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Asia's Media Innovators
by Stephen Quinn

May 2010 – Chapter Two

Asia's mobile phone innovations

Many of the media innovations in Asia over the past few years have involved new uses for the mobile phone. For example, early in 2010 the Pearson publishing group and phone maker Nokia formed a joint venture to teach English to people in China via the mobile phone. This chapter looks at some of the more interesting mobile phone innovations, and provides data about mobile phone penetration in the Asian region. Examples of other innovations are invited from readers. Please contact the author at sraqinn@gmail.com

China has more people learning English than any other country in the world. Mobile phones are popular ways to access information in China. As of early 2010 China had at least 730 million mobile subscribers. This was almost double the number of Internet users (384 million as of the end of 2009). So it seems natural to combine mobile phones with education.

The Pearson Company owns the world's largest education publishing business as well as the *Financial Times* and Penguin books. Nokia is the world's biggest maker of mobile phone handsets. In the last three months of 2009 Nokia sold almost 18 million mobile phones in China, 36 per cent more than a year earlier. In 2009 Pearson bought a company called Wall Street English for US\$145 million in cash, giving it a leading position in China's English-language teaching market. The new joint venture between Pearson and Nokia is called Beijing Mobiledu Technologies. It builds on a service that Nokia launched in 2007, providing content from a variety of publishers.

Angela Long, former head of Mobiledu at Nokia, runs Mobiledu in China. Elizabeth Knup is Pearson's chief representative in China. "We already have 20 million subscribers in China since Mobiledu was,

launched and we believe that more and more people will study English through mobile phones," she said, adding that the company would increase the content it offered to appeal to different learners. As of early 2010 Mobiledu had about 20 million subscribers and 1.5 million active users each month. Customers access the content through an application preloaded on new Nokia handsets, or by downloading software from the service's web site or Nokia's Ovi store.

The Mobiledu service is targeted at young professionals aged between 20 and 35. Most use the service to improve their career prospects. Mobiledu has encountered a few problems not of its own making. On 30 November 2009 China Mobile implemented a series of measures meant to eliminate offensive or unauthorised content, including pornography, on Chinese-based wireless application protocol (WAP) sites. It was all part of the Chinese government's efforts to "maintain an orderly mobile Internet environment". As a result, China Mobile and other Chinese telecommunications operators suspended billing their customers for all WAP and some mobile gaming services. This included services that do not contain offensive or unauthorised content, on behalf of third party service providers, such as Mobiledu.

Similar innovations with mobile phones are happening in Bangladesh. More than 1 million English lessons have been downloaded to mobile phones as part of the BBC's Janala service, the corporation told the World Mobile Conference in Barcelona in February 2010. Janala means "window" in Bangla. Janala offers hundreds of three-minute audio lessons and quizzes – delivered via text message (SMS) – for about 7 US cents per lesson. People in Bangladesh dial a special code – 3000 – to get access to a range of classes via their mobile phone.

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The BBC has also set up a website giving learners free access to content: www.bbcjanala.com.

Janala launched in November 2009. It is aimed at young people living on less than US\$4 a day. Each session costs 3 taka, or about 4.5 US cents. In the three months to the start of February 2010, people in Bangladesh accessed 1,030,583 Janala lessons. More than two-thirds of people who use the beginners' service returned to it, the BBC said. Overall, 39 per cent of callers returned to Janala. About 50 million people have mobile phones in Bangladesh, in a population of 156 million. Bangladesh has the highest population density in the world, at about 1,229 people per square kilometer.

Sara Chamberlain, the head of interactive for the BBC World Service Trust, said many Bangladeshis were eager to learn English to improve their access to the global economy. The BBC aimed to put English within the reach of millions of non-English speakers, she said. A BBC survey reported that 84 per cent of Bangladeshis considered English essential for securing a good job and educating their children. "We knew demand for English was strong in Bangladesh, but the response to BBC Janala has been nothing short of phenomenal," Chamberlain said. "The growth of mobile is clearly creating an opportunity to provide access to education in a way simply not possible before."



