

## Analysis and prospects for:

- France
- Germany
- Italy
- Spain
- United Kingdom
- Western Europe  
(EU 15 +  
Switzerland &  
Norway)

# 3G Economics

## European Mobile Operators' Strategies

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## 3G Economics European Mobile Operators' Strategies

The take-off of 3G in Western Europe is now a reality, **with 7 million subscribers at the end of 2004 and 25 million forecast for the end of 2005.**

Data ARPU is growing, but SMS continue to account for over 80% of this figure.

The mobile market in Western Europe (the EU15 plus Switzerland and Norway) should grow by almost 6.7% in 2005.

Consolidation among mobile operators in Western Europe is far from over, with several takeovers/acquisitions seen in 2005.

Our predictions indicate a European mobile market that should have 421 million subscribers through 2010 and a data ARPU that should account for 29% of revenues.

The transposition of flagship internet applications (email, instant messaging, browsing, blogs etc.) represents a major challenge and opportunity for the industry.

This report on the economics of 3G in Western Europe analyses sector trends against a background of the take-off in 3G mobile telephony and the development of data services.

### State of the mobile sector in Western Europe

The mobile telephony market in Western Europe is nearing saturation in most countries, with a very high penetration rate of 92% on average at the end of 2004. Multiple subscription in several countries is nevertheless swelling this figure. Almost 60% of mobile users use pre-paid cards. The revenues generated by mobile operators totalled around EUR 139 billion in 2005, up 6.7% versus 2004.

Europe boasted almost 13 million UMTS subscribers by the end of June 2005, versus 7 million at the end of 2004. By comparison, the Japanese incumbent NTT DoCoMo had 8.5 million FOMA subscribers by the end of 2004, versus 16.7 million by mid-2005.

Hutchison, which was a pioneer in 3G in Europe and accounted for almost 80% of UMTS subscribers by the end of 2004, boosted several markets, including Italy and the UK, by massively subsidising UMTS devices. Total ARPU in Western Europe has remained stable since 2001: it rose from EUR 30.7 to EUR 31 during this period. The share of data ARPU increased to 17% in 2004, versus 15% in 2003. Three quarters of these data-based revenues are generated by SMS. As for MMS, they are taking off in some markets, but still suffer from a high failure rate and restricted interoperability.

Voice or MoU (Minutes of Usage) consumption reveals major disparities, mainly related to pricing levels in the various markets: in 2004 average consumption per subscriber was around 76 minutes in Germany, versus 258 minutes in Finland.

The pricing plans for 3G reflect the capacity available on these networks, which enable mobile operators to charge prices closer to those on fixed networks and to boost the trend towards the substitution of fixed with mobile calls.

Consolidation in the mobile telephony sector in 2005 was characterised by Orange's takeover of Amena and Telefonica's takeover of mmO2 in Spain.

### ■ Operators' financial results

Turnover, excluding several countries in Northern Europe, is still increasing. In saturated and more competitive markets such as Finland and Denmark, the turnover of mobile operators has been dropping for the last two years, linked to fierce competition and the related drop in voice ARPU.

The EBITDA margins of European mobile operators remain high. They are generally around 40%, with the notable exception of Finland, where margins are around 10-20%. GSM revenues make it possible to globally finance the development of UMTS.

### Overview and outlook for new mobile services

SMS account for over 80% of data ARPU, with the remainder generated by ringtone downloading, screen savers, chat and games.

A large number of mobile data services are currently on offer in the field of messaging, leisure and business applications. Although there is no longer any talk of a *killer application* in the industry, the downloading of music and television onto mobiles is mobilising operators and their partners.

The *streaming* mode constitutes one of the main attractions of 3G for providing mobile subscribers with video, as well as current mobile television services.

Surveys suggest that mobile television is popular with the general public, who would be prepared to see a few extra Euros added to their monthly bill for this service. The current offering based on video streaming should be accompanied by *broadcast solutions*. However, a broad range of options still remain open. In terms of technology, there are several choices to be made: between terrestrial or satellite broadcasting, between standards (DMB-S, DMB-T, DVB-H, and MediaFLO) and

frequencies. These options are naturally related to regulatory questions and programming decisions: should existing channels be privileged or specific formats? Uncertainty also surrounds the business models to be adopted (will revenues come from bouquets and premium channels, or will they be generated by interactive applications linked to programmes?), as well as the roles attributed to various players in the value chain. Moreover, what would happen if broadcasters were to bypass mobile operators by operating the service themselves and favouring portable video devices?

