consumers to trade up to faster speeds. We therefore expect price competition to be more prevalent in the near term. We expect average spending per month per subscriber in both the US and Canada to decline during the next two years and then increase during the subsequent three years as an improving economic environment facilitates increased spending for higher-speed options.

**Mobile access.** The mobile access market in North America was virtually nonexistent as recently as 2005 but totaled \$1.1 billion in the US and \$120 million in Canada in 2008. A major catalyst for that expansion was the introduction of smart phones with touch-screen capabilities that make it much easier to access the Internet from a mobile phone. Screens are larger than those of traditional phones, and navigation is faster and more user-friendly.

People are migrating to smart phones as hardware and software are becoming cheaper and as the networks run faster. Carriers are heavily promoting the smart phones because their users spend much more per month than do non-smart-phone users. We expect that nearly 30% of wireless telephone subscribers in North America will use their handsets to access the Internet in 2013, compared with only 3.4% in 2008.

#### **United States**

A key development in the US was Apple's June 2007 launch of the iPhone, the first touch-screen device with an iPod, a digital organizer, and wireless Internet access. Other carriers introduced various touch-screen phones to compete against the original iPhone and lowered the price of their phones when the new iPhone was introduced.

The fundamental driver of the greatly increased use of mobile access is faster wireless speeds. Most carriers are already providing enhanced 3G options such as HSPA. The

auction of wireless spectrum in the 700-megahertz (MHz) band in mid-2008, the spectrum to be vacated by television stations, will open up new opportunities for wireless carriers to offer broadband.

The Federal Communications Commission plans to auction spectrum in the advanced wireless services 3 band in 2009 with the stipulation that the winning bidder of a national license set aside a portion of the spectrum for a free broadband service.

Wireless access spending will total \$11.7 billion in the US in 2013, an increase from \$1.1 billion in 2008.

#### **Canada**

The evolution to next-generation networks is accelerating in Canada, and already broadband cellular networks are operational in the major population centers. The advanced wireless services (AWS) spectrum auction was completed in July 2008. It was an unusual auction, with three of the six AWS bands set aside for new entrants, thereby limiting the ability of Rogers, Telus, and Bell to dominate the auction. The auction was very competitive, with the final average price per MHz per person being around three times that of the same spectrum auctioned in the US.

While the big three did dominate in the three unrestricted bands, the auction resulted in five new entrants of significance in the AWS bands. The incumbent cable operators—Shaw, Videotron, and Bragg/Eastlink—picked up spectrum covering territory consistent with their respective cable operations to support a quad-play strategy. Two relative newcomers—Globalive and Data & Audio Visual Enterprises Wireless Inc.—picked up spectrum across the country. The enthusiasm of the auction has been somewhat muted by tough economic times, which have caused almost all of the new entrants to scale back and defer the launch of their offerings.

As in the US, upgraded wireless networks and the proliferation of smart phones will propel mobile Internet access in Canada. We project spending to rise to \$1.3 billion in 2013, from \$120 million in 2008.

### Europe/Middle East/Africa

Internet wired and mobile access spending in Europe, the Middle East, and Africa (EMEA) will grow by 10.3% compounded annually, from \$80.3 billion in 2008 to \$131.4 billion in 2013. Wired Internet access spending will increase by 7.3% compounded annually, from \$69.3 billion in 2008 to \$98.5 billion in 2013. Wired broadband access spending will expand by 9.8% compounded annually, from \$59.3 billion in 2008 to \$94.6 billion in 2013. Wired dial-up access spending will decrease by 17.4% compounded annually, from \$10 billion in 2008 to \$3.9 billion in 2013 (see Figure 3).

Mobile access will advance at a 24.5% compound annual rate, from \$11 billion in 2008 to \$32.9 billion in 2013. Western Europe will be the slowest-growing area in EMEA, in large part because its broadband market is the most mature, with 55% of all the households already subscribing—as compared with 25% in Central and Eastern Europe and 12% in the Middle East and Africa.

Total access spending in Western Europe will increase at a 7% compound annual rate, from \$65.5 billion in 2008 to \$91.9 billion in 2013. Central and Eastern Europe will increase at a 17.5% compound annual rate, from \$8.3 billion in 2008 to \$18.6 billion in 2013, fueled principally by more than a doubling of its broadband household base. In the Middle East and Africa, we expect the broadband universe to nearly triple and overall spending to rise by 26.2% compounded annually, from \$6.5 billion in 2008 to \$20.8 billion in 2013.