Photo by Dipanker Dutta (via Flickr)

Mobile phones are being used in a range of innovative and useful ways around Asia. In rural India, farmers receive agricultural information such as current local market prices on their phones, which they share with other farmers. For more details, see this post: www.internetevolution.com/author.asp?section_id=526&doc_id=180720

Potential of the mobile phone

Around the world, media companies are starting to see the potential of the mobile phone, especially smart-phones. John Herlihy, a Google vice-president for global advertising, believes desktop computers will be "irrelevant" within three years, and will be replaced by smart-phones. "Mobile makes the world's information universally accessible. Because there's information and because it will be hard to sift through it all, that's why search will become more and more important. This will create new opportunities for new entrepreneurs to create new business models – ubiquity first, revenue later." It is all part of a transition from big technology to small. People have moved from mainframe computer to desktop, to laptop, and soon to their mobile phone.

In Japan, most research was being done on smart-phones and not PCs, Herlihy told an audience at University College Dublin in early March 2010. A smart-phone is effectively an ultra-portable computer that allows its owner to surf the web, receive and send email, and conduct a host of other online activities. As of mid 2009 only one in 10 of the world's 4.2 billion mobile phones were smart-phones. In July 2009 Morgan Stanley Research predicted the number of smart-phones could represent half the total number of mobile phones within the "next few years". The analysts described the migration to Internet-connected mobile devices as "one of the biggest opportunities in the history of the technology industry".

Google's CEO Eric Schmidt told the 2010 Mobile World Congress in Barcelona in February 2010 that his company was moving to a "mobile first" strategy. "Culturally it is time to figure out a way to say yes to the emergent new services and ideas that will not come from Google, but from those literally millions of companies and programming shops that will be built on this new platform," he said. "What I would suggest to you here, right now, at Mobile World

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Congress is to understand that the new rule is 'mobile first'; mobile first in everything [...] it's time for us to make mobile first the right answer."

It is interesting and useful here to pause to consider all of the products that were previously sold separately but which have been incorporated into mobile phones. Some examples include still and video cameras, calculators, music players, satellite navigation systems, maps, compasses, and electronic versions of books.

Augmented reality, perhaps better known as AR, is one of the latest mobile phone applications that combines many of the capabilities recently added to phones into a single user application. AR applications use the phone's positioning technology to note a person's location, and the device's compass to check the direction the user is facing. In this way, the device can "guess" what the user is seeing through their camera's viewfinder. The AR software gathers information about points of interest in that line of sight and displays it on top of what the camera sees.

In effect, AR layers digital information onto the physical world. The most common AR software runs on "smart-phones" like Apple's iPhone or handsets that use Google's Android operating system. As the name suggests, digital technology augments and improves the reality we see. For example, AR software adds a variety of explanatory data to an image in the phone's camera. This gives the user a better understanding of what is going on.

In a foreign city I could point my smartphone down a street to see the subway stations in that direction, along with their precise location, and which lines stop at each.

One of the best AR applications is Layar. I use it on my iPhone to find nearby information or people. Data are represented in a 360-degree panorama. I used Layar, for example, to find all the people nearby using Twitter, nearby ATMs, locate some good coffee shops, or get details of restaurants in a nearby building. Another iPhone app, Worksnug, provides a panoramic view of all the public wi-fi hotspots around the phone owner. Another iPhone app, called Laptop Cafes, finds all the nearby cafes that have

a combination of good coffee and wi-fi in a range of cities. Google's SkyMap app helps people identify star patterns.

Google has become increasingly involved with mobile phones because it sees the potential power of combining mobile devices with information. It helps that Google manages a huge chunk of the world's information. *Guardian* journalist Victor Keegan elegantly noted that "if data is the gold dust of the new era, then Google will own the deepest mine". "If, like me, you are willingly immersed in a snowstorm of Google products from Gmail to mapping and Google Earth," he wrote in a column on 5 March 2010, "then a phone like the [Google] Nexus One ... which has access to everything about me is both a potentially awesome product in its own right and a huge threat to my liberty if Google misuses that information." The disruptive power of the mobile "knows no end," Keegan said.