Following on from the success of ringtone downloading and with the increase in the bandwidth capacity of mobile networks and the memory capacity of devices, downloading music onto mobiles could become one of the most attractive services in months to come. A lot of questions remain regarding the cost of distribution agreements with the *record majors* and the additional revenues that may be reaped by mobile operators.

Along with SMS, mail represents the main source of revenues from mobile data services.

Instant messaging (IM) and email with several push email solutions that is competing with Blackberry's RIM solutions, should see strong growth over the next three years. Blogs are also spreading to the mobile environment.

Mobile VoIP is now made possible by several technologies. Commercial services have been emerging worldwide since the end of 2004, with Wi-Fi devices for voice and bi-mode cellular/Wi-Fi devices. The signature of an agreement between the German mobile operator E-Plus and Skype should enable the operator's 3G subscribers to make VoIP calls, as long as they subscribe to the "flat-rate" data package.

Lastly, as with fixed internet services, porn via mobiles should see strong growth.

M2M (machine-to-machine) services have a very high market potential, with current market conditions very favourable to their development. This market should account for 6% of mobile revenues by 2010.

There are other avenues of growth in the mobile data services segment, such as, for example, valorising the transaction and identification capabilities of devices, like the Felica project by DoCoMo.

### Regulatory framework and conditions for competition

Pressure from national regulators and competition authorities on the price of call termination and SMS is high and could squeeze mobile operators' margins.

MVNOs certainly pose the most immediate threat to mobile operators in several

markets that have not been greatly affected by this phenomenon to-date like Germany. Although they have a definite impact on prices and their potential in terms of finer market segmentation is high, uncertainty remains regarding their long-term profitability. The mobile data market should steadily open up to MVNOs, raising major questions regarding data pricing.

The radio spectrum, a rare resource, appears to be strategic given the advent of new BWA technologies and the development of mobile television in broadcasting mode. 3G has offered additional capacity to several mobile operators with saturated GSM networks in major cities. The 3G frequencies available today should make it possible for UMTS networks to support an increasing amount of traffic in the years to come. In the longer term, the question of the 3G "extension bands" (2.5-2.6 GHz); coveted by a certain number of players to use for new technologies such as the mobile version of WiMAX (802.16 e), remains open.

### Leading mobile operators' strategies

The transition between the second (GSM) and third (UMTS) generation of mobile systems in Western Europe is taking place at a time when markets are reaching saturation, GSM networks are producing a huge cash flow and the investments to be made in 3G are very high. The mobile operator's task is complicated by the need to manage content and to increase the number of service platforms to manage voice traffic, video images, TV and voice mail services.

Mobile broadband is becoming a reality on 3G networks via the intermediary of several new technologies including Flash-OFDM, UMTS TDD and mobile WiMAX in the near future.

European mobile operators have adopted several different approaches to integrating new technologies and trends in GSM and UMTS standards. The availability of significant financial resources has enabled some operators to invest in EDGE in addition to 3G coverage. At the other end of the scale, Bouygues Telecom has chosen to await the development of HSDPA to move into UMTS.

Many market players are waiting for HSDPA (High Speed Downlink Packet Access), which should offer bandwidth speeds of around 1 Mbps per user in 2006, enabling them to offer real "mobile broadband access."

WiMAX in its mobile version (802.16e) will not offer the same mobility features as 2G or 3G cellular systems, or Flash-OFDM. To provide the same coverage, this technology will require the same level of investment as a cellular 3G network.

During the phase of debt reduction (2001-2004 roughly) the financial strategies of mobile operators resulted in an optimisation of organisation, cost control and even cost reduction, notably via recourse to outsourcing, and lastly in stable and then reduced investment expenditure. Over the next five years, we expect weak growth in mobile operators' revenues combined with very high pressure on their margins due to competition and the consequences of regulatory policies.

Growth strategies in the mobile sector are creating a trend towards concentration among mobile operators, as in the USA where alliances between Cingular/AT&T Wireless and Sprint/Nextel were formed in 2004. As for Europe, the main deals involved the acquisition of mm02 by Telefonica and the takeover of Wind in Italy by Orascom and France Telecom's entry into the Spanish mobile market thanks to its acquisition of Amena.

