

Private sector

Note No. 184

August 1999

Competition in Mobile Telecoms

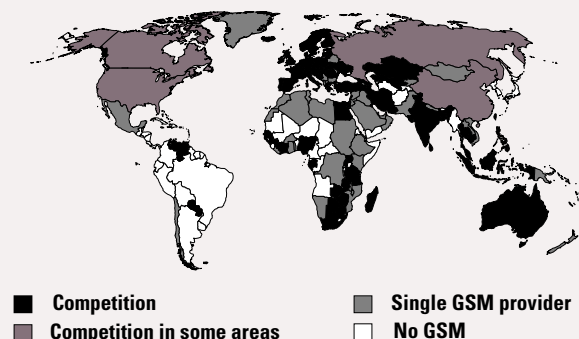
Carlo Maria
Rosotto, Michel
Kerf, and
Jeffrey Roblfs

Many governments, particularly in developing and emerging market economies, still doubt the benefits of competition in wireless services. But international experience shows that competition in any of the digital technologies brings substantial benefits to users and creates powerful incentives for incumbent fixed-line operators to lower prices, introduce new services, and increase productivity. This Note explores the impact of competition on mobile service using data on Global System for Mobile Communications (GSM) technology. Launched in Europe in 1992, GSM networks have grown by up to 80 percent a year and now reach an estimated 135 million subscribers in nearly 130 countries (table 1).

Competition in the GSM market is now a global trend. More than seventy countries have at least two GSM providers (figure 1).¹ Most Eastern European countries, preparing for accession to the European Union, have licensed two GSM providers, and second operators are emerging in many countries of the Commonwealth of Independent States (Russia, Ukraine, the Baltics),

where GSM contributes most of the growth in installed lines. Second operators are also present in East and South Asia. Competition has been introduced in many countries in the Middle East and North Africa (Egypt, Lebanon, Morocco). Several Sub-Saharan African countries (Côte d'Ivoire, Madagascar, Tanzania) have also introduced a second GSM operator. Where it exists,

FIGURE 1 COMPETITION IN GSM SERVICES, AUGUST 1999



Note: Competition means that a country has two or more licensed GSM operators, and competition in some areas that the competing operators' service areas largely do not overlap.
Source: Based on GSM Association data.

TABLE 1 GLOBAL SUBSCRIBERS BY TECHNOLOGY, MARCH 1999

Technology	Countries	Subscribers (millions)
GSM	129	135
AMPS	95	76
PDC	1	39
CDMA	17	20
TDMA	36	18
TACS	24	14
NMT	35	3

Source: Ericsson; Global Mobile.





TABLE 2 GROWTH IN THE CELLULAR MARKET BEFORE AND AFTER GSM COMPETITION
Percentage growth in number of subscribers

Market	YC - 1	YC ^a	YC + 1
Belgium	85	116	125
Estonia	..	121	127
Italy	26	57	81
Philippines	161	153	111
Romania	37	1,300	44
Singapore	42	90	57 ^b
Taiwan (China)	19	58	37

.. Not available.

a. Year in which competition starts.

b. Estimate.

Source: Financial Times Mobile Communications; Strategic Policy Research.

competition has given rise to strong growth in the mobile telecommunications market. (In Japan and Latin America and the Caribbean, where GSM is not widely adopted, competition among other technologies is widespread.)

Even countries with very low per capita incomes are able to sustain at least two cellular operators. Second operators are emerging in countries with a GDP per capita of less than US\$1,000, such as Azerbaijan, Bangladesh, Côte d'Ivoire, Georgia, and Uganda. The Philippines, Romania, and many other countries with a GDP per capita between US\$1,000 and US\$2,000 are experiencing strong growth in the mobile market as a result of the introduction of GSM competition. In Estonia the presence of three GSM operators has increased cellular penetration—the number of cellular phone subscribers per 100 people—to 13 percent.

Even in countries with very low population density there is room for at least two GSM operators, as in Botswana, Côte d'Ivoire, Egypt, Madagascar, and Tanzania. In these countries, however, network development remains concentrated around major cities and more densely populated areas.