Meanwhile, journalists and publishers are seeking ways to use augmented reality via mobile phones. *Esquire* magazine in the US and *Wallpaper* in Europe have done "augmented reality" editions, with Robert Downey Jr coming to life on the cover of the former, and AR text providing videos and animation in the latter publication. Possible options for journalists using AR include "geotagging" online newspaper articles so that an item relates to a particular place. "Geotagging" is the process where latitude and longitude (location) are encoded into a photograph or other digital item. When someone visits a site mentioned in the newspaper article they could learn about events relevant to the location via their smartphone.

Dorien Benkoil writes a technology blog for the Poynter Institute, a journalism think tank, in Florida in the United States. Benkoil said Michael Young and a team of technologists at *The New York Times* have been using AR for location-based journalism such as restaurant reviews ("point your phone at the restaurant and get its details and ratings") and real estate ("see how many apartments are available and what floor they're on in a given building"). "I could imagine a TV station using AR to let viewers poke around in a scene or get more information about something they're watching right in the frame," Benkoil said. "How

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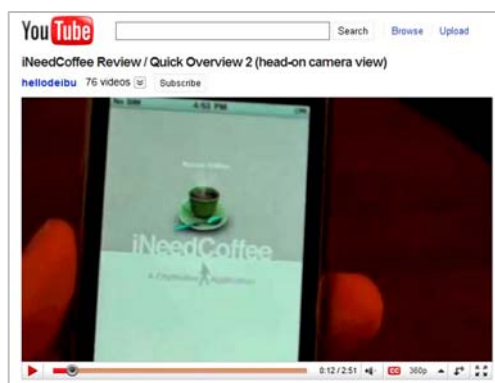
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about facial recognition software to give information about a source a journalist is talking to?"

Newspapers could offer advertisers like restaurants or museums the ability to layer information or offerings to entice people in. "For example, imagine being able to see classified ads in a neighborhood overlain on the locations in which the material is available," Benkoil said.

In San Francisco, the city's transit system has partnered with augmented reality developer Junaio to provide an interactive guide to getting around the city. People use information about the Bay Area Rapid Transit (BART) channel in their iPhone, and point the phone's camera at their surroundings after loading the Junaio application. They receive visual notifications of train stations, arrival times and nearby points of interest. The Junaio app is connected to the transit system computer. It provides information on station locations and updates train schedules constantly. Similar apps are being developed in Asia. For example, people in South Korea use an application called *ineedcoffee* to find coffee shops. Here is a video about the application.



Privacy issues

Privacy becomes a major issue with mobile phones, because of the ease with which people can locate information about individuals, or use the camera on the phone to capture images without others noticing. Benkoil warns that AR has what he calls a "creepiness" factor in the sense of the potential for invasion of privacy, or locating information secretly. But the camera on the mobile phone has long been used to intrude upon people's privacy, and this issue must be appreciated. In May 2009 a scandal erupted in the Philippines involving a prom-

inent plastic surgeon, Dr Hayden Kho, and a collection of models and actresses who were his girlfriends. Videos of Kho having sex with his girlfriends were circulated by mobile phone for several months. The case received a huge amount of publicity and involved a wide cast of characters. A Google search in March 2010 using the phrase "Hayden Kho scandal" produced more than 3.5 million hits.

Need for innovation

As more and more people buy smartphones, innovative media houses will need to provide a stream of new applications and opportunities, such as AR and a range of new possibilities brought about by new technologies. The arrival of the iPad, to be launched in early April 2010, and similar electronic devices will open the door for new ways for journalists to tell stories. Journalists must embrace these new opportunities. Otherwise they risk being left behind in the next phase of the digital evolution. Mobile phone usage in Asia is growing quickly. In the decade to 2007, the percentage of mobile phone users in the developing world jumped from 1 per cent to 45 per cent, according to the International Telecommunications Union (ITU). Growth is predicted to be significant in the Asia-Pacific region. The research company Datamonitor predicted the number of mobile phones in the Asian region would jump from 389 million in 2007 to 890 million by 2012.

In March 2010 *Forbes* magazine published results of a survey of consumer technology use in Asia, the United States and Europe. In Asia the magazine focused on China, India, Malaysia and Singapore. The survey found that Malaysians led all other countries in their use of social-networking sites, including Facebook, with 86 per cent of respondents using online technology services. A higher percentage of Singaporeans owned mobile phones than all other countries. Smart-phone use was very high. Why was mobile phone adoption so rapid in emerging nations? Expansion of the middle class bolstered by more disposable income was one reason, the magazine suggested. Demand for connected wireless devices such as smart-phones was also being driven by social-networking applications. Respondents in emerging countries used mobile devices to access Internet-enabled applications and services more than they used computers.