In terms of marketing and under pressure from MVNOs in particular, mobile operators have innovated rapidly in the field of prices and responded to the new price offerings of their competitors, notably with flat rate packages. They are offering diversified value added services in all market segments.

Substitution between fixed and mobile services is one of the factors generally cited to explain the decline in fixed telephony in recent years. Inversely, VoIP and its very low pricing are creating a fresh incentive for users to make calls on the fixed network.

Operators are actively working on setting up convergence between fixed and mobile networks. Wi-Fi integration for mobile and integrated operators and mobile Internet access for fixed operators are all areas that are being explored.

There is a major risk associated with the flat rate pricing for data as seen in Japan with a direct impact on total ARPU and turnover.

Tendency in mobile portals which are used by only a quarter of all mobile subscribers, is towards a greater opening to internet.

## Scenarios

The scenario in terms of trends describes a situation that is evolving very little, with mobile operators succeeding in retaining control over most of the added value generated by their subscribers.

In a scenario of radical change, pressure on voice and data process is very high and related to regulation and an unfavourable competitive environment for mobile operators. The "services offering" aspect is taking the upper hand over content control for mobile operators, who are increasingly restricted to the role of voice and data traffic transporters.

The sets of hypotheses for each scenario are particularly distinguished by trends in voice ARPU, by the impact of MVNOs and the phenomenon of mobile VoIP, by the advent of new entrants and by the position of players in the fixed Internet segment.

## Market forecasts

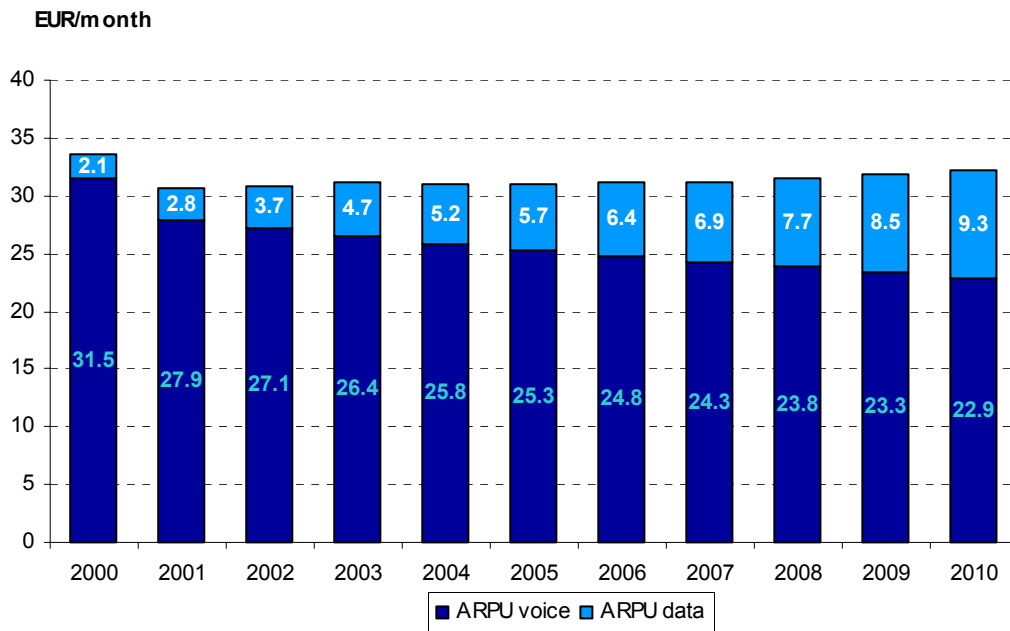
Our forecasts regarding trends in the Western European mobile market based on scenario forecasts, show growth in the number of mobile subscribers from 383 million in 2005 to 421 million in 2010, or a penetration rate of 106% by this date.

The share of data services as a proportion of operators' revenues should increase from 17% in 2004 to 29% in 2010.

Revenues from mobile services should reach EUR 162 billion in 2010, versus EUR 130 billion in 2004, representing an increase of 24.6% over the period and of 4.1% in annual growth rates.

