Portio Research
Mobile Factbook 2008

This pocket book provides a brief snapshot of the worldwide mobile industry at the start of 2008, written and produced free for you by **Portio Research Ltd** – visit **www.portioresearch.com** for further information.

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Worldwide Mobile Market

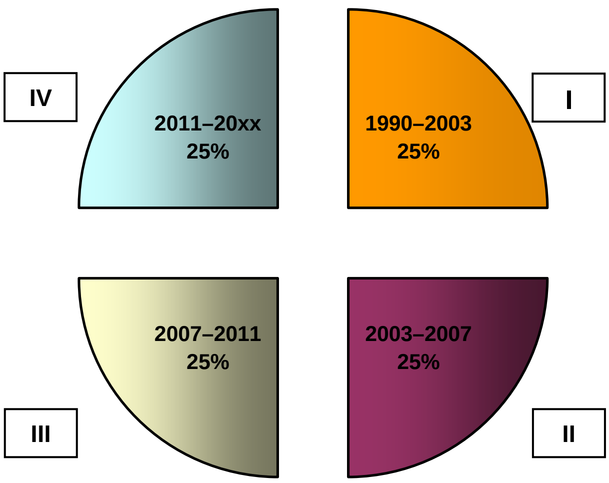
Subscriber Base

Overview

The worldwide mobile subscriber base has witnessed significant growth in recent years, crossing the 50 percent penetration mark in early 2008. It took approximately 13 years, from 1990 to 2003, for mobile services to reach the first quarter, or a 25 percent penetration level, of the world's population; these early subscribers were predominantly in the wealthy regions of Europe, Southeast Asia and North America. The next quartile of mobile penetration has been achieved at a comparatively meteoric pace in just four years, from 2003 to 2007. This rapid growth in the worldwide subscriber base has come from the mass markets of Eastern Europe, Asia, Latin America and the Middle East. The figure below shows the historical and projected evolution of the worldwide mobile subscriber base.

As of end-2007, Asia Pacific led the worldwide subscriber base with approximately 1.3 billion subscribers, followed by Northern and Western Europe with 0.4 billion subscribers.

Figure 1: Evolution of Mobile Subscriber Base—Worldwide



Source: Portio Research Ltd.

As of end-2007, Asia Pacific led the worldwide subscriber base with approximately 1.3 billion subscribers, followed by Northern and Western Europe with 0.4 billion subscribers. The table below shows the subscriber base by region from 2004 to 2007.

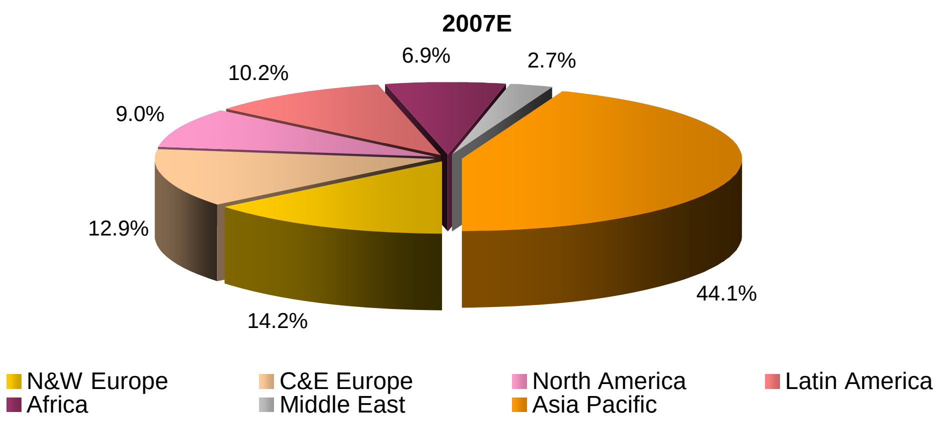
Table 1: Regional Mobile Subscribers (In Million, 2004–2007E)

Year	N&W Europe	C&E Europe	North America	Latin America	Africa	Middle East	Asia Pacific	Total
2004	358.7	198.6	199.8	176.2	79.7	28.7	702.8	**1,744.5**
2005	391.6	295.3	224.8	225.9	129.8	44.8	857.5	**2,169.7**
2006	425.2	365.5	251.6	273.0	168.7	64.5	1,101.7	**2,650.2**
2007E	437.9	397.4	277.5	315.0	211.1	84.4	1,357.5	**3,080.8**

Source: Portio Research Ltd.

The contribution of different regions to the worldwide subscriber base as of end-2007 is shown in figure 2 below.

Figure 2: Worldwide Mobile Subscriber Base—Regional Break-out (2007E)



Source: Portio Research Ltd.

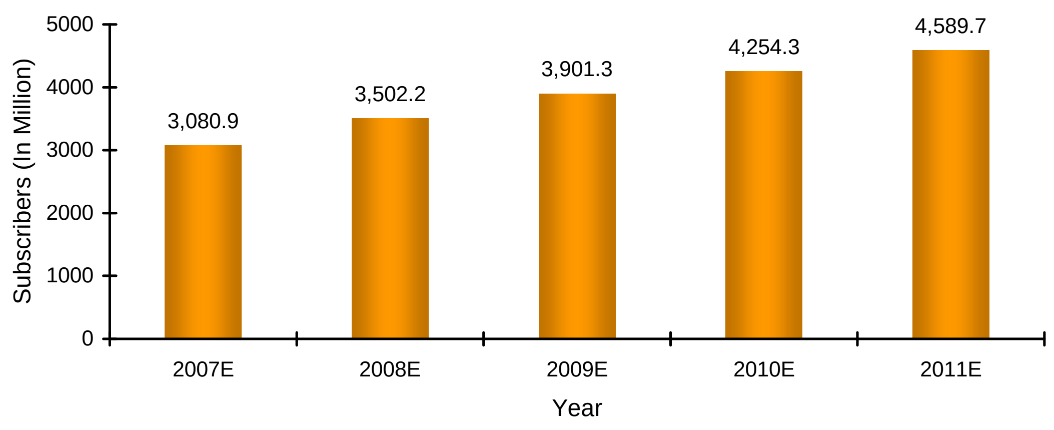
E – Estimated

The Future

During the period 2007 to 2011, the worldwide subscriber base is expected to increase at a compound annual growth rate (CAGR) of 10.5 percent and reach 4.6 billion by end-2011. The figure below shows the growth of the mobile subscriber base from 2007 to 2011.