Effects on the telecoms market

Cellular competition often brings with it growth in the cellular market. In relatively underdeveloped

markets, such as Azerbaijan, Georgia, the Philippines, and Romania, GSM competition has marked the transition from a niche to a mass market. In Romania, where GSM competition was introduced in early 1997, the number of subscribers increased thirteenfold—from 16,000 to 225,000—by the end of that year. In more mature markets, where a single provider of GSM services had achieved average growth rates of 30 to 50 percent, such as Singapore, Taiwan (China), and most of Western Europe, GSM competition has increased those rates to 60 to 90 percent (table 2). The market growth effect holds regardless of GDP per capita and cellular penetration before competition.

GSM competition also reduces the price of cellular services. In several competitive markets the average price of a call from a GSM handset is 40 to 50 percent lower than in markets with a single provider. In the Middle East and North Africa it is Lebanon, where competition is most intense, that has the lowest prices (7 cents a minute, against a regional average of 40 to 50 cents a minute). Prices have fallen sharply in several markets in Western Europe. Four years after the introduction of competition tariffs had dropped by as much as 60 percent in Norway, and as much as 70 percent in Germany.

Another positive development of competitive digital cellular markets is the emergence of a wider range of services. In response to the entry of new competitors, incumbent operators introduce new features, such as caller ID, call forwarding, and call waiting. In several industrial and emerging economies GSM competition has also stimulated the introduction of prepaid cards, accelerating market growth. Thus to retain or increase market shares, competitors in the digital cellular market both reduce prices and develop new products and bundle services. GSM competition generally has not prevented continued expansion of wireline services, whether in mature markets or emerging economies (figure 2). In some countries (Estonia, Romania) the rate of growth in fixed lines increased after the introduction of a second GSM operator.

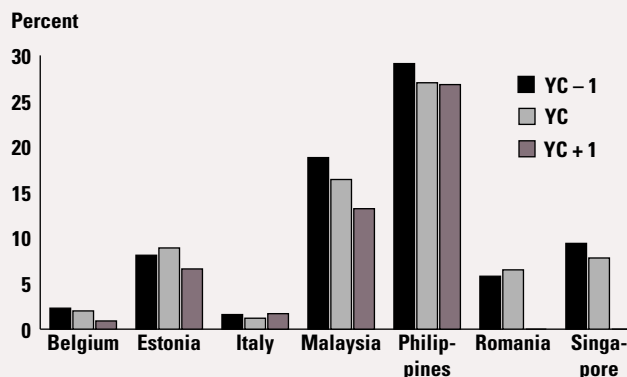
Finally, the introduction of new cellular players in the market, capable of offering new services and attracting new subscribers, tends to increase overall investment as well as revenues in telecommunications (table 3). Revenues grow both because the overall number of subscribers, for fixed and mobile networks, increases, and because the new cellular services generate particularly high revenues, given mobile customers' willingness to pay higher prices.

Effects on the incumbent

Evidence from both industrial and emerging economies shows that introducing GSM competition does not hurt the operational and financial performance of the incumbent operator. The threat of competition alone is usually enough to cause the incumbent operator to adopt a series of changes to sustain its competitive edge. In Morocco, for example, where the authorities gave notice that GSM competition would be introduced in 1999, the incumbent began to rapidly expand its GSM network and reduce its tariffs to consolidate its market position well before competition was actually introduced.

As new GSM operators start to enter the market, the incumbent maintains its efforts to increase its competitiveness, enabling it to enlarge its subscriber base and retain a large share of the growing GSM market. This scenario is typical in both industrial and emerging economies. In Belgium the incumbent operator, Belgacom Mobile, has expanded from about 200,000 subscribers at the beginning of 1996, the year in which competition was introduced, to more than 900,000 today. Italy's incumbent operator, Telecom Italia Mobile, has increased its subscriber base from about 2 million at the end of 1995, when competition from Omnitel was introduced, to about 12 million today, retaining about 72 percent of the mobile telecommunications market and 65 percent of the GSM segment. Estonia's incumbent operator, Eesti Mobiltelefon, more than doubled its number of subscribers after the entry of two operators in the GSM market. Having achieved annual growth rates as high as 98 per-

FIGURE 2 GROWTH IN FIXED LINES BEFORE AND AFTER GSM COMPETITION



Note: YC is the year in which competition starts.