**Broadband.** Broadband providers throughout EMEA are investing in their infrastructure in order to provide faster speeds. Governments also are actively supporting broadband. In Finland, the government is funding a project that will extend the fiber network to within two kilometers of virtually all households, enabling download speeds of up to 100 megabits per second (Mbps). In Switzerland, legislation that went into effect in 2008 makes broadband a Universal Service Obligation. Germany is spending €141 million (\$206 million) in public funds to extend broadband availability to rural areas.

Rural broadband will also be helped by satellite. Eutelsat and Astra have deals with local providers in several countries to offer broadband by satellite. In Germany, for example, Eutelsat in conjunction with TelDaFax will provide a satellite broadband service in areas where DSL service is

**Figure 3: Europe/Middle East/Africa—Internet access market: wired and mobile by component† (US\$ millions)**

EMEA	2004	2005	2006	2007	2008p	2009	2010	2011	2012	2013
<b>Wired Internet access</b>										
Dial-up	21,473	18,095	15,155	12,317	10,025	9,119	7,972	6,936	5,304	3,863
Broadband	21,215	30,912	41,277	50,959	59,313	61,671	65,216	72,734	83,537	94,617
<b>Total wired Internet access</b>	<b>42,688</b>	<b>49,007</b>	<b>56,432</b>	<b>63,276</b>	<b>69,338</b>	<b>70,790</b>	<b>73,188</b>	<b>79,670</b>	<b>88,841</b>	<b>98,480</b>
Mobile access	2,021	3,363	5,542	8,332	11,006	13,310	15,667	19,490	25,245	32,876
<b>Total</b>	<b>44,709</b>	<b>52,370</b>	<b>61,974</b>	<b>71,608</b>	<b>80,344</b>	<b>84,100</b>	<b>88,855</b>	<b>99,160</b>	<b>114,086</b>	<b>131,356</b>

**Figure 4: Asia Pacific—Internet access market: wired and mobile by component† (US\$ millions)**

Asia Pacific	2004	2005	2006	2007	2008p	2009	2010	2011	2012	2013
<b>Wired Internet access</b>										
Dial-up	9,830	10,236	9,284	11,293	13,549	12,955	12,058	11,163	10,349	9,506
Broadband	14,735	18,126	21,418	24,784	28,477	31,299	34,230	37,418	40,923	44,815
<b>Total wired Internet access</b>	<b>24,565</b>	<b>28,362</b>	<b>30,702</b>	<b>36,077</b>	<b>42,026</b>	<b>44,254</b>	<b>46,288</b>	<b>48,581</b>	<b>51,272</b>	<b>54,321</b>
Mobile access	11,079	21,394	29,517	34,147	39,265	42,686	45,549	49,915	55,892	62,277
<b>Total</b>	<b>35,644</b>	<b>49,756</b>	<b>60,219</b>	<b>70,224</b>	<b>81,291</b>	<b>86,940</b>	<b>91,837</b>	<b>98,496</b>	<b>107,164</b>	<b>116,598</b>

†At average 2008 exchange rates.

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

poor or nonexistent. In Italy, the digital divide was reduced through the launch of WiMAX in early 2009. The new technology covers rural communities throughout Italy and is managed by two licensed operators. Moreover, Vodafone has declared that it will also cover digitally divided areas with High-Speed-Downlink Packet Access (HSDPA) technology.

We project the number of broadband households in EMEA—by 2013—to increase to 223.8 million, an 11.2% compound annual increase from 2008. In Western Europe, the broadband household universe will expand to 154.8 million from 100.5 million, a 9% compound annual increase. In Central and Eastern Europe, the number will increase to 53.6 million, a 15.8% compound annual increase from 25.7 million in 2008.

In the Middle East and Africa, broadband will grow to 15.5 million households from 5.4 million in 2008. Excluding Israel, which has a 77% broadband household penetration and a projected growth of only 4% compounded annually, the Middle East and Africa will increase at a 23.2% compound annual rate.