In the period end-2007 to end-2011, the worldwide subscriber base will increase by around 1.5 billion. Approximately 65 percent of these additions are anticipated to come from the Asia Pacific region.

Figure 3: Worldwide Mobile Subscribers (In Million, 2007E–2011E)

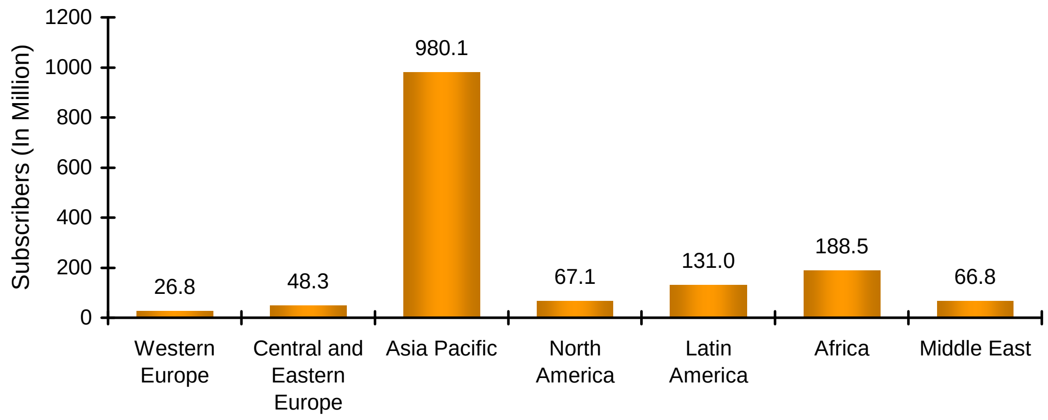


Source: Portio Research Ltd.

E – Estimated

In the period end-2007 to end-2011, the worldwide subscriber base will increase by around 1.5 billion. Approximately 65 percent of these additions are anticipated to come from the Asia Pacific region. This will be followed by the African region with a share of around 12.5 percent in these net additions.

Figure 4: Geographical Distribution—Net Subscriber Additions (2007E–2011E)



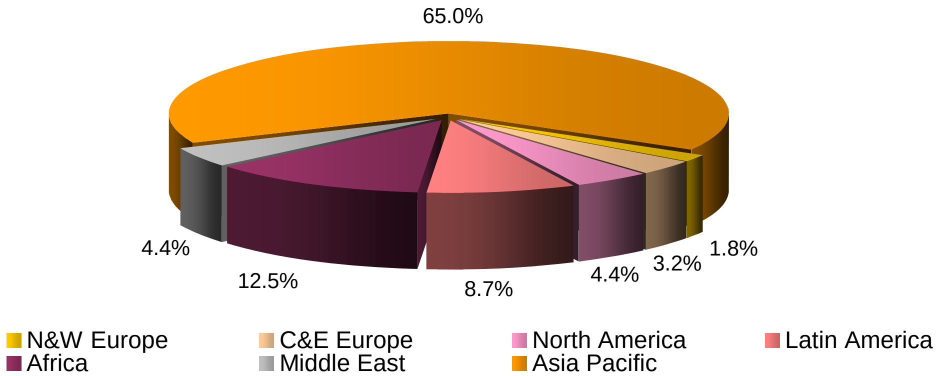
Source: Portio Research Ltd.

E – Estimated

Figure 5 shows the contribution of the different geographies in the anticipated additions during the period end-2007 to end-2011.

China is expected to contribute approximately 439.1 million subscribers to the estimated 1.5 billion worldwide subscriber additions from end-2007 to end-2011.

Figure 5: Regional Break-out of Net Additions (2007E–2011E)



Source: Portio Research Ltd.

E – Estimated

Table 2 shows the top 10 markets that are expected to contribute the most to the estimated 1.5 billion worldwide subscriber additions from end-2007 to end-2011.

Table 2: Top 10 Countries—Net Subscriber Additions (2007–2011)

S.No	Country	Net Subscriber Additions (In Million)
1	China	439.1
2	India	240.7
3	US	60.3
4	Pakistan	53.3
5	Nigeria	47.6
6	Brazil	45.7
7	Indonesia	42.9
8	Bangladesh	39.2
9	Mexico	29.4
10	Iran	24.8

Source: Portio Research Ltd.

For an in-depth analysis of these top 10 markets, please see our market study '**The Next Billion: Strategies for driving growth and making profits in low-ARPU mobile markets**'.

Revenue

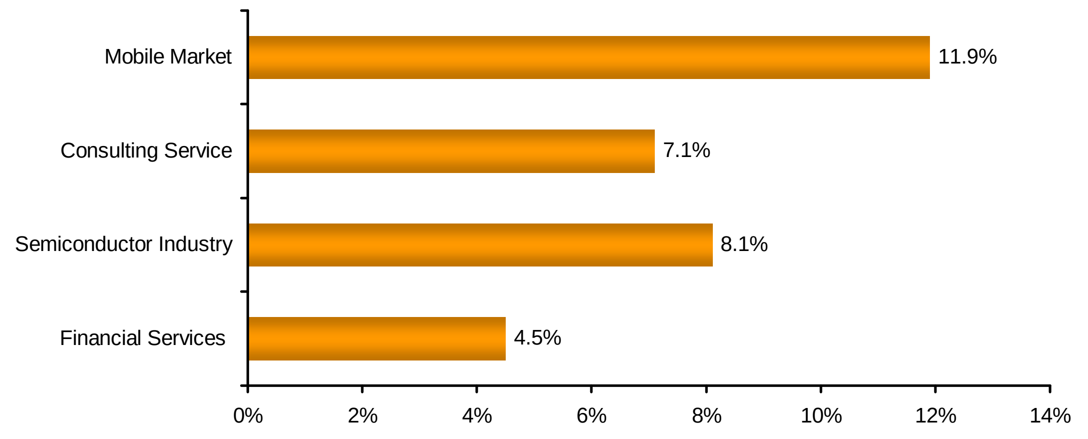
Overview

In terms of revenues, the worldwide mobile market stood at USD 803.7 billion at end-2007. Total revenue witnessed growth of around 12 percent during the period end-2006 to end-2007. Furthermore, the industry also outperformed other sectors such as consulting, the semiconductor industry and financial services in terms of revenue growth.