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The magazine noted a wide disparity regarding ownership of web-enabled mobile phones. China ranked first with 59 per cent and Singapore second at 46 per cent. But the United States was well behind, with only 24 per cent of respondents saying they had a smart-phone.

Mobile phone penetration in Asia

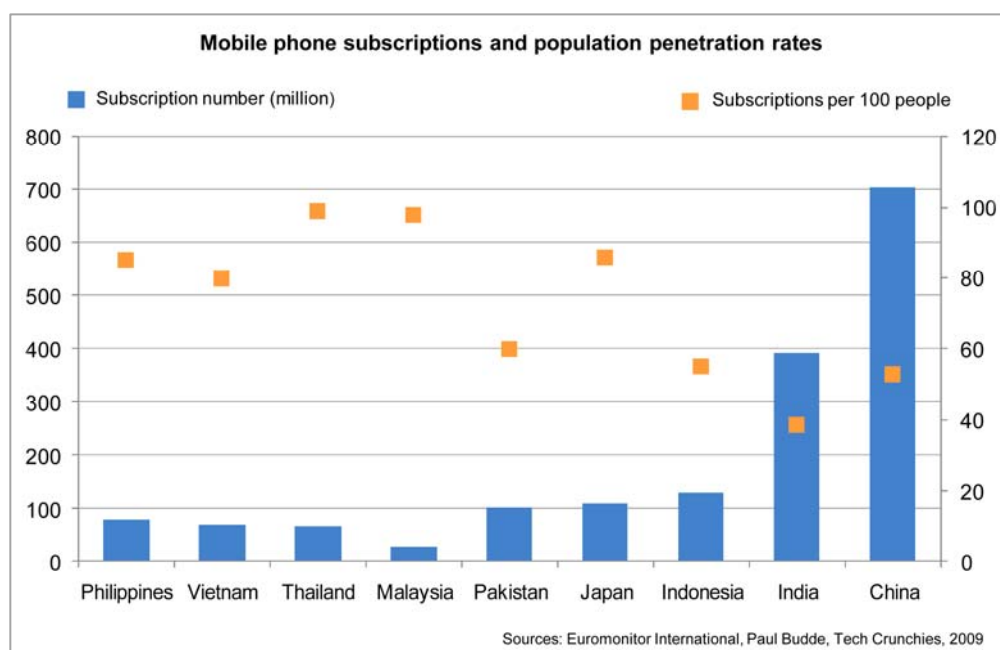
This next section of the chapter provides data about mobile phone use in a range of Asian countries.

By early 2009 **Vietnam's** mobile phone service providers claimed almost 70 million subscribers, representing a national penetration rate of 80 per cent. More than four in five of those subscribers were pre-paid. In April 2009 the government issued four 3G licences, signalling what will probably be the market's next phase in its development. Mobile phone ownership in Vietnam is much higher in the main cities – 74 per cent of people in Ho Chi Minh City and Hanoi own a mobile. The numbers are lower in other cities (58 per cent) and rural areas (37 per cent), but still high by regional standards. Vietnamese consumers are resilient and remained positive despite the global economic crisis. Vietnam's consumers were ranked the fourth most confident worldwide, according to an October 2009 global consumer confidence study. Vietnam's mobile phone penetration rate is higher than that of its larger neighbours China and India.

Internet access in Vietnam is about the same as in China and higher than in India:

26 per cent of Vietnamese had access to the Internet, which represented about 22.7 million people as of December 2009, according to the Internet World Stats web site (www.internetworldstats.com/asia/vn.htm). In February 2010 about 384 million people were online in China, or about 26 per cent of the population, according to the Chinese Academy of Social Sciences. China is making real strides in becoming an advanced telecommunications market. The mobile sector expanded by 18 per cent in 2008 and was expanding at a rate of more than 15 per cent in 2009. By the end of 2007, mobile penetration in China stood at 41.4 per cent of the population. In December 2009 the *People's Daily* reported that the number of mobile phone users rose by 97.32 million to 739 million in the first 11 months of 2009. This meant one in every two citizens in China had a mobile phone. The number of people who accessed the Internet via their mobile increased by 120 million to reach 233 million, or about 61 per cent.

