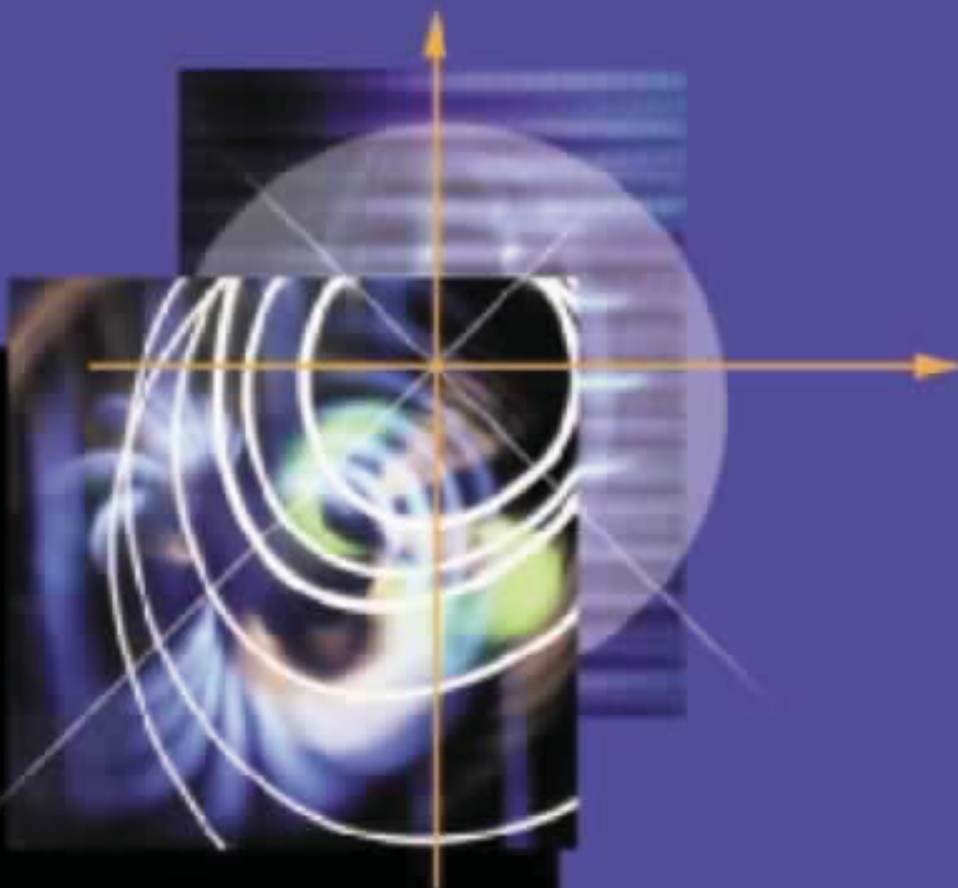




Global Mobile Dialogue™

GSA Newsletter : Issue Eleven : March 2005

Mobile news highlights for the decision-maker



3G Subscriber Growth Takes Off

The number of WCDMA subscribers globally is rapidly approaching 20 million, and has doubled in the last 6 months. NTT DoCoMo announced that the number of subscribers to its WCDMA-enabled FOMA service passed 10 million on February 21, 2005, less than three and a half years since the service was launched. However, it is in Europe that 3G growth has been most pronounced, with many WCDMA networks entering commercial service over the past few months. According to GSA, 66 operators are today offering commercial services in 31 countries. A further 9 networks are at the pre-commercial stage. This means that the majority of the 134 licensed WCDMA operators have now brought 3G services to market, or are very near to doing so. It also means that WCDMA is the world's most successful 3G technology.

3G services are in strong demand by enterprises and the mass market. Subscriber growth is now driven by a wider range of competitive service offerings, a wider variety and improved availability of terminals in the market, and maturing technology.

GSA's "3G/WCDMA model variety and availability" survey completed on February 25, 2005 identified 139 WCDMA devices, which means that the number of new model announcements tripled in the past 8 months alone. Several phones and PC cards made their debut at the 3GSM World Congress, with more suppliers coming into the market. GSA confirms that at least 25 suppliers have announced WCDMA user devices.

