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Asia's Media Innovators

by Stephen Quinn

November 2010 – Chapter Ten

A mobile phone future for India and China

The mobile phone is predicted to be one of the main platforms for innovation in Asia in coming years, especially in China and India. These two countries have by far the largest concentration of mobile phones in the world. People embrace mobile phones for a range of reasons. Mobiles cost much less than computers, require relatively simple infrastructure, and even less technological knowledge. Because of the low cost of labour, mobile phones in developing countries are much cheaper and easier to repair than computers.

People with limited literacy can use them. They are portable and permit a range of easy communications including text messaging. In most countries in Asia a mobile phone costs less than \$US 25, and connection costs are low – in India calls cost less than one US cent a minute. As is discussed later in the chapter, inexpensive smartphones such as Huawei IDEOS become available for less than \$US 100. A smartphone has the computing capacity of a desktop machine but also functions as a mobile phone. The combined populations of India and China represent

two out of every five people in the world. This final chapter describes media innovation in those populous nations.

Mobile phone innovations in India

By 2014 India will have the most mobile phones of any nation. That year India's population is expected to hit 1.26 billion, and those people will be using 1.01 billion mobile phones. This represents a "tele-density" of 80 per cent. In other words, four out of every five Indians will have access to a mobile device by 2014. India had reached 600 million mobile connections by late 2010, second only to China. Neighbouring nations like Pakistan, Bangladesh and Sri Lanka were powering ahead in terms of connections: in percentage terms Pakistan had 59 per cent penetration, Bangladesh 31 per cent and Sri Lanka 51 per cent. As this chapter will show, the mobile device is empowering millions of people by giving them access to information, content and services in convenient ways.

The mBillionth awards for South Asia announced in 2010 were the first of their kind in the region to recognise innovations in the mobile space in the areas of journalism and media. The name mBillionth refers to the project's milestone of 1,000 million mobile phone users in the area within the next half decade. The total is a distinct possibility, given the pace of mobile phone growth: somewhere between 7 million and 20 million new subscribers connect each month in the region, depending on which source one uses.

Mobile phones penetration

Country	number of mobiles (in million)	% population covered
Sri Lanka	16.27	81.4
Pakistan	97.58	59.6
India	600	46.4
China	840	60.3
Bhutan	0.327	47.8
Afghanistan	12.9	35.1
Bangladesh	52.43	34.2
Nepal	5.77	23.2

Sources: Analysys International and Techcrunchies.com, 2010



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November 2010 – Chapter Ten The mBillionth awards were intended to become annual from 2010 to recognise South Asia's leading mobile content platforms. Mobile would become the main platform of digital content and citizen service delivery, noted R. Chandrashekhar, secretary of India's Department of Information Technology in July 2010. He is probably better known as the father of e-governance in India. Chandrashekhar's department endorsed the awards, announced on 23 July 2010. Osama Manzar, curator of the mBillionth awards and founding director of India's Digital Empowerment Foundation

(http://defindia.net/), said mobile devices would impact on all businesses. "Entrepreneurs from all sectors, community leaders from all regions and government officials from all departments are curious to know how they can leverage the mobility platform to cause transformational impact ... and influence."

The award's partners included Mint newspaper (discussed in the first volume of Asia's Media Innovators), and companies like On-Mobile, IMImobile, One97 and the umbrella organisation Internet and Mobile Association of India (IMAI). Subho Ray, president of IMAI, said the region was in the midst of a "mobile revolution" that was expanding radically in terms of grassroots reach, mass impact and market size. Arvind Rao, chairman and CEO of OnMobile, said mobile consumers from both rural and urban India were eager to explore new territories that would satisfy their needs for entertainment and information. "From banking to healthcare, music and television to gaming, a variety of services can be offered over the mobile, enabled by the advent of affordable high-speed connectivity," he said.