The Mobile industry outperformed other sectors such as consulting, the semiconductor industry and financial services in terms of revenue growth.

Figure 6 shows a comparison of different sectors in terms of the estimated year-on-year growth rate for fiscal year 2007.

Figure 6: Comparison of Mobile Market with Other Sectors—Y-o-Y Growth Rate (2007E)

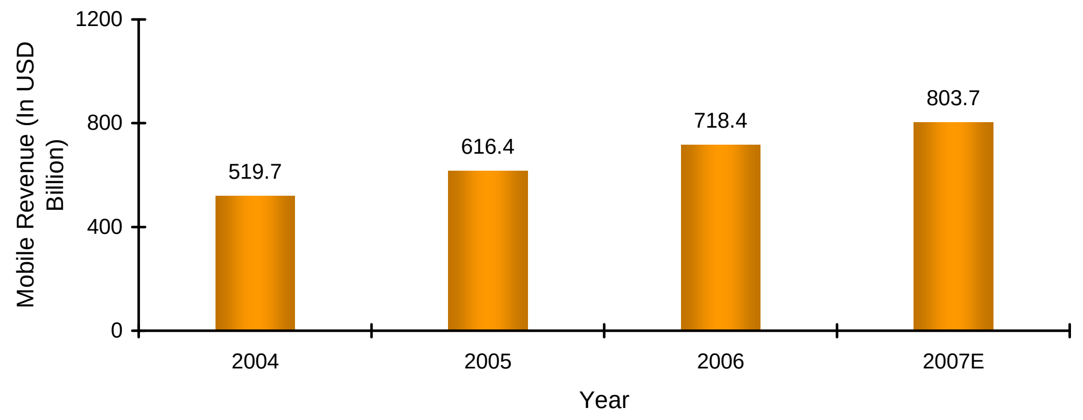


Source: Portio Research Ltd.

E – Estimated

The figure below shows the mobile revenue for the period 2004 to 2007.

Figure 7: Worldwide Mobile Revenue (In USD Billion, 2004–2007E)

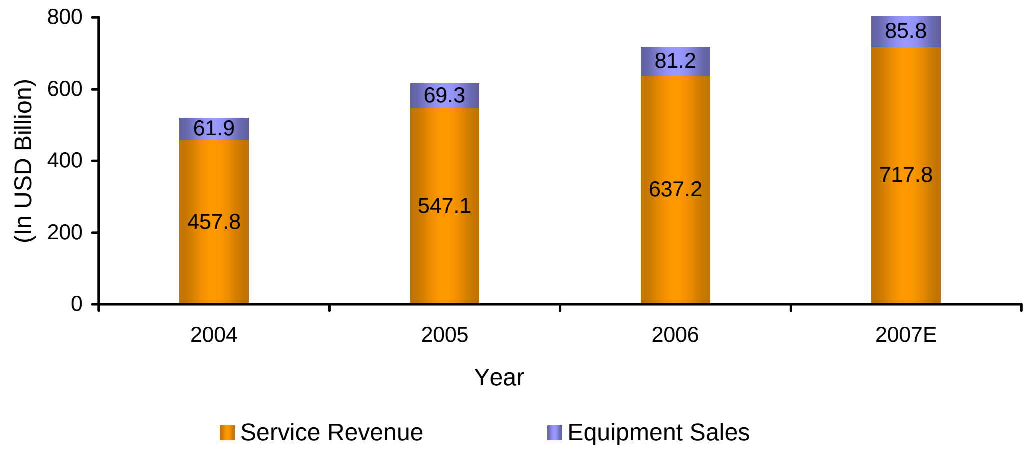


Source: Portio Research Ltd.

E – Estimated

The revenue generated by operators worldwide has two components—service revenue and equipment sales revenue, which is revenue from selling handsets and accessories. Figure 8 shows the worldwide mobile service revenue and equipment sales revenue for the period 2004 to 2007.

Figure 8: Worldwide Service Revenue and Equipment Sales (In USD Billion, 2004–2007E)



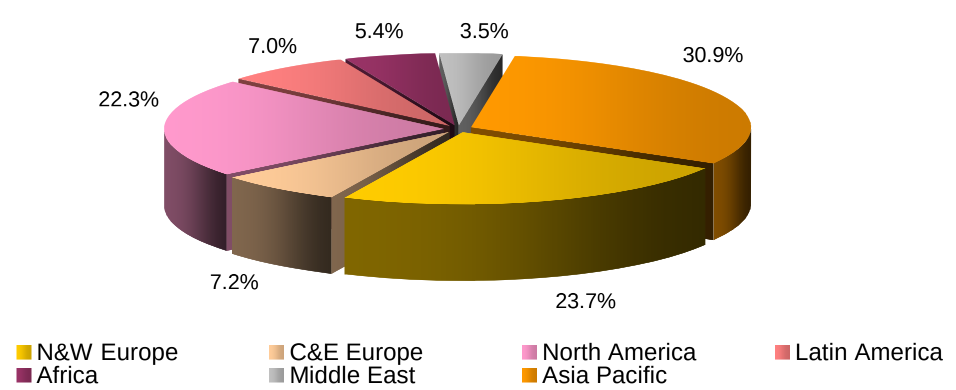
Source: Portio Research Ltd.

E – Estimated

The worldwide mobile service revenue increased at a CAGR 16.2 percent from 2004 to 2007. Figure 9 shows contributions from various regions to the worldwide service revenue for the year 2007.

The worldwide mobile service revenue increased at a CAGR 16.2 percent from 2004 to 2007. Asia-Pacific was the largest contributor to the worldwide mobile services revenue.

Figure 9: Worldwide Mobile Service Revenue—Regional Break-out (2007E)



Source: Portio Research Ltd.