By 2013, 68.7% of all the households in EMEA will be online. In Western Europe, penetration will increase to 79.5%. In Central and Eastern Europe, Internet penetration will rise to 56.8%, and in the Middle East and Africa, 48.8% of households will be online in 2013.

**Mobile access.** Wireless network upgrades are facilitating growth in mobile Internet access because more wireless telephone subscribers can use their handsets to access the Internet.

In Germany, T-Mobile and Vodafone offer HSDPA with speeds of up to 1.8 Mbps. HSDPA is also available in Austria, Italy, Portugal, Spain, Switzerland, Hungary, and Poland. In Hungary, Magyar Telecom has a long-term loan from the European Investment Bank for around \$300

million to invest in mobile broadband. In Russia, each of the main wireless operators launched 3G services in the past 18 months.

Because mobile Internet access involves interactive communications, which are more complicated than the downloading of songs or ringtones, speed is important. We expect rollouts of high-speed services to spur mobile access penetration. In addition to network upgrades, the introduction of smart phones such as the iPhone can spur the market. Smart phones with touch-screen capabilities make it much easier to navigate the Internet.

Mobile access spending exceeded \$1 billion in each of France, Germany, Italy, the United Kingdom, and Saudi Arabia/Pan Arab in 2008, and we expect Spain to reach that threshold in 2009, Russia in 2011, Turkey in 2012, and Poland in 2013. Mobile access is relatively high in Saudi Arabia/Pan Arab because of the limited availability of wired broadband.

Currently, only a fraction of wireless telephone subscribers are mobile Internet subscribers. On average, 8.2% of the wireless telephone subscribers were mobile Internet subscribers in 2008. Slow speeds and the limited penetration of smart phones or handsets with full keyboard capabilities limit penetration.

Cost is also an issue, and we expect a slower take-up rate during the next two years as consumers look to conserve funds. In 2008, mobile access penetration increased by 1.9 percentage points. We expect a 1.4 percentage-point gain in 2009, to 9.6% followed by a 1.7 point increase in 2010. Thereafter, the combination of an improved underlying economy, more-Internet-appropriate handsets, and faster network speeds will propel penetration. From 2010 to 2013, we expect mobile access penetration to jump by 12.6 percentage points to

23.9%. Spending on mobile access will nearly triple during the next five years, from \$11 billion in 2008 to \$32.9 billion in 2013, a 24.5% compound annual gain.

Western Europe will increase to \$16.5 billion in 2013 from \$8.2 billion in 2008, a 15% compound annual gain. Central and Eastern Europe will expand to \$6.6 billion in 2013 from \$1.3 billion in 2008, at 38.6% compounded annually. The Middle East and Africa will be the area growing the fastest from a small base, rising to \$9.7 billion in 2013 from \$1.5 billion in 2008, a 45.3% increase on a compound annual basis.

## Asia Pacific

Internet wired and mobile access will increase during the next five years to \$116.6 billion in 2013 from \$81.3 billion in 2008, averaging 7.5% compounded annually. Wired Internet access spending will rise to \$54.3 billion in 2013 from \$42 billion in 2008, a 5.3% increase compounded annually. Wired dial-up access spending will total \$9.5 billion in 2013, a 6.8% compound annual decline. Wired broadband access spending will grow to \$44.8 billion in 2013 from \$28.5 billion in 2008, a 9.5% compound annual rate (see Figure 4).

Mobile access spending will increase from \$39.3 billion in 2008 to \$62.3 billion in 2013, a 9.7% compound annual increase. Mobile access spending will overtake wired access spending in 2011. Japan, at \$37.8 billion in 2008, has the largest market in Asia Pacific, with 74% of that total coming from mobile access. Japan is the only country in the world where the majority of Internet access spending is generated from mobile phones.

The People's Republic of China (PRC), at \$20.1 billion, was the second largest market in Asia Pacific in 2008. The PRC had the largest wired Internet household base in the world, at 161 million in 2008, and the second largest mobile access subscriber base, behind Japan, at around 45 million.

The PRC passed the US in 2008 to become the largest wired broadband market in the world, with 76 million households.