Several operators are deploying combined WCDMA-EDGE networks for 3G services delivery. EDGE and WCDMA are complementary technologies, and ensure the best user experience of 3G services throughout an operator's network, shortening time to market, and making the most efficient use of CAPEX (capital expenditure) and other key resources, while reducing (OPEX) operational expenditure. The list of 36 WCDMA-EDGE operators are included in the panel opposite:

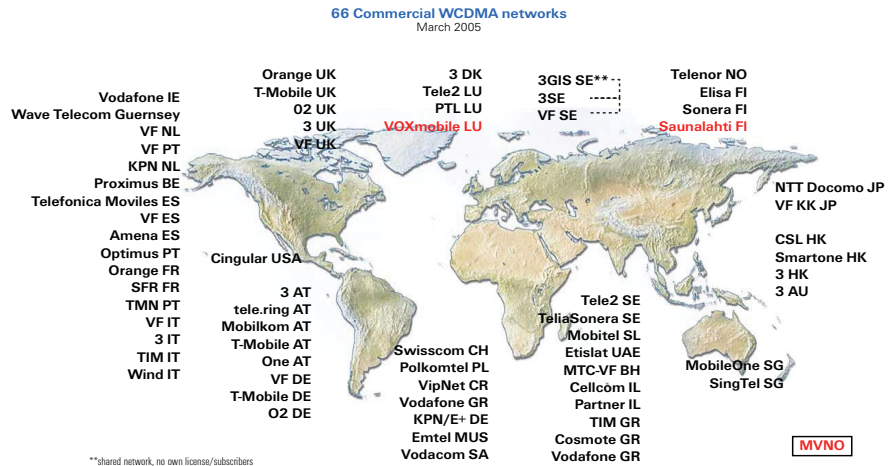


Figure 1: Commercial WCDMA Operators - March 9, 2005

Source: GSA

(The full list of commercial and pre-commercial WCDMA networks is contained in the WCDMA Fact Sheet www.gsacom.com)

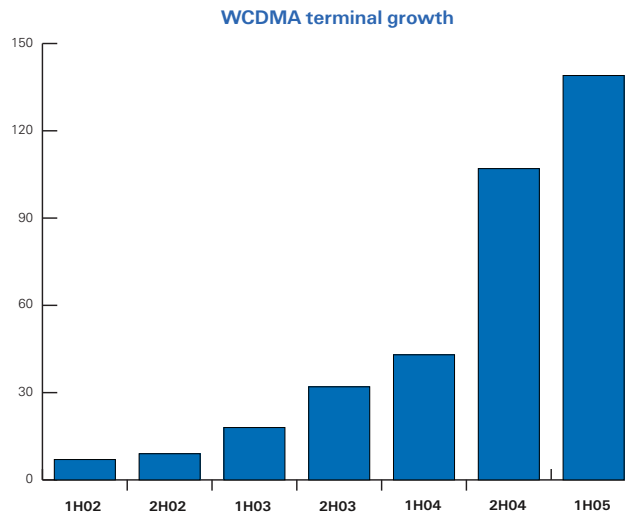


Figure 2: 139 WCDMA devices in the market - February 25, 2005

Source: GSA

- | | | |
|-------------------------------------|-----------------------------------|--------------------------|
| Ålands Mobiltelefon, Finland | MTC Vodafone, Bahrain | T-Mobile, Czech Republic |
| Batelco, Bahrain | MTN, South Africa | T-Mobile, Hungary |
| Cellcom, Israel | Netcom, Norway | T-Mobile, USA |
| Cingular Wireless, USA | Orange, France | Telfort, Netherlands |
| CSL, Hong Kong | Orange, Romania | TeliaSonera, Denmark |
| Dialog GSM, Sri Lanka | Orange Slovensko, Slovak Republic | TeliaSonera, Finland |
| Elisa, Finland | Oskar Mobile, Czech Republic | TeliaSonera, Sweden |
| EMT, Estonia | Pannon GSM, Hungary | TIM Hellas, Greece |
| Eurotel Praha, Czech Republic | Polkomtel, Poland | TIM, Italy |
| Eurotel Bratislava, Slovak Republic | Rogers Wireless - Fido, Canada | VIP Net, Croatia |
| GPTC, Libya | Si. Mobil - Vodafone, Slovenia | |
| Maxis, Malaysia | Swisscom, Switzerland | |
| Mobilkom Austria | Telenor, Norway | |

The globalization of EDGE has entered the mainstream. According to GSA research to March 4, 2005 a total of 131 operators in 76 countries are deploying the EDGE upgrade on their GSM/GPRS networks. Today 63 commercial networks are delivering enhanced data services in 41 countries in all continents.