In **Hong Kong** growth in the mobile phone arena continues despite a seemingly saturated market. By mid 2009 penetration was at 170 per cent in a population of almost 7 million, putting Hong Kong, Singapore and Macau at the top of the Asian mobile market. Growth in the mobile sector started in 1999 when the market was boosted by the introduction of number portability. The roll-out of 3G services is expected to be a feature of 2010. More than 85 per cent of Hong Kong's households had access to broadband Internet by the end of 2009.



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Macau, a Special Administrative Region of China similar to Hong Kong, has one of the most developed mobile phone markets in the world. By early 2010 the region had more than 1 million mobile subscribers, representing a penetration rate of more than 190 per cent. Put another way, most people in Macau had two mobile phones. 3G has been available in Macau since 2005. Australian-based telecoms analyst Paul Budde said mobile communications and Internet-related services looked like continuing to be among the better performing segments of the industry, boosted by partial liberalisation of Macau's telecom services market. "Macau has been busy adopting the Internet and the administration appears keen to encourage this," Budde said. "Broadband Internet, using mainly DSL, has been developing quickly." By 2009 the region had 368,000 Internet subscribers, in a population of 542,200.

In **India**, the number of mobile phone subscribers reached 391.76 million as of 31 March 2009. Most Indians prefer sending text messages (SMS) instead of calling because it is cheaper. People use texts for a wide range of reasons, including checking their bank balance, paying bills, and checking the status of trains and flights. Data from the Telecoms Regulatory Authority in India (TRAI) in late 2009 showed Indians sent an average of 29 SMS a month. If we multiply 29 by the ever-growing number of mobile phone subscribers we get an idea of the huge number of SMS that Indians generate. News via SMS is popular with all age groups. The popularity of other subjects depends on age. Jokes are popular amongst people aged between 18 and 44. Astrology is most popular among the 45 to 54 age group. More than half (57 per cent) of people aged 55 and older subscribe to information about stocks, finance and business, TRAI said.

In January 2010 Google announced a two-year agreement with India's cricket authorities to broadcast live via YouTube all of the games played in the Indian Premier League (IPL). This is significant because of the size of the audience. Lalit Modi, an IPL spokesman, said the deal changed the world of sports broadcasting. "The Internet has changed the lives of everyone and this will do the same for sport. We are now taking our event truly global for the first time.

Google gives us access to 500 million pairs of eyes every single moment of the day. There are a few countries where the feed will be near as live which means there will be a delay of only a few minutes, but most places will be able to see live streaming of the action." Viewers will be able to choose camera positions, and freeze or fast forward footage. They can also access chat rooms and statistics on the IPL's official website. With time, we will see video increasingly available on the mobile phone in India.

The mobile phone market in **Indonesia** continues to expand at about 50 per cent a year, though it was difficult to get recent data. By March 2007, the total mobile subscriber base had passed 65 million, up from 12 million subscribers in 2002. By March 2007 the country's mobile penetration rate had reached almost 30 per cent, with considerable potential remaining for further growth in this market, telecoms analyst Paul Budde wrote on his web site. The mobile subscriber base passed 130 million by January 2009. Indonesia's mobile penetration rate was approaching 55 per cent, Budde said, and "considerable potential for further growth" remained. "The operators have been scrambling to meet the anticipated demand." Budde said market interest had started to focus on the third generation (3G) services being offered by five operators. "While 3G subscribers comprised only around 7 per cent of the national subscriber base by early 2009, the potential of 3G to boost average revenue per user (ARPU) was not lost on the operators and competition was starting to heat up on the 3G front. Telkomsel is indeed making its presence felt in this market segment, claiming about 72 per cent of the nine million 3G subscribers at end-2008." Indonesia had about 30 million Internet users by early 2009, representing a penetration of 12 per cent. Broadband Internet access was "virtually non-existent," Budde said, with broadband subscriptions about 15 per cent of the total Internet subscriber base.