Vishwanath Alluri, chairman and CEO of IMI Mobile, said 70 per cent of India's population live in rural areas, and 56 per cent of the country's income come from villages. The next growth area for mobile services was definitely rural India, which was triple the size of the urban market. Vijay Shekhar Sharma, founder and managing director of One97 Communications, said mobile phones were changing the way people were living their day-to-day lives. "The challenge is to transform telecom networks into an empowering media by delivering meaningful content and services to all regions and communities."

Details of the mBillionth nominations showed the range of innovation in the region. In the education and learning category, Indian software company Willager developed its "Ability" tool that converts typed text into a sign-language animation sequence to help differently-abled people comprehend messages. The software translates text into both one-handed sign language, used in the United States, and twohanded sign language, common in India and the UK. A product called Dakia from India's One97 Communication aims to empower rural communities with social and financial information. Sri Lanka's Dialog Telekom was nominated for a service called Tradenet that allows communities at the bottom of the social pyramid to trade products and services via mobile phone. Mahabir Pun, a Nepali teacher, has been using wireless technologies to offer services like video conferencing for tele-medicine to remote areas. In 2007 Mahabir Pun was awarded the Ramon Magsaysay Award, considered by many to be the equivalent of a Nobel Prize for Asia.

India's Comviva Technologies received a nomination in the business and commerce category for its mobiquity mMoney software that permits mobile phone banking that manages all aspects of the remittance cycle. A vast number of Indians remit money home from overseas, increasingly via their mobile phone. Shahjalal University of Science and Technology in Bangladesh was nominated for its paperless student admission system. In the entertainment category, India's OnMobile's m-Search provides software that searches for music across a range of voice, SMS and Internet channels. And in the news and journalism category, See 'n' Report from Pakistan received a nomination for its software that lets citizen journalists send photographs and videos from their mobile phones.

Mobile phone innovations

CGnet Swara is an innovative mobile phone system launched in 2007 by a Knight international journalism fellow, Shubhranshu Choudhary. The system allows India's 80 million Adivasi tribal community in the state of Chhattisgarh to tell their own stories via mobile phone and foster discussion about issues the people consider important in their state. Adivasi is the local dialect of Hindi, and "swara" is the local word for "voice".

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November 2010 – Chapter Ten Choudhary, a Knight international journalism fellow, pioneered the project in partnership with UNICEF, the Massachusetts Institute of Technology and Microsoft Research India.

Initially citizen journalists were trained to produce audio reports with mobile phones and their stories shared on the CGnet Swara network, a phone-message system where community information and news is posted after being vetted by professional journalists. Choudhary intended CGnet Swara to be a voice for the tribal communities of Chhattisgarh. MIT's Latif Alam and Microsoft Research India's Bill Thies developed a new transmission system that bypasses the Internet. Instead, it uses mobile phone software that transmits audio reports using technology that normally delivers text messages. The reports are produced in local languages spoken by Adivasi tribes such as Kudukh and Gondi. India bans all radio news except on the government station; hence the need for another transmission process.

This project allows people who previously had no access to news due to language or literacy barriers to receive independent audio news for the first time. Microsoft's Thies noted that services for accessing information over the phone were not new. But this system was one of the first that allowed callers to contribute their own content to the network, he said. Gondi is on UNESCO's list of most-endangered languages. "Though Gondi is spoken by 2.7 million people, according to an Indian census, this is the first news outlet in the Gondi language in any form," Choudhary wrote on the Knight International Journalism Fellows' web site. He plans to expand the training to four other states in the Dandakaranya region where Adivasis speakers live. Anyone with a mobile phone can listen to the reports. Users simply respond to voice prompts, so they do not have to be literate to access the reports. They are made public to CGnet Swara network members and anyone else interested in tribal community news. Choudhary said the strong oral story telling tradition among the Adivasis people combined with the wide use of mobile phones in the region made CGnet Swara a great news-sharing platform for the community.