**Broadband.** Countries throughout the region are enhancing their broadband capacity to provide faster speeds and greater throughput. In Australia, the government is expected to award a tender in 2009 for a national broadband network at an estimated cost of \$5 billion. The Japanese government is actively promoting broadband through its Next Generation Broadband Strategy 2010 initiative. That strategy targeted FTTH as a central tenet. The FTTH market rose from 2.9 million in 2005 to more than 13 million in 2008, the largest of any country in the world, and in 2008 fiber became the largest broadband access technology in Japan.

In the PRC, the restructuring of the telecommunications market will lead to more broadband competition. There are now three competitive companies in the market—China Mobile, China Telecom, and China Unicom—each of which can offer mobile and fixed line service in a package, and each of which will operate a wireless network by using a single wireless broadband technology.

Fixed wireless using WiMAX technology also is being introduced or expanded in other countries. In

Pakistan, Motorola has a contract with Wateen Telecom for around 200,000 devices that will be used for wireless DSL. In Taiwan, six companies were issued WiMAX licenses in July 2007, and they are looking to jointly purchase WiMAX equipment to save on capital costs and accelerate the process of introducing service. WiMAX licenses are expected to be issued in Thailand in 2009, and in Vietnam four companies were issued licenses to test WiMAX service for one year.

To assist in extending broadband to rural areas, O3b Networks entered the market in 2008 with a satellite service. A series of medium-Earth-orbit satellites is expected to be launched in late 2010. The satellites will provide broadband connectivity to areas across the region not reached by DSL or cable modem service.

The ability to accommodate rising levels of Internet traffic will be a critical factor in the facilitating of broadband expansion. The construction of undersea fiber-optic cables that link Asia with the rest of the world will allow for faster broadband speeds. In October 2008, the first phase of the Trans-Pacific Express that links China and Taiwan with the US was completed, the first such direct link. The eight companies participating in the project—China Telecom, China Netcom, China

Unicom, Chunghwa Telecom (Taiwan), Korea Telecom, NTT Communications Corp., AT&T, and Verizon—are spending around \$500 million.

There is a wide disparity in broadband penetration in Asia Pacific. Broadband is well developed in Australia, Hong Kong, Japan, New Zealand, Singapore, South Korea, and Taiwan, each of which had penetration rates in excess of 50% in 2008. Broadband penetration in Malaysia was 24.6%, and in the PRC, 19.2%. The remaining countries have penetration rates below 10%.

In countries that have high broadband penetration rates, we project low- to mid-single-digit gains during the next five years, while we look for double-digit average growth in each country where broadband penetration was less than 50% in 2008.

**Mobile access.** Asia Pacific has by far the largest mobile access market in the world, at \$39.3 billion in 2008, constituting 76% of the global total.

Restructuring in the PRC will make the wireless market more competitive, and the introduction of 3G services in 2009 will expand the reach of mobile access. Carriers during the next two years are expected to spend around \$40 billion in the development of 3G networks. We expect the PRC to overtake South Korea in 2011 and rise to \$15 billion by 2013, a 31.8% compound annual increase. Although

**Figure 5: Latin America—Internet access market: wired and mobile by component† (US\$ millions)**

Latin America	2004	2005	2006	2007	2008p	2009	2010	2011	2012	2013
<b>Wired Internet access</b>										
Dial-up	2,142	2,193	2,332	2,194	1,820	1,635	1,452	1,227	1,027	851
Broadband	1,256	2,279	3,461	5,145	6,579	7,276	8,071	9,525	11,392	13,321
<b>Total wired Internet access</b>	<b>3,398</b>	<b>4,472</b>	<b>5,793</b>	<b>7,339</b>	<b>8,399</b>	<b>8,911</b>	<b>9,523</b>	<b>10,752</b>	<b>12,419</b>	<b>14,172</b>
Mobile access	—	—	126	292	518	673	916	1,449	2,221	3,208
<b>Total</b>	<b>3,398</b>	<b>4,472</b>	<b>5,919</b>	<b>7,631</b>	<b>8,917</b>	<b>9,584</b>	<b>10,439</b>	<b>12,201</b>	<b>14,640</b>	<b>17,380</b>

†At average 2008 exchange rates.

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

the mobile access subscriber base is large in absolute terms, only about 7% of wireless telephone subscribers in the PRC were mobile access subscribers in 2008, leaving substantial room for growth.

