

1 billion

GSM customers can't be wrong

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Bridging the Digital Divide

Perhaps the most far-reaching social consequences of GSM telephony have been felt in the low-income economies

UNIVERSAL access to modern telecommunications remains a dream in much of the developing world. For instance, there are more phones in Manhattan than the whole of Africa south of the Sahara. Universal access is, however, not an unrealistic dream - it can be achieved with sufficient political will and the use of appropriate technology.

The deployment of GSM has helped to bridge the digital divide and bring modern telecommunications services to chronically underserved communities in Africa, Asia and Latin America. In the developing world, many countries are effectively starting 'from scratch' when it comes to telecommunications; therefore, very large sums of money are needed. For the world's poorest countries, GSM represents the best chance of bringing the power of telecommunications to their economically disadvantaged or isolated communities.

The potential of GSM cellular communications to connect chronically underserved communities in Africa, Asia and Latin America, was a scenario few had anticipated when mobile uptake first began to soar in Europe and the US, in the mid-1990s. However, the deployment of GSM, with its economies of scale and associated cost reductions, has demonstrated that bridging the digital divide, and bringing modern telecommunication services within reach of the inhabitants, is indeed achievable.

Fixed Line Substitute in Sub-Saharan Africa

In many sub-Saharan countries, mobile cellular services would often act as a substitute for the invariably unreliable fixed (wireline) service. Mobile telephony, being relatively less capital intensive compared to fixed telecommunications was ideally suited to new players entering the market. Increased competition would expand network coverage and make mobile technology an even more attractive substitute to fixed telephony. In this context, GSM has won out and progressively become the technology of choice in Africa.

Fuelling the Mobile Revolution in China

The China story is too fantastic to be ignored. At the end of 1990 there were just 18,319 cellular subscribers in China - or one in every 65 million people. By the end of the decade, numbers were practically doubling year-on-year. China is now the largest mobile phone market (by subscribers) in the world, and currently accounts for the greatest absolute number of new subscriber additions - of any market. Mobile telephony has driven China's combined teledensity to 33

lowest in the world at 0.8 per cent tele density. Even today, India's tele density at nearly eight per cent is below the world average (14%). India now, with its billion plus people, has around 33 million mobile subscribers which is expected to grow to 290 million subscribers by the end of 2008. This makes India's mobile sector one of the fastest growing markets of this decade.

It is expected that India is not just going to emulate the Chinese growth path; it is going to surpass it.

Afghanistan had barely 20,000 working telephone lines for a population of 27 million (0.07%). Further, few of these lines were connected to the outside world.

The aftermath of the war demanded the limited resources and attention of the interim government. It was simply unable to commence development projects, since foreign aid was held up. Simultaneously, the lack of telecommunications was seriously hampering the government's ability to perform basic functions.

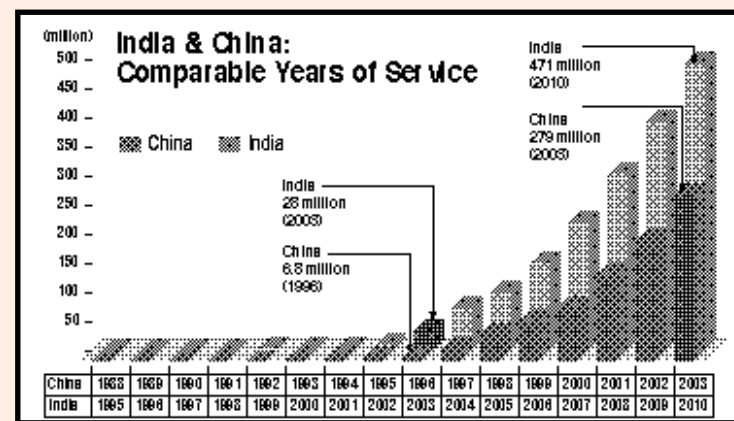
In response to this emergency, the Afghan Wireless Communication Company (AWCC), was set up with the aim of building a GSM mobile telephony network. The speed of network build-out was breathtaking! Within nine weeks, wireless communications services were available to the public. The cellular service presently relies almost exclusively on pre-paid GSM SIMs, since Afghanistan did not have a banking system or reliable postal service.