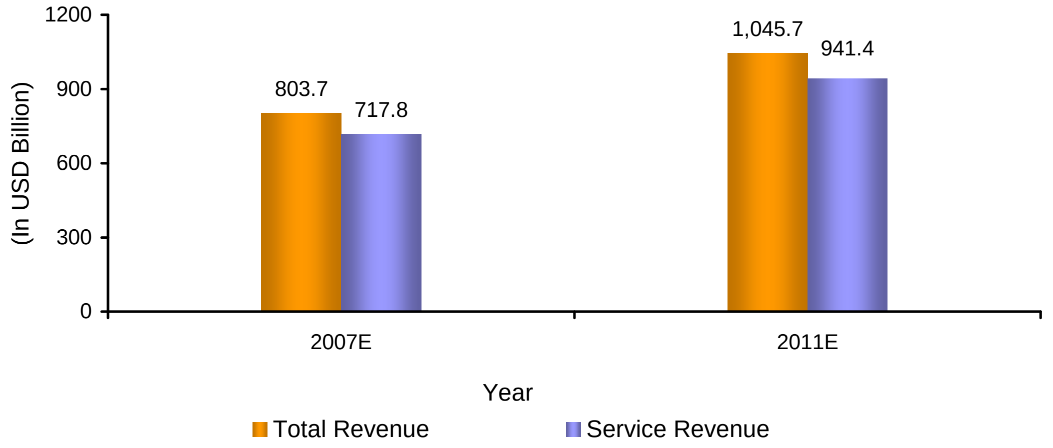
E – Estimated

The Future

Total mobile revenue is expected to cross the USD 1 trillion-mark by end-2011, registering a CAGR of approximately 7 percent during the period end-2007 to end-2011. The figure below shows the growth of total mobile revenue and service revenue during the period end-2007 to end-2011.

Total mobile revenue is expected to cross the USD 1 trillion-mark by end-2011, registering a CAGR of approximately 7 percent during the period end-2007 to end-2011.

Figure 10: Total Mobile Revenue and Service Revenue (In USD Billion, 2007E & 2011E)



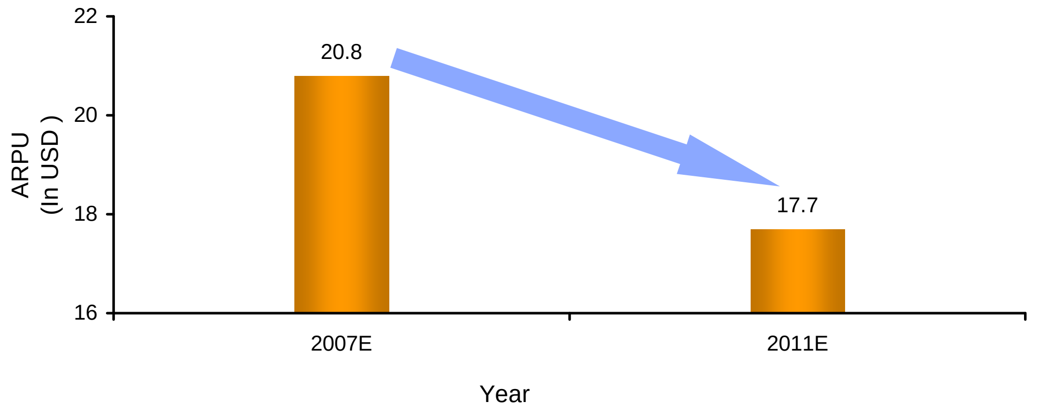
Source: Portio Research Ltd.

E – Estimated

For more details on mobile revenue, such as growth, break-out by region, etc., please see our market study **'Slicing up the Mobile Services Revenue Pie'**.

The worldwide average revenue per user (ARPU) per month from mobile services was around USD 21 in 2007. As discussed above, most of the growth is anticipated from markets in the regions of Asia Pacific, Africa and Latin America. Since the average per capita income in these markets is less than the per capita income in developed markets, worldwide ARPU is expected to decline in the future. As per our estimates, overall ARPU will reach USD 18 by end-2011. This is shown in the figure below.

Figure 11: ARPU per Month—Worldwide (In USD, 2007E & 2011E)



Source: Portio Research Ltd.

E – Estimated

The ARPU variation expected in the top 10 growth markets discussed above would be as follows:

The worldwide average revenue per user (ARPU) per month from mobile services is expected to decline from approximately USD 20.8 in 2007 to approximately USD 17.7 by end-2011.

- ARPU per month is expected to decline in most of the growth markets. For a detailed analysis of ARPU variation in the top 10 growth markets, please read our market study '**The Next Billion: Strategies for driving growth and making profits in low-ARPU mobile markets**'.

- Of the top 10 markets, nine have been identified as emerging mobile markets with significant potential in the next five years. However, the only wealthy nation among the top 10—the US—will not follow the majority. For a study on the current scenario and opportunities in the US mobile market, please read our report '**Mobile and Wireless in the US: Opportunities and Profits 2008–2012**'.

Voice and Data Services

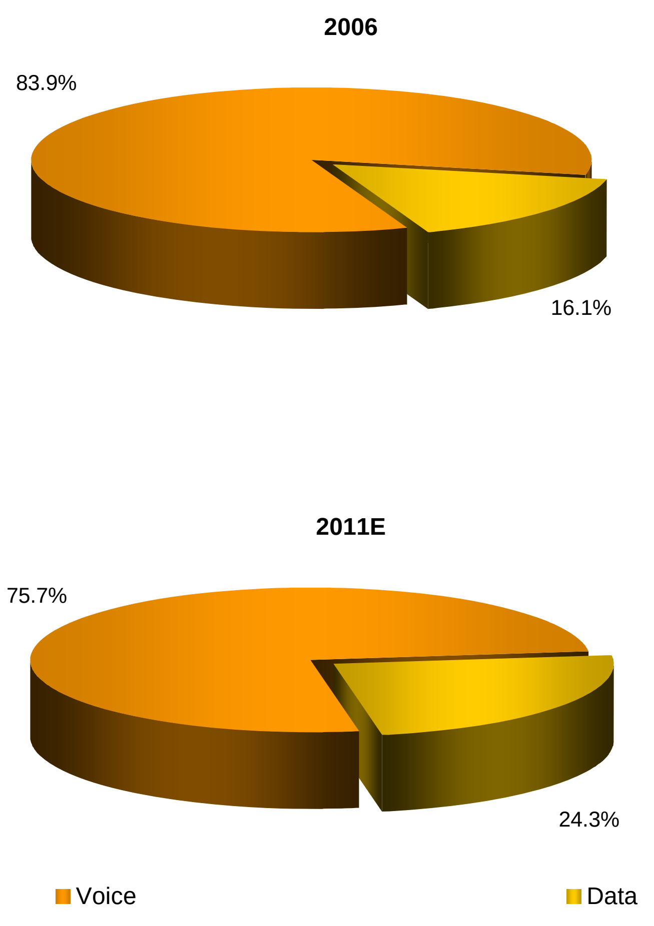
Overview

The revenue generated from mobile services consists of voice and data revenue. Initially, mobile services meant mostly voice services. Over time, people have started using their handsets for other purposes, such as sending SMS, playing games, listening to music and so on.