By early 2009 almost all of the 27 million people in **Malaysia** had a mobile phone, giving the country the second highest mobile penetration in South East Asia after Singapore. Growth has been phenomenal. In 1998 Malaysia had only 2 million mobile subscribers. Within a decade the number had jumped to 27 million (almost 100 per

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cent penetration). Malaysians are keen texters. The telecoms regulator, the Malaysian Communications and Multimedia Commission, said 73 billion SMS were sent in 2008 – that's an average of 2,700 per mobile phone user that year. A feature of 2009 was a significant push into 3G services. Broadband Internet penetration remains low. From a lowly penetration of 1 per cent at the end of 2004, adoption had risen to about 16 per cent of households by the end of 2008.

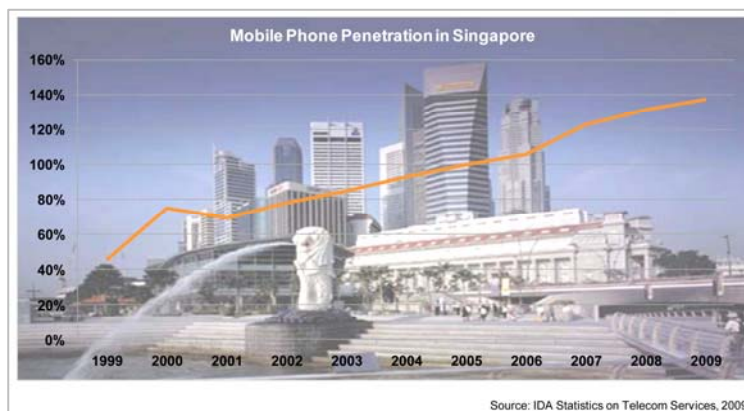
Thailand's mobile phone market reached 67.5 million subscribers by late 2009, giving the country almost 100 per cent penetration. The mobile industry saw more than eight consecutive years of strong growth up to 2009. Broadband Internet also grew vigorously in 2008, at an annual rate of about 60 per cent, though demand came from a relatively small base. Data for 2009 were not available. Overall broadband penetration still remained low, at 3 per cent in 2009. Thailand had about 6 million Internet subscribers.

Singapore had the highest penetration of mobile phones (131 per cent) in South East Asia. In January 2009 there were 6.3 million subscribers. By early 2009 Singapore had 2.5 million 3G subscribers, a remarkable 40 per cent of the total mobile subscriber base. Singapore's Wireless@SG initiative has established more than 5,000 public wi-fi hotspots around the island. More than 90 per cent of Singapore's households had some form of high-speed broadband Internet by 2009, and this was expected to reach 100 per cent by 2010. The government has initiated a huge project to build the Next Generation National Infocomm Infrastructure (Next Gen NII), an island-wide broadband network, at an estimated cost of US\$ 1.2 billion. Singapore is a truly wired nation.

The capital of **Afghanistan**, Kabul, is one of the few cities in the world to have extensive wireless Internet coverage. It came about because three decades of war ruined most of the city's land-based communications networks. Afghanistan leads the world in the number of faults reported: 25 for every 100 landlines. The biggest users of the Internet in Kabul are not the Afghan people because most cannot afford the service. The BBC's Najieh Ghulami went to Afghanistan to look at the role the Internet plays in people's lives. She said for some the Internet was life changing. Ghulami interviewed Jamshid Sultanzada, an Internet entrepreneur, who started taking evening classes at a skills training centre during the years of Taliban rule. "Students at this centre have to pay a small fee to attend. But the two educational skills taught there are seen by students and staff alike as crucial for a better life: learning English and mastering computers," Ghulami wrote on the BBC's web site. Many Afghans saw the Internet as a tool for empowering their community, she said. Most recently available data for Afghanistan in 2008 showed 5.4 million mobile phones in a population of 28.3 million (data came from the CIA Factbook), a penetration rate of 22 per cent.