Afghan Wireless has thus played a significant role in improving the lives of many Afghans, desperate for news and contact with the outside world. This transformation is due in part to the considered selection of GSM as preferred standard for the network infrastructure on account of its USPs of open standards, affordability, roaming, etc.

Instrumental in the Reconstruction of War Ravaged Iraq

The decision to use the GSM system in Iraq was fundamental to reconnecting Iraq internally and to the rest of the world in the shortest possible time. GSM can be deployed and become operational faster than any other mobile technology. Also, the worldwide GSM market ensured that an enormous choice of infrastructure and handsets was readily available at competitive prices. Furthermore, GSM's roaming capabilities ensured seamless roaming for Iraqis travelling abroad as well as inward investors visiting Iraq - a key requirement to reintegrate Iraq into the global community.

Source: GSM White Paper, Brilliant Past, Bright Future, Deutsche Bank, February 18, 2004



per cent in just three years and it comes as no surprise that most of GSM's recent growth has occurred in China. The number of mobile phones in China has just overtaken the number of fixed telephone users (255 million); and it is expected that the number of mobile subscribers will reach 350 million by 2005.

Leading the Mobile March in India

India as the second most populous country on the planet, repre-



sents one of the most exciting growth opportunities for mobile. In 1995, when India opened up the telecom sector to private companies, the country had only eight million phones - all fixed lines and no mobile connections - among the

This is evident from the fact that in the first nine years of service (1988-1996), China managed to notch up only 6.8 million subscribers. India, over the same period (1995-2003), has already crossed 33 million mobile subscribers, of which 22 million are on GSM.



The future growth chart of India will be no less explosive. It is expected that by Year 16 India will reach a mobile subscriber base of at least around 471 million subscribers. China, which has already completed 16 years in 2003, has 279 million subscribers. (See Figure)

The Answer to an Emergency in Afghanistan

As an example of what can be achieved by a GSM network operator, Afghan Wireless must be the most outstanding!

In November 2001, just after the Taliban regime abandoned Kabul,

GSM Around The World

ASIA-PACIFIC

ASIA contains some of the fastest growing GSM markets in the world, with growth rates between 50 per cent to 150 per cent p.a. it is estimated that by 2006, Asia Pacific will represent 45 per cent of the world's mobile subscribers.

China is the largest mobile phone market (by subscribers) in the world, and accounts for the greatest absolute number of new subscriber additions. In fact most of GSM's recent growth has occurred in China. The number of mobile phones has just overtaken the number of fixed telephone users (255m); and it is estimated that mobile subscribers will reach 350 million by 2005.

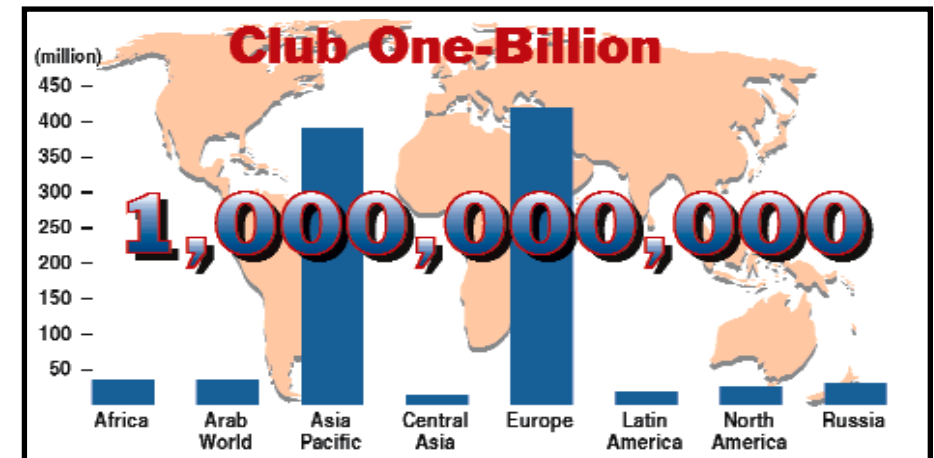
India represents one of the most exciting growth opportunities for mobile. With its billion plus people, India now has around 33 million mobile subscribers and it is expected that this will grow to 290 million subscribers by the end of 2008. This makes India's mobile sector one of the fastest growing markets of this decade.