Operators worldwide are focussing on compensating declining voice ARPU levels by increasing the adoption of data services among users.

As shown in Figure 12, the share of data services in the mobile service revenue pie stood at 16.1 percent in 2006, with the remainder 83.9 percent being accounted for by voice services. However, the trend is changing and data is now contributing more to the mobile service revenue pie. Operators worldwide are focussing on compensating declining voice ARPU levels by increasing the adoption of data services among users. Data is expected to contribute approximately 24.3 percent to total worldwide mobile service revenues in 2011.

Figure 12: Worldwide Mobile Service Revenue—Voice-Data Split (2006 and 2011E)



Source: Portio Research Ltd.

E – Estimated

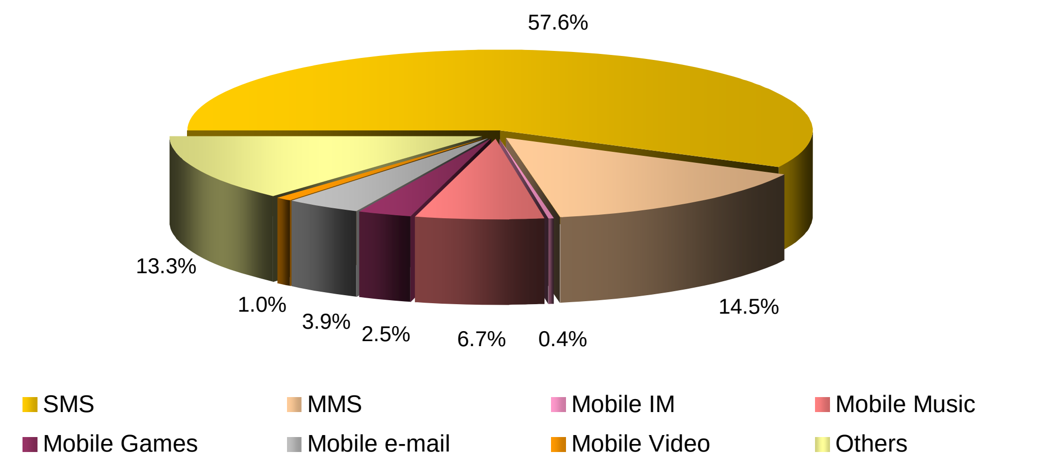
For more details on the changing contributions of voice and data revenues, please see our market study **‘Slicing up the Mobile Services Revenue Pie’**.

With voice ARPU levels declining globally, data services are increasingly becoming an important component of operators' revenue models. Until recently, SMS formed the mainstay of non-voice service revenues in most markets, with Japan being the exception. Of late, the increasing uptake of advanced data services such as mobile gaming, music downloads and mobile TV in mature markets has led to higher data ARPU levels for operators in these markets. At the same time, revenue from basic data services such as SMS, MMS, ringback tones and information services is increasingly becoming an important component for operators in emerging markets.

In 2006, the largest contribution to total worldwide data services revenue came from SMS, which generated approximately 58 percent of all revenues. The next biggest contributor to total non-voice revenue was MMS. Figure 13 shows the share of various data services in the total worldwide mobile data services revenue pie in 2006.

Of late, the increasing uptake of advanced data services such as mobile gaming, music downloads and mobile TV in mature markets has led to higher data ARPU levels for operators in these markets.

Figure 13: Worldwide Data Services Revenue—Break-out (2006)



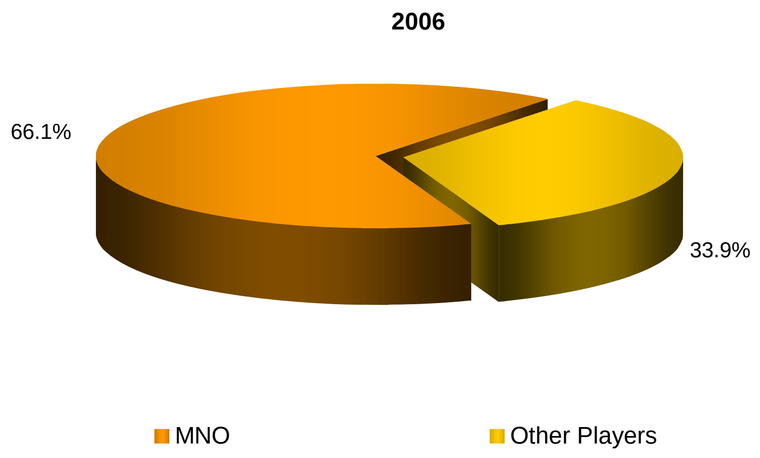
Source: Portio Research Ltd.

For the current and forecasted revenue (until 2011) from data services such as SMS, MMS, mobile e-mail, IM, music, games and video, please see our in-depth report **'Slicing up the Mobile Services Revenue Pie'**.

The revenue generated from data services is split among players in the value chain—mobile network operator, content owner, aggregator, etc. At present, the maximum share of the data revenue goes to the mobile network operator, though the share of other players in the value chain is rising. The figure below shows the data services revenue split between operators and other players in the value chain in 2006.

At present, the maximum share of the data revenue goes to the mobile network operator, though the share of other players in the value chain is rising.

Figure 14: Worldwide Data Revenue Sharing Arrangement (2006)



Source: Portio Research Ltd.

For detailed value chain analysis (revenue split—current and forecast) of data services such as SMS, MMS, mobile e-mail, IM, music, games and video, please see our market study **‘Slicing up the Mobile Services Revenue Pie’**.