The initiative received national coverage in a major newspaper, *The Hindu*, and won praise from independent reporters. Veteran journalist Sudhir Pattnaik said the network would revolutionise journalism at the grassroots level. Pattnaik is editor of the *Samadrist* news magazine and chairman of Independent Media, a group of filmmakers, writers and journalists who develop alternative media initiatives in the eastern state of Orissa. A video about CGnet Swara's award is at www.youtube.com/mbillionth#p/c/12/3ye7rFUOmSA



Another successful Indian innovation is Gaon Ki Awaaz, a phone-based news service broadcast every morning and evening to the residents of Rampur in the state of Uttar Pradesh. It was the country's first mobile news service for rural India. "Gaon ki awaaz" means village voice in Hindi. The spread of mobile telephony across rural India gave the project its infrastructure. Gaon Ki Awaaz began in December 2009 with bulletins sent to about 20 villagers. Within six months its subscriber base had grown to about 250.

The news service was the brainchild of Sunil Saxena, dean of the International Media Institute of India, based in Noida on the outskirts New Delhi. "The motivation was to create a rural news and information service that could take the news and information to communities that cannot read newspapers because they are illiterate or [they cannot] watch news on television because of lack of electricity," Saxena said. "We wanted to create a platform for the villagers to share their knowledge, obtain information or even report about social abuses and human rights violations."

Saxena said with more penetration of mobile phones and technology in rural areas the need for information was also growing. The bulletins are compiled in Avadhi, the

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November 2010 – Chapter Ten Hindi dialect in the area. Typical news includes information about village fairs, weddings, births and deaths, and thefts. Bulletins also provide details on health camps, local schools, sports coaching classes, and government directives on employment, healthcare and farm prices. Mint newspaper in New Delhi wrote a story about Gaon Ki Awaaz, describing how reporters Divyakar Pratap Singh and Priya Gupta travelled around the village to collect and record news with a mobile phone. Stories were sent to an editor using the phone's MMS capacity. Editor Satyendra Pratap sends the stories to Saxena in Nodia via MMS, who converts them into digital WAV files. These files are then emailed as attachments to Netxcell [correct spelling], an information technology company in Hyderabad that uses an application called Mobile Internet Platform, or MIP, to broadcast the bulletins as voice calls to subscribers.

The service was available for free until the end of May 2010. But from June Netxcell starting charging a fee of 10 rupees a month (US 23 cents). On the first day of the subscription drive, 42 of the 45 villagers approached paid the subscription fee. "It is a great step forward for Gaon Ki Awaaz or Village Voice," said Satyendra Pratap, editor of the service. "It shows that the villagers want news about themselves, and in their [own] language."

See 'n' Report

SeenReport is a citizen journalism service where users submit photos, videos and text forms of news as it happens via SMS, MMS, or email. SeenReport won a mBillionth journalism award in July 2010. The name comes from the phrase "see 'n' report", a contraction of "seen and reported". The service enables people to take photos and videos with their mobile phones when they witness breaking news. SeenReport was designed both as a platform for augmenting main stories at online newspapers with multimedia content, plus a way to publish breaking news before it becomes headlines in mainstream media. Its Pakistani designers provide the software, which is cloudbased and open-source technology, to other media organisations to help them launch their own citizen journalism initiatives.

SeenReport licenses the software to other companies and this helps generate income.

The monthly licence fee model for adopters is the company's main source of revenue. SeenReport was designed in such a way that it could be easily adapted and customised by other users. Several news and media sites in Asia have purchased the platform. Adopters customise the software and the editorial control systems. SeenReport's approach is to publish all content as it arrives and rely on the audience, a form of crowd sourcing or social censorship, to refine and edit that content. Other sites prefer to have more traditional editors in place to review content. The software is customisable to allow for a range of editorial processes and approaches.