The growth in the lesser-known countries of Indo-China has been equally dramatic. In Cambodia, mobile communications has experienced hundred-fold growth

growth, the market - in terms of human subscribers at least - has reached saturation. It is now Eastern Europe that has taken up the mobile gauntlet. In central and eastern Europe, the total number of mobile subscribers topped 100 million during early October 2003, and is expected to reach 139 million by 2005. Much of this growth has been driven by Russia, which is the largest, and by far the fastest, growing market in the region, with over 32 million subscribers.

THE AMERICAS

THE success of GSM in the Americas has been outstanding. GSM deployments now blanket the Americas region (66 networks) with every country in Latin America and the Caribbean, with the exception of Haiti, having GSM-based mobile services. This is a remarkable feat, given that only five years ago GSM was operating in only four countries in the region. GSM has also outpaced other wireless technologies in the US and Canada it is estimated that GSM accounted for approximately 59% of the share of net subscriber additions in 2003 in the US. In 2004, this is expected to increase to 83 per cent.



in a decade with mobile subscribers, almost all being based on GSM, now exceeding fixed lines by more than eight to one. Vietnam's mobile growth rate has also been impressive, at over 50 per cent annually. By the beginning of this year there were two million subscribers, which we expect to increase to seven million by 2006, with GSM technology occupying 80 per cent of the market. Thailand is the biggest telecom market in Indo-China where the subscriber base currently totals over 20 million, up from three million at the beginning of 2001.

EUROPE

UNTIL recently, Europe as a region had the highest total number of mobile subscribers in the world, with almost all being based on GSM. While Western Europe previously enjoyed remarkable subscriber

AFRICA

AFRICA has a total of 34.3 million subscribers. While this may seem puny relative to other markets, Africa is forecasted to grow at twice (60%) the forecasted annual world growth rate. GSM has become the technology of choice in Africa, with 94 of the 102 networks on air using GSM, and represents 96 per cent of total mobile subscribers. Improbable though it may seem in an area where access to low-tech necessities such as clean water and basic health care remain an urgent priority, mobile technology is proving to be one of the most successful drivers of economic development ever deployed. Africa became the first region where mobile phones outnumbered fixed lines in 2001.

Source: GSM White Paper, Brilliant Past, Bright Future, Deutsche Bank, February 18, 2004

You know you are a Mobile Junkie when:



- You are sitting next to a fixed phone but continue to use your mobile phone
- Your mobile is never switched off
- You compulsively check your phone

- for missed calls / messages every few minutes
- Your mobile is a permanent attachment to your left / right hand
- Your mobile is now your phone book, watch, alarm, calendar, calculator camera and computer
- You SMS all jokes to 50 of your closest friends
- You sleep with your phone next to your pillow
- You have a compulsive need to access and be accessible at all times
- You get highly stressed out if you run out of battery and you cannot recharge it
- You are always eyeing the next upgrade even if you have a perfectly serviceable phone
- Your self-image is defined by the phone you carry
- Your language and grammar has



- You like to change your ringtone every three days



- been permanently ruined because of SMS
- You now use SMS to keep in touch with all your friends and relatives abroad
- Your conversation about your mobile service (GSM, WAP, GPRS, EDGE, SIM, PIN, MAP, IMEI, T9) sounds like an alphabet soup to a non-mobile user.
- You are very surprised if somebody does not have a mobile number



We've got the whole world talking