Mobile Handset Industry

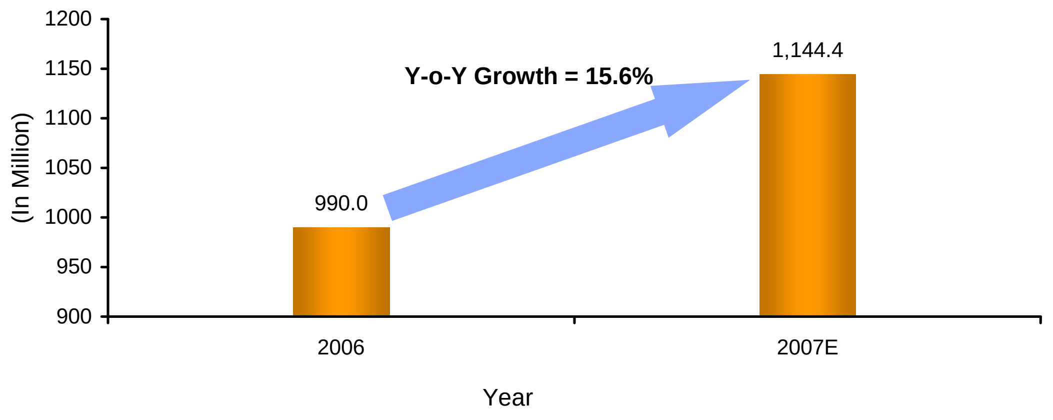
Overview of Industry

In recent years, most of the growth in mobile services has come from developed countries, but this scenario has changed more recently and the maximum growth is now expected to come from emerging markets, particularly from the low-income segment. This new market segment has the potential to add more than 1 billion subscribers in the next few years. Though the opportunity is huge, the subscriber base cannot grow unless low-cost handsets are introduced in these emerging markets. To counter this challenge, mobile vendors, chip manufacturers and service providers are identifying ways and means to reduce the cost of handset ownership for this segment. As a result, although handset shipment numbers are increasing, the average selling price of handsets is declining.

The worldwide mobile handset market experienced tremendous growth, vis-à-vis number of shipments, during 2007. With shipments of approximately 1,144 million handsets during 2007, the revenue generated was estimated to be worth USD 166.1 billion in 2007, a 14.5 percent increase over 2006 when the number of handsets sold worldwide exceeded 990 million.
The figure below shows handset shipments for the years 2006 and 2007.

The worldwide mobile handset market experienced tremendous growth, vis-à-vis number of shipments, during 2007. Approximately 1,144 million handsets were shipped during 2007 and the revenue generated was estimated to be worth USD 166.1 billion in 2007.

Figure 15: Worldwide Handset Shipments (In Million, 2006 & 2007E)

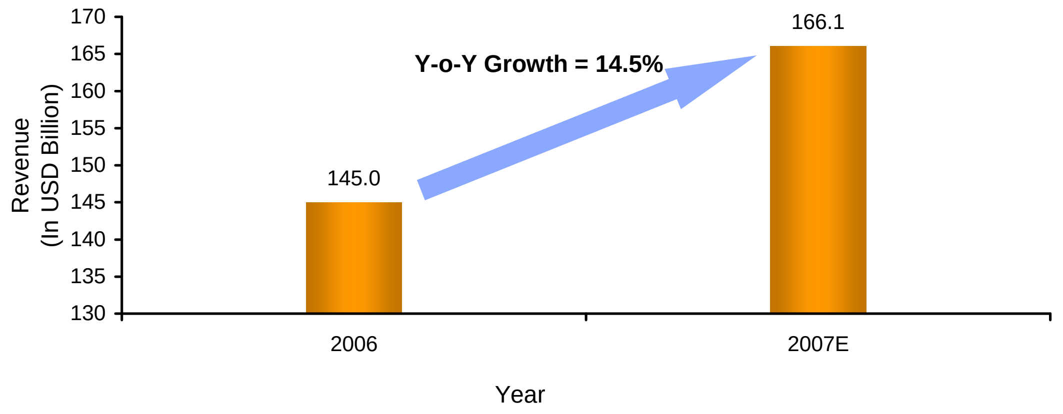


Source: Portio Research Ltd.

E – Estimated

The worldwide handset revenues for the years 2006 and 2007 are shown in the figure below.

Figure 16: Worldwide Handset Revenues (In USD Billion, 2006–2007E)



Source: Portio Research Ltd.

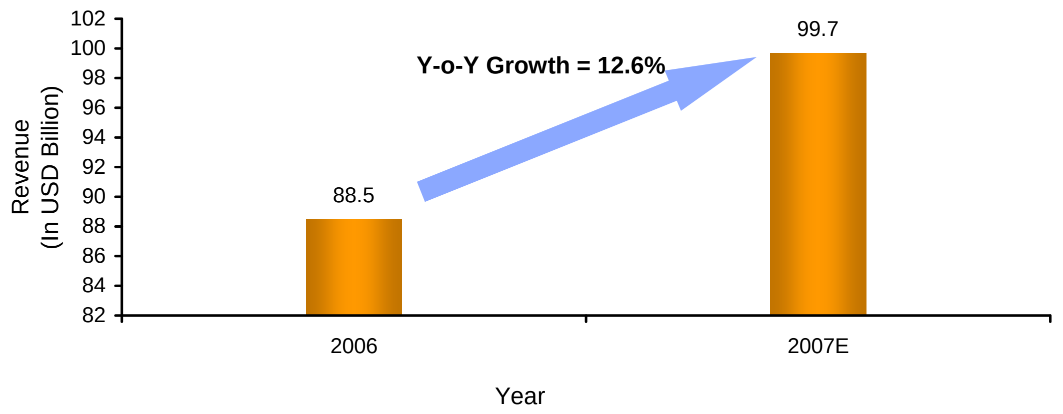
E – Estimated

Handset vendors worldwide sell handsets either directly to mobile network operators or to end-users through sales networks in retail stores and third-party resellers. Operators account for a major share of the sales. In 2006, the revenue generated from sales through mobile operators was approximately 61 percent of the total revenue generated from sales worldwide. The number declined to 60 percent in the year 2007.

Figure 17 shows the worldwide revenue generated for handset vendors from sales through mobile operators for the years 2006 and 2007.

In 2006, the handset revenue generated from sales through mobile operators was approximately 61 percent of the total revenue generated from sales worldwide. The number declined to 60 percent in the year 2007.