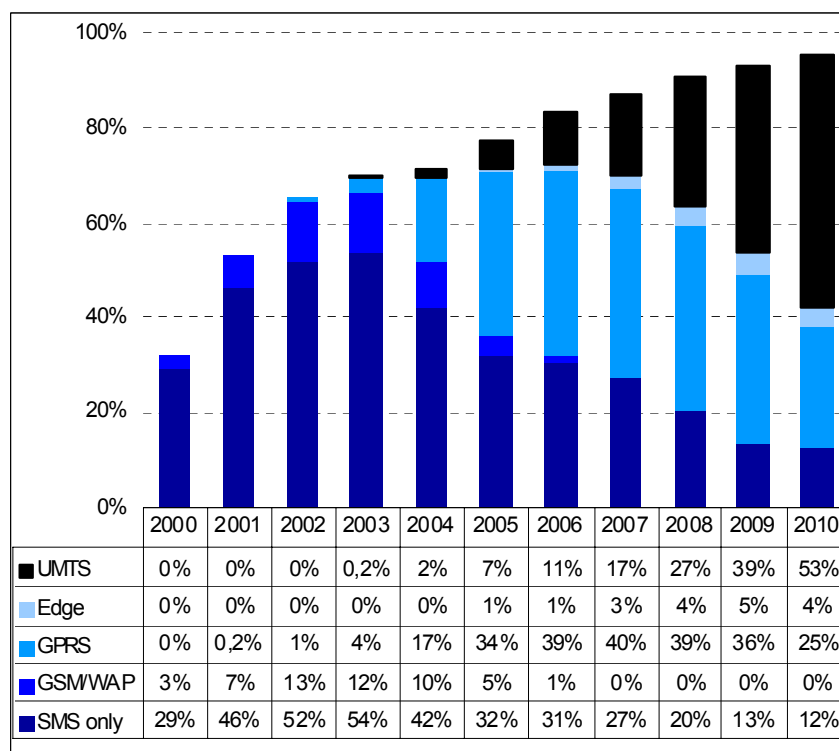
We provide detailed forecasts for the 5 biggest European markets, namely Germany, Spain, France, Italy and the UK. A major contrast appears between these markets, which have different penetration rates and reveal major differences in terms of ARPU.