EDGE subscriptions have rapidly increased, for the same reasons as WCDMA. A total of 90 EDGE-enabled devices are announced, which has tripled over the past 6 months. EDGE is a standard feature in most new data-enabled phones, with several new models launched at the 3GSM World Congress in February 2005. A similar story of more suppliers entering the market can be seen.

WCDMA and EDGE Evolution

High Speed Downlink Packet Access – HSDPA delivers a similar boost for WCDMA as EDGE does for GPRS. HSDPA boosts the air interface capacity by 2 times and delivers a 5-fold increase in data speeds in the downlink direction. HSDPA also shortens round-trip time between network and terminals and reduces variance in downlink transmission delay. Commercial release of HSDPA is anticipated from end 2005. All WCDMA operators are expected to deploy HSDPA. The upgrade path from WCDMA to HSDPA is easy, as base stations only require a software upgrade. Today's GSM scale economies will be available with HSDPA in the coming years. Several manufacturers demonstrated HSDPA solutions at 3GSM World Congress.

EDGE Evolution

The GSM community believes that further GSM/EDGE evolution is vital to support the continuity of operations and business performance of single (GSM/EDGE) and integrated (GSM/EDGE/WCDMA) networks. EDGE Evolution is envisaged to bring an average 2-3 times increase in data speeds compared to EDGE data rates today, higher voice and data capacity, and improved spectral efficiency. The leading GSM/3G suppliers Ericsson, Nokia and Siemens are fully committed to bringing the benefits of EDGE Evolution to the marketplace. The operators are also interested in EDGE Evolution as a cost effective way of increasing datarates to their customers, and to maximise network performance, services' coverage and customer opportunities.

76 Countries with EDGE deployments

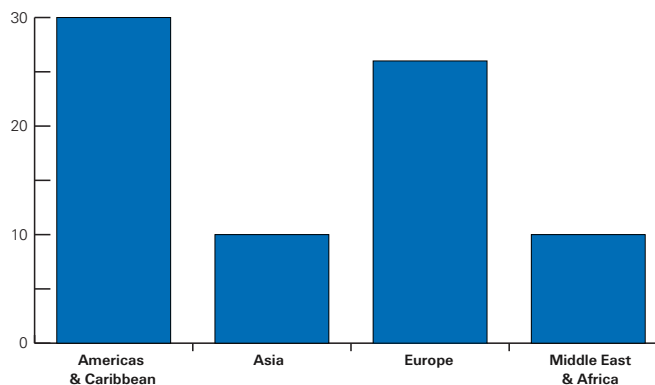


Figure 3: 76 countries with EDGE Deployments - March 4, 2005

Source: GSA

90 EDGE terminal launches

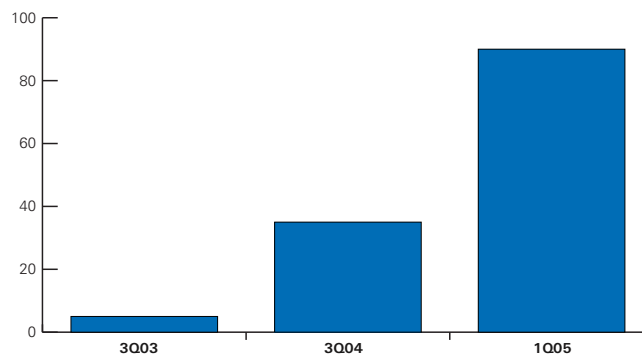


Figure 4: 90 EDGE terminal launches - March 4, 2005

Source: GSA

GSA launched an initiative in March 2005, beginning with a press release on March 10th, to raise industry awareness of the benefits, and to secure standardization by 3GPP of the key enablers in future releases of the standards, such that productization can be expected in the 2007 timeframe.