Figure 17: Worldwide Handset Revenue for Handset Vendors (In USD Billion, 2006 & 2007E)



Source: Portio Research Ltd.

E – Estimated

For forecasts of worldwide handset shipments, total revenues and handset revenues through mobile network operators, please see our market study **['Slicing up the Mobile Services Revenue Pie']**.

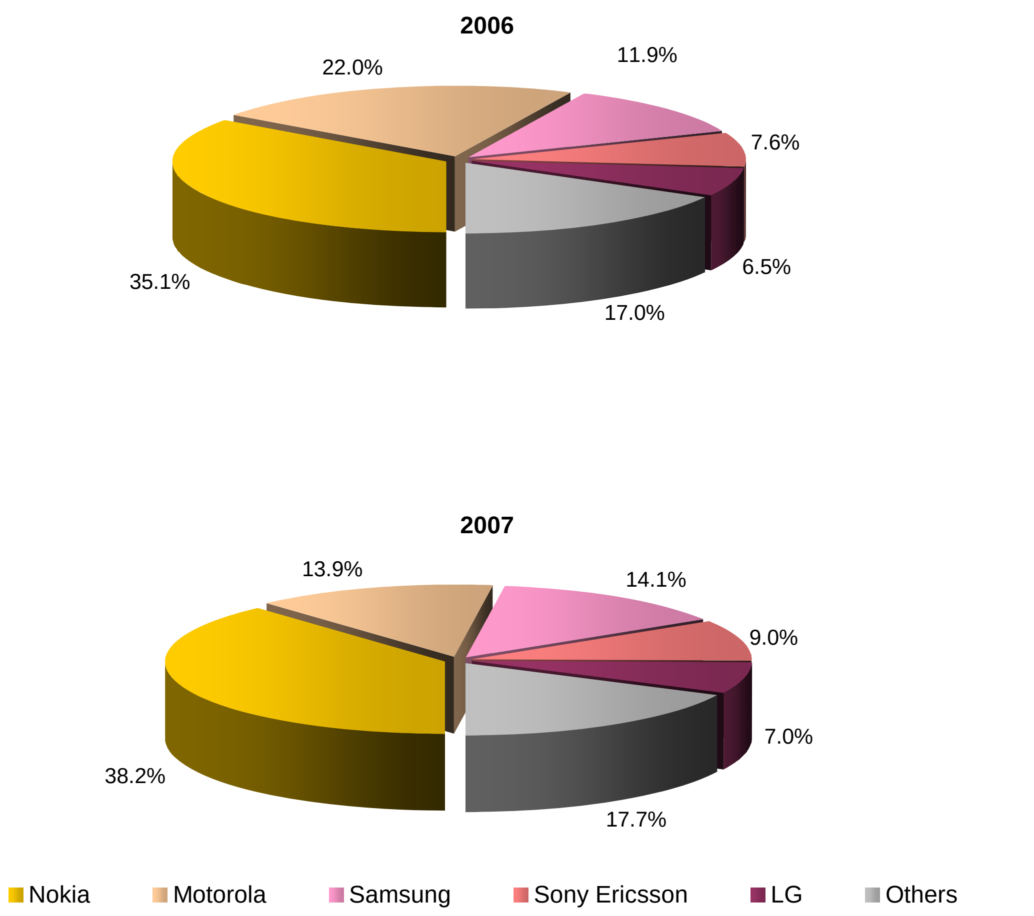
Sell Side Analysis

In 2007, Nokia continued to dominate as the market leader in terms of the number of handsets shipped worldwide. The total number of handsets shipped by the company during the year was 437.1 million, accounting for more than 38 percent of the overall market. Samsung, which shipped 161.1 million handsets, came in second. The other leading vendors were Motorola, Sony Ericsson and LG. Together, these five companies accounted for almost 82.3 percent of the global market.

In 2007, Nokia continued to dominate as the market leader in terms of the number of handsets shipped worldwide.

Figure 18 depicts the market share comparison of the top five global handset vendors, based on handset shipments in 2006 and 2007.

Figure 18: Worldwide Market Share Comparison—by Handset Vendor (2006 and 2007)



Source: Portio Research Ltd.

Table 10 lists the number of handsets shipped by leading handset vendors worldwide in each quarter of 2006 and 2007.

Table 3: Quarterly Handset Shipments Worldwide (In Million, Q1 2006–Q4 2007)

Handset Vendor	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007
Nokia	75.1	78.4	88.5	105.5	91.1	100.8	111.7	133.5
Motorola	46.1	51.9	53.7	65.7	45.4	35.5	37.2	40.9
Samsung	29.0	26.3	30.7	32.0	34.8	37.4	42.6	46.3
Sony Ericsson	13.3	15.7	19.8	26.0	21.8	24.9	25.9	30.8
LG	15.6	15.3	16.5	17.0	15.8	19.1	21.9	23.7

Source: Company Websites

For further analysis of the initiatives taken by handset vendors to increase penetration in emerging markets, please see our popular market study '**The Next Billion: Strategies for driving growth and making profits in low-ARPU mobile markets**'.

Infrastructure and Technology

Overview

The worldwide mobile market primarily operates on the following technologies:

- Code Division Multiple Access (CDMA)
- Time Division Multiple Access (TDMA)
- Global System Mobile Communications (GSM)
- Wideband Code Division Multiple Access (W-CDMA)

W-CDMA acts as an underlying interface for several other technologies including UMTS and HSPA.

The mobile infrastructure market, including GSM, CDMA and W-CDMA, did not enjoy much growth in 2006. In 2007 the market is likely to exhibit a single-digit growth of between 3 percent and 4 percent.