Source: International Telecommunication Union; Strategic Policy Research.

cent in 1997–98, Eesti Mobiltelefon holds about 60 percent of the GSM market (table 4).

Nor does the advent of competition in the GSM market seem to harm the incumbent's profitability. The large investments in GSM infrastructure that incumbents typically make as competitive pressures increase reflect strong confidence in the continued profitability of their GSM operations. And when the incumbent is a provider of both fixed and mobile services, its overall profitability does not seem to suffer either. In some countries for which data are available, the incumbent's overall profitability has tended to increase. A typical example is Spain, where the incumbent operator increased its revenues by 72 percent in the year in which competition was introduced, and by 31 percent in the year before. In the same period the growth rate of profits increased from 8 percent to 16 percent.

Current policy trends

As the benefits of cellular competition become more apparent, a growing number of governments are taking steps to ensure that new cellular operators can compete effectively with the incumbent operator. One of the most important—and arduous—tasks is to promote and enforce appropriate interconnection agreements between the incumbent operator and its competitors. Adequate regulatory mechanisms are also important to implement national and



TABLE 3 TELECOMMUNICATIONS REVENUES BEFORE AND AFTER GSM COMPETITION
Percent

Market	YC – 1		YC ^a		YC + 1	
	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total ^b	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total ^b	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total ^b
Belgium	1.6	5	1.7	11	1.8 ^c	21
Estonia	2.7	7	2.9	9
Italy	1.8	14	1.9	21	1.9 ^c	34
Philippines	1.4	10	1.3	18	1.3	32
Romania	1.2	1	1.6	9
Singapore	3.0	22	3.3	25	3.6 ^c	38

.. Not available. a. Year in which competition starts. b. Conservative estimates. c. Estimate.

Source: International Telecommunication Union; Strategic Policy Research.

international roaming agreements between mobile operators.

Even with the best regulatory rules, however, it is difficult to ensure that cellular competitors are always granted access to the incumbent's network under fair conditions. As a result European Union members and other countries have granted new GSM operators the right to build their own long-distance and international gateway facilities. This right allows the new competitors to offer the full range of local, long-distance, and international services without having to rely on the network of the incumbent operator. And it brings competitive pressures to bear on the price of intercity leased line circuits and on the price of long-distance and international communications.

Other steps can also be taken to ensure that cellular operators are able to provide the full range of services possible with modern digital technology. GSM operators are increasingly allowed to provide fixed as well as mobile wireless services, to transmit data as well as voice, and to develop private as well as public networks.

In this Note GSM refers to a range of interoperable technologies, including GSM 800, GSM 900, DCS 1800, and PCS 1900.

Carlos Braga, Emmanuel Forestier, Peter Smith, Svetoslav Tintchev, Eloy Vidal, and Björn Wellenius contributed to this Note.

¹ In North America, mainly through the PCS 1900 technology.

TABLE 4 SUBSCRIBERS TO THE INCUMBENT'S MOBILE NETWORK BEFORE AND AFTER GSM COMPETITION
Thousands

Market	YC – 1	YC ^a	YC + 1
Belgium	185	378	675
Chile	57	115	182
Estonia	13	26	53
France	44	370	700
Italy	467	1,910	5,600
Latvia	10	27	65
Mexico	1,048	1,900	..
Netherlands	68	241	484
Romania	..	20	200

.. Not available.

a. Year in which competition starts.

Source: International Telecommunication Union; Strategic Policy Research.

Carlo Maria Rossotto (crossotto@worldbank.org), Telecommunications Division, Michel Kerf, Middle East and North Africa Region, and Jeffrey Roblfs, Strategic Policy Research, Maryland

Viewpoint is an open forum intended to encourage dissemination of and debate on ideas, innovations, and best practices for expanding the private sector. The views published are those of the authors and should not be attributed to the World Bank or any of its affiliated organizations. Nor do any of the conclusions represent official policy of the World Bank or of its Executive Directors or the countries they represent.

To order additional copies please call 202 458 1111 or contact Suzanne Smith, editor, Room F11K-208, The World Bank, 1818 H Street, NW, Washington, D.C. 20433, or Internet address ssmith7@worldbank.org. The series is also available on-line (www.worldbank.org/html/fpd/notes/).

♻️ Printed on recycled paper.