There are also a number of developments in other countries that are enhancing the wireless market. In Australia, Optus is expanding its 3G network to reach 98% of the population by the end of 2009 at an estimated cost of \$800 million. In Thailand, CAT Telecom is expanding its 3G network, and during the past three years, wireless carriers in Thailand spent \$1.8 billion on their wireless networks.

Despite high penetration rates in Japan and South Korea, less than 13% of wireless telephone subscribers in all of Asia Pacific were mobile access subscribers in 2008. We expect relatively modest penetration growth during the next two years, followed by accelerated growth during 2011–13, reflecting the economic cycle and the build out of advanced wireless networks. By 2013, an estimated 20.4% of the potential market will be mobile access subscribers. We project mobile access spending will increase to \$62.3 billion in 2013, a 9.7% compound annual increase.

## Latin America

We expect Internet wired and mobile access spending in Latin America to grow at a 14.3% compound annual rate, from \$8.9 billion in 2008 to \$17.4 billion in 2013. Wired Internet access spending will increase at a compound annual rate of 11%, from \$8.4 billion in 2008 to \$14.2 billion in 2013. Wired dial-up access spending will decrease at a compound annual rate of 14.1%, from \$1.8 billion in 2008 to \$851 million in 2013. Wired broadband access spending will be up 15.2% on a compound annual basis, increasing from \$6.6 billion in 2008 to a total of \$13.3 billion in 2013 (see Figure 5).

Mobile access will expand from \$518 million in 2008 to \$3.2 billion in 2013, a 44% compound annual increase from a small base rate during the past five years, fueled by a rapidly growing broadband market. We expect a dip to single-digit gains during the next two years as the economic environment weakens, and then a return to double-digit annual growth during 2011–13 as the economy recovers. Brazil was the largest market in the region, at \$4 billion, in 2008. Mexico, at \$1.8 billion, was next, followed by Argentina at \$1.6 billion. Each country will average double-digit compound annual increases during the next five years.

**Broadband.** Each country is initiating programs to expand its broadband market. In Brazil, the government is undertaking a program to provide broadband for schools and municipal councils. Satellite technology will be used to provide access points.

In Mexico, WiMAX is being used to extend broadband to areas not currently reached, because it is around 80% less expensive to deploy than wired technologies. The launch of triple-play services by cable operators is driving broadband in areas reached by cable modems. Fueled by new, triple-play options, we expect broadband in Mexico to rise to 11 million subscribers in 2013, growing by 15.9% compounded annually from 5.25 million in 2008.

In Argentina, Multicanal and CableVisión are investing more than \$300 million in a fiber infrastructure to offer triple-play packages. CABASE is also planning to deploy a fiber network to provide broadband in competition with Telefónica de Argentina and Telecom Argentina outside of Buenos Aires. We expect Argentina's broadband market to nearly double, from 2.65 million in 2008 to 5.1 million in 2013, a 14% compound annual increase.

Broadband access spending will increase from \$6.6 billion in 2008 to \$13.3 billion in 2013, growing at a 15.2% compound annual rate.

**Mobile access.** Latin America is beginning to develop a wireless infrastructure capable of supporting mobile Internet access. Brazil is by far the largest market in Latin America, at \$432 million. Mexico is a distant second at only \$31 million. We expect investments across the region to expand high-speed wireless in Latin America. As high-speed services become available, they will attract people who want to access the Internet from their wireless phones. In 2008, only 1.5% of wireless telephone subscribers were mobile access subscribers in Latin America, nearly 80% of whom were in Brazil.

We expect only modest penetration growth during the next two years as the weak economy and limited infrastructure restrain growth. We then look for penetration to accelerate as wireless networks get upgraded and as economic conditions improve. By 2013, we expect that around 9% of wireless telephone subscribers will use their handsets to access the Internet. Mobile access spending will increase from \$518 million in 2008 to \$3.2 billion in 2013, up 44% on a compound annual basis.

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Marcel Fenez is the leader of PricewaterhouseCoopers' Global Entertainment & Media (E&M) practice. The *Global Entertainment and Media Outlook 2009-2013* is the result of contributions by professionals from PricewaterhouseCoopers' Global E&M practice and Wilkofsky Gruen Associates Inc., a provider of global media research and analysis.

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