Sharjeel Qureshi was a founder of the SeenReport service. He told the PBS IdeaLab site, published in the United States: "A citizen reporter captures an event on a mobile phone and sends the content to SeenReport. There is no manual intervention at this stage. The content is automatically published on the SeenReport website to better ensure real-time reports which augment larger ongoing events." Find more details at www.pbs.org/idealab/2010/08/seenreport-helps-citizens-report-onfloods-in-pakistan239.html.

The SeenReport platform is intelligent enough to detect submitted text and suggest related content and news stories. People can also post anonymously and they are not required to create complete profiles. If several citizen reporters submitted reports from the same event on their mobiles, such as the widespread floods in Pakistan in 2010, the system establishes a single thread from the incoming reports. Qureshi described it as a version of LinkedIn for freelance journalists. LinkedIn is a social networking site similar to Facebook but its main audience is professional people 40 or older.

SeenReport has been integrated into social network sites. When stories are published on the web, they are automatically posted on SeenReport's Twitter and Facebook accounts. If a citizen journalist links their personal social media accounts to SeenReport, their reports will also be automatically posted to those locations.

Qureshi said he and his team started working on SeenReport in 2007. At a time heavy government imposed censorship on media

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November 2010 -Chapter Ten organisations in the region and the Internet was the only free medium. Mobile phones grew in number in Pakistan and he and his colleagues "thought it would be a great idea to empower people to report news right from the cell phone and broadcast to the world in real-time". The site launched in April 2008, in the wake of Pakistan's Long March. This was the name for the social unrest that followed the sacking of the country's judiciary. SeenReport enabled citizens at home to witness the historical moment. Many major international news organisations such as the BBC and the alternative blogging forum Global Voices picked up SeenReport's material.

In October 2007 Reuters launched Reuters Market Light (RML), a pioneering service that provides crucial, local and customised information to Indian farmers via the mobile phone. RML won an award in the enterprise category at the mBillionth awards in July 2010. It launched initially in the western state of Maharashtra and a year later expanded to the state of Punjab. Examples of RML's information included spot crop prices, advisories for selected crops, commodity news and other information relevant to the farming community. Since its launch more than 200,000 farmers in 15,000 villages across 10 states in India have subscribed to RML. Its accurate and timely information has the potential to reduce crop wastage, which across India runs into billions of dollars a year. Almost two-thirds of India's population depend on agriculture for a living. Because only 40 per cent of farmland is irrigated and markets are often a long way from farms, farmers are vulnerable to shifts in commodity prices or weather conditions. "The real question for farmers is how to market their produce, and such services [as RML] will surely help them in taking appropriate decisions," farm minister Sharad Pawar said at the service's launch in Pune in Maharashtra. In 2010 RML was recognised by the United Nations Development Program (UNDP) and the UK government as one of the six initiatives that had the potential to contribute to the achievement of the Millennium Development Goals (MDGs).

As well as having the potential to improve India's rural societies, the mobile phone has also become a key component of media change in China.

New media developments in China

More than 60 per cent of China's population of 1.34 billion owned a mobile phone as of September 2010, compared with less than 10 per cent at the start of the decade. The "tele-density" in Beijing and Shanghai was more than 90 per cent, according to estimates by BDA China, a British research firm based in Beijing. China's three mobilephone operators combined had 814 million subscribers by the end of July 2010, giving China the largest number of mobile phone subscriptions in the world. The country also has the largest number of Internet connections: 420 million as of June 2010, and predicted to jump to 469 million by the end of that year.

Of the people living in China's major cities, almost a third replaced their mobile phones regularly, noted Thomas Crampton, Asia-Pacific director of the global social media team for Ogilvy Public Relations. "A few minutes on the streets of Beijing or Shanghai confirms the affection Chinese consumers have for the latest mobile phone, but it is interesting to see research supporting the observation," Crampton wrote on his blog thomascrampton.com in September 2010. A June 2009 report about Chinese consumers by Roland Berger Strategy Consultants noted that 28 per cent of all mobile phone owners replaced their phone if they considered them outdated. And the figure jumped to 32 per cent in the major cities.