GSA Announces Next GSM/EDGE Steps to Enhance Service Continuity with EDGE Evolution

March 10th, 2005: GSA - Global mobile Suppliers Association, announces its support for the new 3GPP study items on EDGE Evolution. EDGE Evolution is envisaged to bring on average 2-3 fold data speeds compared to EDGE rates today, higher voice and data capacity and improved spectral efficiency.

With deployment of WCDMA accelerating globally, 3G services are in strong demand by enterprises and the mass market. Many operators are deploying a combined WCDMA/EDGE network strategy for delivery of 3G services. EDGE Evolution is a natural complement to HSPA (High Speed Packet Access) which will enhance WCDMA data rates and capacity, ensuring the best user experience of advanced wireless mobile broadband services.

Alan Hadden, President, GSA, explains: "EDGE Evolution is an important step for single mode GSM and multimode GSM/WCDMA operators to support their current business and to the service continuity in GSM networks. EDGE Evolution is envisaged to only have a low impact on the existing EDGE capable GSM networks, however, it will lower service delivery costs considerably and make new services and higher data revenues possible. When it comes to WCDMA/HSPA subscribers, they can roam outside WCDMA/HSPA coverage and still use the services they are accustomed to."

Leading GSM/3G suppliers Ericsson, Nokia and Siemens are fully committed to bringing the benefits of EDGE Evolution to the marketplace. The first standardization release, 3GPP release 7, is envisaged to be ready in 2006.

Ulf Ewaldsson, VP GSM Product Management at Ericsson, sees the further evolution of EDGE as yet another step into the direction of fully 2G/3G integration: "With the enhancements in WCDMA towards high speed packet access, the EDGE evolution provides the necessary service seamlessness as it is expected by the end users."

Giuseppe Donagemma, Vice President, Radio Networks, Nokia, supports Hadden's view. "Nokia supports EDGE Evolution work as we see it being beneficial to the mobile user experience as well as offering a possibility for the operators to increase their revenues, in particular with new real time services that require higher bitrates, lower latency and higher capacity. EDGE Evolution is complemented by the GSM voice enhancements, delivered to end users and operators with the same easy GSM/EDGE upgrades. We expect the WCDMA evolution to HSPA to be one of the key drivers for the EDGE Evolution."

Peter Giese, Head of Siemens Product Line Management for GSM/EDGE Radio Access Networks, said: "Siemens remains fully committed to providing a long term evolution of their GSM/EDGE networks that allows operators to optimize the revenue potential over the next decade and at the same time helping to protect the investment made."

Leading GSM/3G mobile network operators are also interested in EDGE Evolution. "TIM is pleased to see that both EDGE and WCDMA radio technologies are evolving further, supporting very well the TIM network strategy of having both technologies in parallel use to maximize network performance, services' coverage and customer opportunities" said Luca Luciani, TIM (Telecom Italia Mobile) Executive Vice President International Operation.

Tommy Ljungren, Technical Director of TeliaSonera Sweden's Mobile Networks, confirms the importance of further EDGE evolution, adding that "EDGE is a very cost effective way to quickly increase the data rates to TeliaSonera's customer base. EDGE is viewed as a complement to our WCDMA and WLAN networks. For TeliaSonera EDGE will play an important role in our realisation of "Always Best Connected" where our current and future customers get a seamless service experience through the most suitable access technology available in each location."

Kris Rinne, Chief Technology Officer, Cingular Wireless added: "Cingular is always interested in technology upgrades that enhance the operation of our network and the wireless experience of our customers. As one of the first carriers to offer commercial EDGE service, we are glad to see the continued support and evolution of GSM/EDGE from carriers and vendors throughout the world."

World GSM News

GSM Reaches 1.3 billion users end February 2005

GSM is confirmed globally as the fastest growing technology, with 276.5 million new subscribers added in 2004. CDMA gained 49 million new subscribers in the same period. GSM added 79.5 million subscribers during Q4 2004 bringing a year-end total of 1,268 million subscribers globally. GSM grew at the rate of 26 million subscribers each month during Q4 2004 and accounts for 75% of the world's cellular market and over 80% of current net additions. There are 626 GSM networks commercially operational in 199 countries/territories.