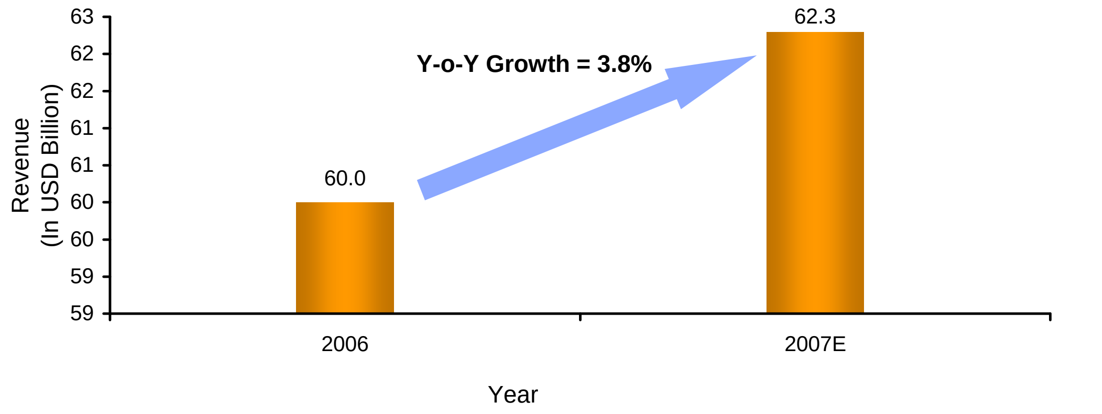
The salient features of the technologies are as follows:

- GSM is the most popular mobile communication standard worldwide, particularly outside North America.
- CDMA technology was introduced after GSM; it offers higher capacity and is more reliable than previous digital cellular systems. The technology has been deployed primarily in the US and in Asia and, to some extent, in Eastern Europe and Africa.
- W-CDMA is the official third-generation network evolution of 2G GSM networks deployed worldwide. The technology uses the CDMA signalling method and currently accounts for less than 5 percent of the worldwide mobile subscriber base.

The uptake of CDMA declined in 2006, as operators in Asia now seem to favour GSM technology. When compared with GSM, the deployment of CDMA-based networks in some developing countries in Asia, Africa and Latin America has been very low. Moreover, infrastructure vendors such as Ericsson have aggressively marketed their GSM-based infrastructure products in these regions. Expenditure on CDMA-based infrastructure in 2003 was about 40 percent of the total mobile network infrastructure expenditure in Asia, although this figure declined drastically to just over 20 percent in 2006. However, the scenario in North America has been quite different. The North American mobile market has witnessed significant growth in the CDMA domain. Major operators in the region have been investing significantly in upgrading their existing CDMA networks. Investment in CDMA networks is expected to continue to increase in the North American region in the future.

The mobile infrastructure market, including GSM, CDMA and W-CDMA, did not enjoy much growth in 2006. The scenario for 2007, however, is expected to be different and the mobile infrastructure market is likely to exhibit a single-digit growth of between 3 percent and 4 percent. The figure below shows the revenue generated by infrastructure vendors worldwide for the year 2006 and the estimated figure for 2007.

Figure 19: Worldwide Infrastructure Vendor Revenue (In USD Billion, 2006 & 2007E)



Source: Portio Research Ltd.

E – Estimated

For a forecast of worldwide infrastructure vendor revenues (2007 to 2011), please read our market study **'Slicing up the Mobile Services Revenue Pie'**.

In the coming five years, operators will strive to establish mobile networks in the rural regions of the emerging countries, which will bring increased opportunities to infrastructure vendors.

The Future

Global mobile penetration has crossed the 50 percent mark. As that penetration figure grows form 50 percent to 75 percent, a major chunk of the new subscribers will come from emerging markets such as China and India. The rural regions in these emerging countries are expected to contribute significantly to this much-anticipated growth of mobile markets. In the coming five years, operators will strive to establish mobile networks in these rural regions, which will bring increased opportunities to infrastructure vendors. However, the contribution of these potential rural consumers to overall ARPU will be low. In addition, the lack of basic infrastructure essentials - such as a reliable electricity supply - will create further challenges for operators.

Operators can counter this situation by lowering their capital and operational expenditure, and by offering well-tailored tariffs, hence strengthening their otherwise slim profit margins. More than two-thirds of the total cost incurred by an operator while increasing coverage lies in the establishment of base stations, towers and backhaul; the other major item of expenditure is the establishment of the core network.[1] The primary reason for this is the large number of base stations established as compared to the installation of other components of a mobile network. Thus, by reducing the average expenditure on a base station, mobile network operators can significantly reduce CAPEX and improve their profit margins while deploying services in rural areas.

For an analysis of cost-effective strategies, please study our report '**The Next Billion: Strategies for driving growth and making profits in low-ARPU mobile markets**'.

[1]Source : http://www.nokia.com/NOKIA_COM_1/About_Nokia/Press/Press_Events/zz_New_Potential/White_paper_Accelerating.pdf

Also available from Portio Research Limited

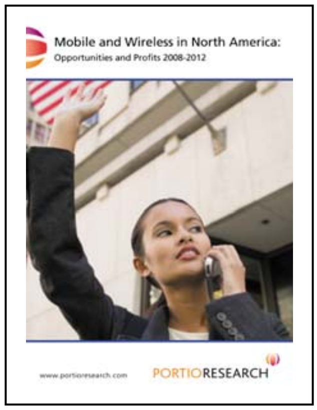
Portio Research Ltd is a UK-based research company focussing on the mobile space, providing reports, handbooks, directories and database products.

New and Best Selling Reports in 2008:

Mobile Data Services Markets 2008

This long-awaited detailed new market study providers a detailed look at mobile data services markets worldwide, including complete regional revenue analysis and an in-depth look at the development of data services around the world. Published in June 2008, this massive new study is packed with over 230 pages of data giving you an unparalleled state-of-the-art understanding of today's non-voice mobile markets. Packed with data you can use, this report explains how markets have developed to the point they are today, and what likely growth lies ahead in the coming years. Click here for more details.

Mobile and Wireless in the US: Opportunities and Profits 2008-2012



This detailed market report takes an in-depth look at the fantastic opportunities ahead in the rapidly-evolving US mobile and wireless market. With fast growth and world beating high ARPU this market looks set to generate tens of billions in additional voice and data revenues over the next 5 years, and this report gives you all the essential market data and forecasts, including MNO market share, subscriber demographics, trends in data consumption and much more. Click here for more details.

Slicing up the Mobile Services Revenue Pie

This exciting new market study will show you the massive USD 874 Bn revenues flowing into mobile network operators worldwide, analyzing which services and countries the money comes from, and where it ends up going to. Complete mobile subscriber growth forecasts, handset shipment forecasts, mobile data services revenue forecasts - SMS, MMS, mobile e-mail, IM, mobile TV and video, mobile games, mobile music and much more. Click here for more details.

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