The Chinese are the world's most enthusiastic Internet users, a study of global online habits has revealed. TNS, the market research company owned by British marketing giant WPP, interviewed almost 50,000 people in 46 countries for its "Digital Life" study. Details can be found at http://discoverdigitallife.com/. The Chinese were also among the most receptive to brands and advertisers communicating with them via social networking sites, suggesting substantial opportunities for online marketers in Asia. The survey showed that emerging markets were overtaking Western Europe and North America in use of social networks, and noted sharp regional differences in behaviour patterns. TNS ranked global online populations through the time spent using the Internet and people's attitudes to technology. People in Latin America, the Middle East and China spent more time with social networks than they did with

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November 2010 – Chapter Ten email, the survey said, and mobile phone access drove their Internet use. Those same populations were more likely to post blogs, photographs or videos online, and they valued Internet access more highly than people in more developed markets.

China had the world's largest number of mobile phone subscribers as of October 2010 and China Mobile continued as the world's biggest mobile phone carrier in terms of number of customers. In September 2010 China Mobile announced plans to start an Internet-search engine in 2011 to challenge Baidu, the country's main search engine. In the decade to 2010, China Mobile's revenues jumped almost sevenfold and its market valuation bettered those of western industry giants AT&T and Vodafone Group. China Mobile chairman Wang Jianzhou told the World Economic Forum in Tianjin in September 2010 that the company planned to use its dominant position in the mobile phone market to expand into the Internet-search market. China Mobile gets about 70 per cent of its revenue from voice, and growth was flat by late 2010, suggesting the motivation of the move into mobile data services that are needed when people surf the Internet from their mobile phone.

French news agency AFP reported on 12 October 2010 that Chinese e-commerce giant Alibaba Group had also launched a search engine, presumably to capitalise on Google's shrinking market share in China. John Spelich, a company spokesman, said in an email to AFP that the engine, called Etao, was being tested before being officially launched by Taobao. Microsoft's Bing technology would power the search engine. Taobao, which Alibaba Group owns, is China's largest online consumer e-commerce site. Google's share of China's online market fell to 24.2 per cent in the three months to June 2010, from 30.9 per cent in the first quarter, research firm Analysys International reported. Meanwhile, Baidu increased its dominance, with its market share rising to 70 per cent in the second guarter of 2010 from 64 per cent in the first three months of the year, Analysys said.

In August 2010 China Mobile's parent corporation reached agreement with China's official Xinhua news agency to partner in Internet search. The partnership will lead to the creation of a venture that should begin

providing Internet search services from 2011, Wang said. The new search engine will be available for personal computers and mobile phones. China Mobile would not exclude the search engine of market leader Baidu from phones on its network, he said. Baidu led the mobile-Internet search market with a 34.3 per cent share, the *South China Morning Post* reported on 14 September 2010, citing research company Analysys International.

Internet video in China

Internet-delivered video has become very popular in China. Tudou, founded by Gary Wang, and YouKu, established by Victor Koo, are the giants in China. A beta version of YouKu - which means "excellent and cool" - began in June 2006, and the website was formally launched in December that year. The company initially focused on usergenerated content but shifted focus to professionally produced videos licensed from more than 1,500 content partners. By January 2010 Youku.com was ranked as the leading Chinese Internet video provider, according to Internet metrics company CR-Nielsen. That month Youku and competitor Tudou announced the creation of a video exchange network, whereby Youku and Tudou would cross-license professionally produced video content. In 2009 Youku recorded revenues of 200 million RMB (\$US 30 million).