In Japan, the telecommunications sector is one of the most active markets in the world. Strong competition was noted among mobile operators in the 3G arena: 3G comprised 95 per cent of the country's mobile market, or about 105 million of the 110 million mobile subscribers (more than 85 per cent of the population). By early 2010 Japan had more than 30 million broadband lines, making it the third largest broadband country in the world after the US and China. Japan's four main mobile operators – NTT DoCoMo, KDDI (au), Softbank Mobile and eMobile – plan to invest up to US\$10 billion in "3.9G"

mobile services, offering end users the prospect of even better and faster options than they have today. The new networks will give performance roughly similar to fibre-optic networks.



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South Korea has one of the most vibrant telecommunications markets in the world. More than 90 per cent of South Koreans have at least one mobile phone. As of early 2009 the country had three main mobile operators – SK Telecom held just over 50 per cent of the market, KTF about 30 per cent and LG Telecom almost 20 per cent. South Korea is considered a world leader in 3G technologies and has the world's highest percentage of 3G users. South Korea also has the world's highest number of broadband services per capita. By early 2009, about 90 per cent of households were broadband subscribers. South Korea was an early adopter of triple-play models. A single provider sells access to television, broadband Internet and voice telephony as a package of services. Japan and South Korea rank first and second among OECD nations for broadband speeds. South Korea's average speed is 78Mb/s compared with Japan's average of 90Mb/s.

South Korea's telecoms industry developed WiBro, or Wireless Broadband Internet. It was devised to overcome the data rate limitation of mobile phones and to add mobility to broadband Internet. WiBro is the South Korean name for the IEEE 802.16e (mobile Wimax) international standard. SK Telecom and KTF (see previous paragraph for details) launched a commercial service in June 2006. WiBro offers an average data speed of 30 to 50 Mb/s per carrier and covers a radius of 1 to 5 kilometres. This means people can access the Internet on portable devices like laptops. To put those speeds into perspective: Data speeds of about 18 Mb/s are required for high-definition television, so people can watch high-quality video via the Internet on the laptops. Hotspots for public wireless services have a radius of about 50 metres. With WiBro, people can access the Internet while moving at up to 120 km/h (74.5 miles per hour). By comparison, wireless local area networks offer mobility at up to walking speed, and mobile phone technologies provide access at up to 250 km/h. On 3 April 2007, KT launched WiBro coverage for all areas of the capital, Seoul, including all subway lines. The author has traveled on many of these lines and the tunnels are often more than a kilometre deep. People in South Korea can subscribe to a package that

gives them a WiBro "Egg". It consists of a WiBro modem with a wifi card on it, plus a battery. This effectively provides them with an individual roving wifi hotspot – giving Internet access at any time and any place. The "Egg" offers 50Gb of monthly data usage for about US\$20 a month.

Data traffic on mobiles

The Swedish mobile phone manufacturer Ericsson has calculated that data traffic on mobile phones exceeded voice traffic for the first time in December 2009. Ericsson based its findings on measurements from live networks from around the world. It said data traffic globally grew 280 per cent in each of the previous two years, and was forecast to double annually over the next five years. Ericsson measurements also showed traffic in 3G networks passed 2G-network traffic over the same period. The main reason was the growth of the use of smart-phones, and the popularity of social networking sites on mobile devices. Hans Vestberg, Ericsson's president and CEO, described the change as a significant milestone. About 400 million mobile broadband subscribers generated more data traffic than the voice traffic from all of the 4.6 billion mobile subscribers around the world, Vestberg said. "Our view that the appeal of anywhere, anytime connectivity would drive mobile broadband growth is confirmed by the real world measurements under taken by Ericsson." Vestberg said social networking via mobile devices and mobile broadband-based PCs accounted for a large percentage of mobile data traffic. For example, more than 200 mobile operators in 60 countries were deploying and promoting Facebook mobile products, with more than 100 million active users.

The Asian region continues to harness innovation in exciting ways, and these will be explored in later chapters.

Worldwide Mobile Telecom Rankings

Rank	Provider	Connections	Markets
1	China Mobile	525,331,266	2
2	Vodafone Group	309,580,257	23
3	Telefonica Group	202,333,430	20
4	America Movil Group	186,544,900	17
5	Bharti Airtel	169,468,523	18
6	China Unicom	147,587,000	1
7	Deutsche Telekom	127,919,986	12
8	Telenor Group	101,367,838	10

Source: Wireless Intelligence, 2010