The number of GSM subscribers more than doubled in Latin and Central America during 2004.

GSM continues to lead APAC mobile subscriber growth, adding over 98 million new subscribers in 2004. China remains the largest market with 288 million GSM subscribers by the end of 2004. Rapid growth in India pushed the number of GSM subscribers to 37.6 million and 80% share of new connections during 2004.

GSM gained the highest share of net additions in the USA of 55% of all technologies during 2004. At the end of the year the GSM total stood at 54.9 million, of which 50.78 million are in the USA. In Europe the total number of GSM subscribers reached 559 million by end 2004. Russia climbed to 67 million. Growth continued in Eastern Europe – up 57.8 million, with Western Europe adding 31 million GSM subscribers in 2004.

The GSM Association announced at the 3GSM World Congress the results of a tender for the supply of handsets for the "Ultra-Low Cost" segment for the emerging markets. The operators participating in this first procurement round were AIS Telecom, Bharti Televentures, Globe Telecom, Maxis Mobile, Orascom, SingTel Mobile, Smart Communications, Telenor Mobile and Turkcell. The initial volume target for the first six months, once shipments begin, is 6 million.

World cellular subscribers by technology

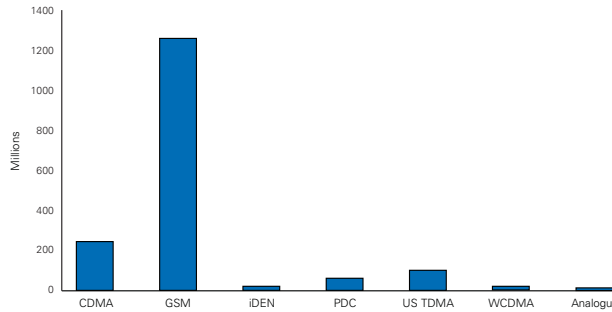


Figure 5: World cellular subscribers by technology - 31 December, 2004

Source: Informa Telecoms and Media

Mobile Subscriber Growth in Latin and Central America

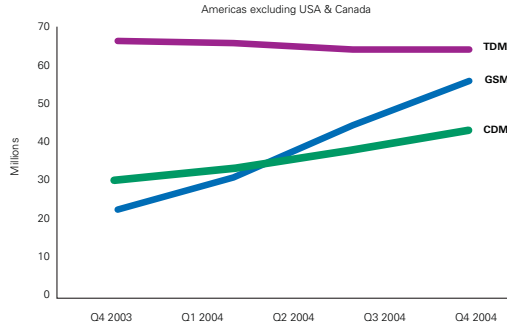


Figure 6: Mobile subscriber growth in Latin and Central America

Source: Informa Telecoms and Media

Mobile Subscribers Growth in China

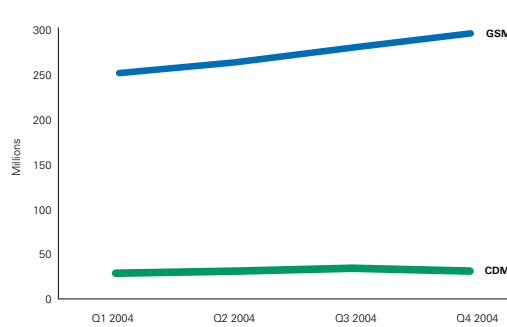


Figure 7: Mobile subscriber growth in China

Source: Informa Telecoms and Media

Mobile Subscribers Growth in India

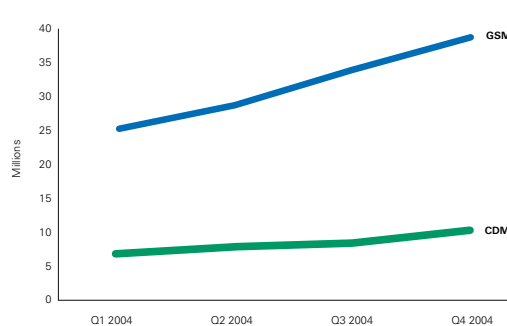


Figure 8: Mobile subscriber growth in India

Source: Informa Telecoms and Media

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