Tudou went live on 15 April 2005 and within two and a half years was serving more than 55 million videos a day. Because the average Tudou video is longer than the average YouTube video, the total number of minutes it streams each day is significantly larger about 15 billion minutes for Tudou against 3 billion for YouTube. Youku is said to be more popular among older males in northern China and Tuodou is more popular among women. Imitation is the most sincere form of flattery, and in 2010 China's state-run media started investing heavily into creating online video content. Thomas Crampton, Asia-Pacific director of the global social media team for Ogilvy Public Relations, reported that government agencies had set aside 120 billion RMB (about \$US 18 million) to develop online content.

Social media in China

Asia presents a huge commercial opportunity for online advertising because of the

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November 2010 -Chapter Ten large number of people connected via social media. China alone had 221 million bloggers in September 2010, said social media guru Thomas Crampton, Asia-Pacific director of the global social media team for Ogilvy Public Relations. Asia was the "most exciting part of the world for what's going on in social media," Crampton said, noting that Asians were jumping on the social media bandwagon at a faster rate than the rest of the world. Facebook launched an Asian sales office in Singapore in September 2010 to be better placed to sell advertisements to companies aiming for the region's consumers. Blake Chandlee, Facebook's commercial director for regions outside North America and Western Europe, described the Asian market as "very, very big". "It's an enormous opportunity for us." Crampton said the growing number of Asians connected to the Internet was a key driver behind the region's social media craze.

Social media sites like Facebook and Twitter are theoretically not available in China but tech-savvy people know how to get access. The Facebakers site (www.facebakers.com/) showed Indonesia was second behind the United States in the number of monthly active Facebook subscribers, though its 28 million members was well behind the US's 140.5 million in October 2010. It is difficult to establish exact numbers because Facebook declines to provide regional or country breakdowns. But the Facebakers site does offer relatively objective data. As of October 2010 Facebook had more than 550 million users worldwide, and according to Facebakers Asia contributed almost a fifth of the total, or 108 million. By the middle of 2010 Asians also provide the most "global tweets" on the micro-blogging platform Twitter, according to data from Internet research company Semiocast. "Twitter users in Asia, mainly located in Japan, Indonesia and South Korea, account for 37 per cent of tweets," said Semiocast on 22 June 2010, after it studied 2.9 million tweets over a period of 24 hours.

A report research firm Nielsen published in July 2010 said that while the United States pioneered much of the early Web 2.0 and social media innovation, Asia was "shaping – and in some cases leading – the new social media landscape". The report added that Asia's social media adoption had leapt past Western adoption rates. As of early

2010, for example, China's 221 million bloggers were more than twice the number in the United States. Data from research firm Forrester showed Chinese, South Korean and Japanese created video, music and text content for social media at a much higher rate than Americans did in 2009. And despite China's ban on Facebook and Twitter, the nation still had the largest number of social media users of any country thanks to locally developed substitutes, Crampton said. "What has happened as a result [of the banning of Twitter and Facebook] is that domestic players have arrived, and these domestic players are the rough equivalents of what is happening internationally," he said. For example, Chinese video-sharing website YouKu and social networking site Qzone were "one hundred per cent replacements" for foreign sites such as You-Tube and Facebook, Crampton said.

On 16 September 2010 the Chinese portal Sina.com published its first white paper about the Chinese micro-blog market. The white paper predicted that by the end of 2010 China would have more than 65 million registered active micro-blogging accounts, and by 2011 the number would be more than 100 million. Sina's micro-blog service is the top micro-blog site in China by any range of measurements, including brand recognition and frequency of use. As the name suggests, micro-blogging is blogging with a limited number of characters. For example, Twitter permits a maximum of 140 characters.

Chinese people are increasingly updating micro-blogs with their mobile phones because the process is simple, fast and easy. The Sina white paper said almost two in five people (37 per cent) logged onto their Sina micro-blogs via Internet-enabled mobile phones. People start sending and updating content from 10am each day and peak usage tends to be in the evening about 8pm. Sina's statistics showed that 57 per cent of all Sina micro-bloggers were male, but among its most active users the genders were reversed, with 65 per cent of females being the most active. More about Sina can be found at http://english.sina.com/index. html and details of the white paper can be found at www.chinatechnews.com/2010/09/ 16/12518-chinas-sina-com-publishes-firstmicroblog-white-paper.