### Voice and data ARPU growth hypothesis for Western Europe (2000-2010)

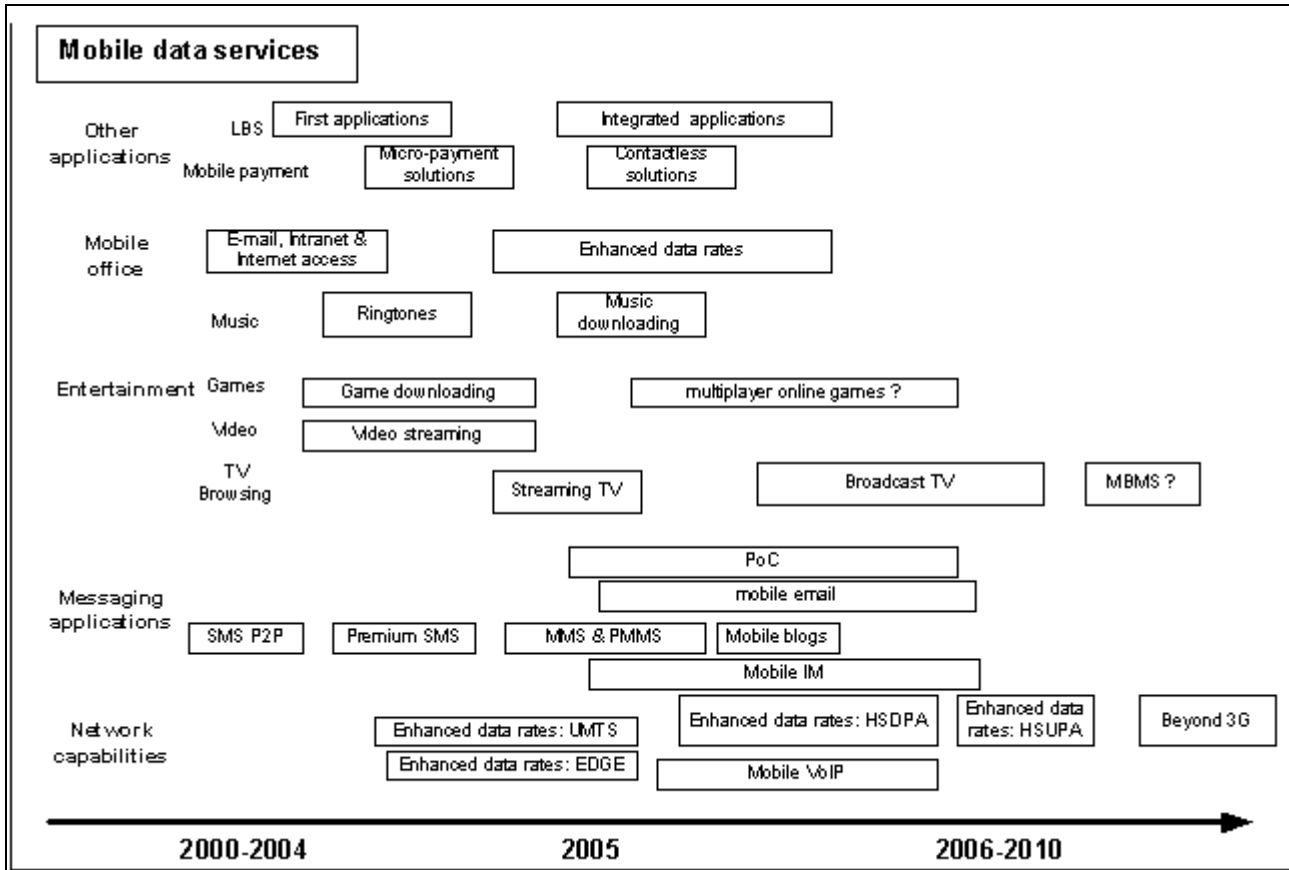


Source: IDATE

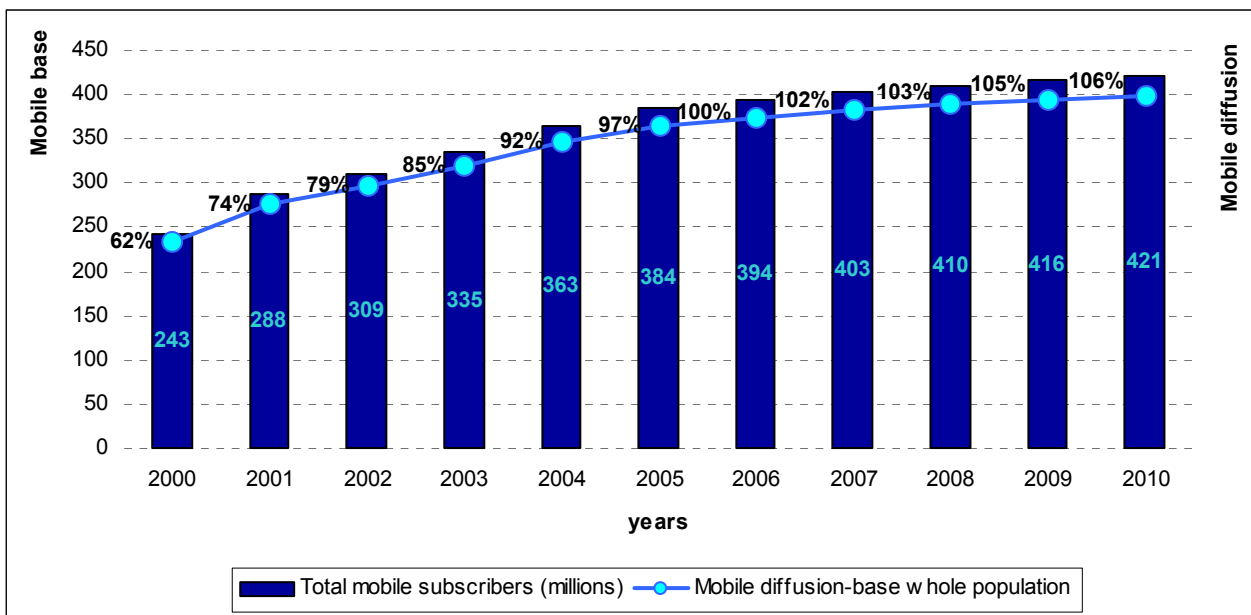
### Mobile data services' take-up in the EU-15 (+Norway & Switzerland): equipped population



Source: IDATE



Mobile subscriber base growth hypothesis for Western Europe (2000-2010)



Source : IDATE