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November 2010 – Chapter Ten China's mobile Internet users are overwhelmingly male, at 89 per cent of the total. But research from Analysys in October 2010 showed that the number of women browsing on their phones has jumped from 5 per cent in 2009 to almost 11 per cent in 2010. This change in gender demographics will probably produce a range of new web sites and new kinds of female-focused phones. This is inevitable given that China is the world's largest mobile phone market.

Rise in smartphone numbers

One of the big developments we can expect in the near future is a rise in the number of smartphones. A smartphone functions as a mobile phone but has the capacity of a desktop computer plus a range of extras such as a camera, smart software and the ability to surf the Internet. Smartphones are expected to account for 37 per cent of the global mobile phone market by 2014, and mobile Internet access is expected to grow at a compound annual rate of 39 per cent in the years to 2014.

Parallel with smartphone adoption is the growing adoption of newer smartphone operating systems from Apple and Android. Not surprisingly, older operating systems like Symbian and Windows Mobile have become less popular in terms of market share, though they still have the largest numbers. In July 2010 Comscore published their results from a global study of the market share of smartphone operating systems. Apple and Google were the clear winners. The chart below shows the change in mar-

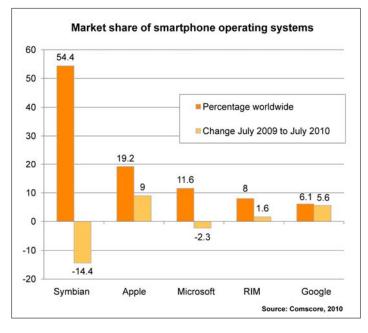
ket share in percentage points between July 2009 and July 2010.

Smartphone adoption in the five biggest European economies - the United Kingdom, France, Germany, Spain and Italy - grew 41 per cent in the year to September 2010, to 60.8 million subscribers. Prior to 2009 Nokia sold more than two out of every three smartphones worldwide. They used the Symbian operating system. But by mid 2010, the number had dropped to one in every two. The chart above shows Symbian's market share dropped almost 15 per cent in a year. Apple's iPhone has been the challenger among smartphones since its launch in 2007. And a range of new phones has also become available since 2010. Many use the Android operating system provided free by Google.

As people in emerging economies demand web access from their mobile phones, the challenge for manufacturers is to offer more functions without increasing the cost too much. Many manufacturers hope the free Android operating system will help make available smartphones with touchscreens for under \$US 100. In September 2010 HTC, a Taiwanese company, launched two new models of the Desire, the HD and the Z, the former a high-end device was designed as an alternative to the iPhone 4. The HD cost about \$US 150.

The Chinese technology firm Huawei sells competitively priced smartphones running Google's Android operating system. Many of

> those phones are sold in Africa. For example, the Huawei IDEOS is the cheapest smartphone in the Kenyan market and sells for 8,000 shillings (\$US 99). The IDEOS is a touch-screen phone that comes with Bluetooth connectivity, GPS, a 3.2megapixel camera, up to 16Gb of storage and it can be transformed into a 3G wi-fi hotspot that connects up to eight devices. It is expected to increase the penetration of Internet use among the estimated 20 million mobile phone consumers



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November 2010 – Chapter Ten in Kenya. "The IDEOS is an affordable option, designed to lower barriers to entry and facilitate easy mobile Internet access," said Kevin Tao, the CEO of Huawei Device. "Ownership of the smartphone is one of the key means of getting people into the 'golden age of mobile broadband'," he said. China and India, the world's most populous nations, continue to develop their Internet and mobile phone

infrastructures. Given the size of their populations, improved education levels and the increasing numbers of high-quality graduates, it is inevitable that the innovation coming from these countries will have a major impact on the globe in the next decade.

