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**SHAPING THE FUTURE MOBILE INFORMATION  
SOCIETY:**

**THE CASE OF MOROCCO**

This case study has been prepared by Claudia Sarrocco <[claudia.sarrocco@itu.int](mailto:claudia.sarrocco@itu.int)>, Policy Analyst, International Telecommunication Union (ITU). *Shaping the future mobile information society: The Case of Morocco* is part of a series of telecommunication case studies produced under the ITU New Initiatives programme of the Office of the Secretary-General. The Shaping the future of information society project is managed by Lara Srivastava <[lara.srivastava@itu.int](mailto:lara.srivastava@itu.int)> under the direction of Tim Kelly <[tim.kelly@itu.int](mailto:tim.kelly@itu.int)>. Other country case studies in this series (Japan, Korea and Norway) can be found at <http://www.itu.int/osg/spu/ni/futuremobile/>. The series is edited by Joanna Goodrick <[joanna.goodrick@itu.int](mailto:joanna.goodrick@itu.int)>. The author wish to thanks His Excellency Rachid El Alami, Minister of Industry, Commerce and Telecommunications of the Kingdom of Morocco, for His time and attention. She also wishes to express her sincere appreciation to the ANRT, in particular to Mr El Kadiri and Ms Belabbes, for their invaluable assistance. The opinions expressed in this study are those of the author and do not necessarily reflect the views of the International Telecommunication Union, its membership, or the Moroccan Government.

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## Glossary

ANRT :	<i>Agence nationale de réglementation des télécommunications</i> - National Telecommunication Regulatory Agency
APEBI :	<i>Association des professionnels des technologies de l'information</i>
ARPU :	Average revenue per user
CGEM :	<i>Confédération Générale des Entreprises du Maroc</i>
DEPTI :	<i>Département de la poste, des télécommunications et des technologies de l'information</i>
GMPCS:	Global mobile personal communication system
GPRS :	General packet radio service
IAM:	Itissalat Al Magrib S.A.
MMS:	Multimedia messaging service
ONPT :	<i>Office National des Postes et des Télécommunications</i>
PBX :	Private branch exchange
SEPTTI :	<i>Secrétariat d'État auprès du Premier Ministre chargé de la poste et des technologies des télécommunications et de l'information</i>
SMS:	Short messaging service
UMTS:	Universal mobile telecommunications system
VSAT :	Very small aperture terminal

# 1 Introduction

It often takes several years of implementation of technological innovation and progress in developed countries before they reach the developing ones. The cost of technology and its development, or the lack of skills necessary for implementation, frequently constitute a barrier to entrance. It may even be the case that services offered hold no immediate attraction in less advanced economies, which have other pressing needs and priorities.



However, this is not true for all innovation, and in particular is clearly not applicable to mobile communications. Mobile services and possible uses are so flexible that they can adapt to diverse requirements, from those of the business man in Tokyo for consulting the stock-exchange rate from inside a taxi, to the carpenter in Rabat, who will be able to obtain a phone even without having a bank account, and to take the calls of his clients while working elsewhere.

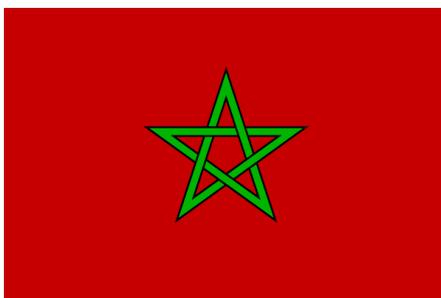
The growth of mobile services is providing unimagined possibilities. Mobile technology is creating new and cheaper ways to provide services to rural areas. The take-up of mobile is breathtaking; all business forecasts are out performed by several hundred per cent.

The impact of mobile has been as important in developing and emerging economies as in developed ones. Mobile communications, when left free to develop and grow in a fair market, supported by a clear regulatory environment, have demonstrated their potential, engendering a revolution on social, economic and cultural life of the population.

This study will concentrate on the experience of Morocco, where the dramatic growth of the mobile communication market has left both the Government and the operators themselves reeling in surprise. Morocco shows high growth and increasing competitiveness in mobile communications, but is at the same time a country with a very low fixed line penetration. The background situation in the country and the regulatory and economical factors from which this explosion grew, will be analysed in the first part of this paper, while the second part will be dedicated to the impact of mobile services on the country, with particular attention to economy and society. Furthermore, perspectives for development and possible limits and backdrops to the current situation will be explored.

## 2 Morocco: Country profile

### 2.1 General information about the country



The first thing one will realize entering *Al Mamlakah al Maghribiyah* (*Royaume du Maroc*, or the Kingdom of Morocco) is the importance of communication for the inhabitants. Taking a train, going to the market, or simply getting a taxi are social experiences and a moment of exchange of information and thoughts. Families are constantly in contact, and if modern life does not allow them to meet for meals, they are in touch by telephone. The sentence “*achkat’oued*” which in English means “what stories do you have to tell me?” is commonly used when calling someone without a precise reason.

Although there is only one official language in the country, Arabic, the linguistic situation is relatively complex, considering the difference existing between written and oral languages, and the wide utilization of French, the country’s second language. Arabic is commonly used in the everyday life, and written languages are classic Arabic and French, the latter often used by professionals and educated people in the business environment, government offices and in academia. French is frequently used interlaced with Arabic, and different Arab and Berber dialects are also spoken by the population, while Spanish is used by a small

number of inhabitants of northern areas. Owing to the delay in the development of content and applications in Arabic, telecommunications services are usually provided in French (although devices supporting Arabic script do exist in the market).

The Moroccan culture is an oral one, owing to its tradition and probably because of the low rate of literacy in the country, which oscillates from a national average of 50 per cent to a minimum of 35 per cent among adult women. The Moroccan Government estimates that today about the 48 per cent of inhabitants older than 10 years old are illiterate, and that among them there are two million children between 9 and 15 years old who do not have access to school and do not benefit of any kind of education. For this reason, while the telephone is widely used, the Internet has been slow to take off, and remains mainly a prerogative of universities and research centres, public administrations and larger private companies.

Another factor which should be taken into consideration when analyzing the elements which facilitated the expansion of a certain technology for communications, is the geographic and demographic situation of the country. With a territory of about 710,000 square kilometers, Morocco is located in the northern part of Africa, bordering the Atlantic Ocean and the Mediterranean Sea. It is separated by only a few kilometers from Spain, while its south and eastern borders are shared with Mauritania and Algeria.

The territory is quite diverse, from fertile plains along the coasts to mountainous peaks and desert areas in inland regions. This obviously affects the distribution of the population, amounting to some 30 million inhabitants, divided into approximately five million households. The more densely populated areas are those situated in the northern part of Morocco, in particular in the urban centres of Casablanca and Rabat, the capital city of the country, between them representing the centre of political and business life, and gathering about 5.5 million inhabitants. Almost all government offices are located in Rabat, where a large segment of the population works as civil servants, while Casablanca is particularly modern and dynamic, and hosts the headquarters of several national and foreign companies. The population exodus from rural areas has been growing in the last twenty years, and today the urban population represents about 60 per cent of the total.<sup>1</sup> The development of the telephone network has followed the distribution of population, with the northern regions more served than the southern, and cities enjoying better connectivity and services than rural villages.

## **2.2 Development and economy**

The 2002 UNDP report on Human Development underlined the delay that Morocco has accumulated in social development. The situation does not seem to have improved over the years: Morocco ranked 115<sup>th</sup> in the United Nations Development Programme (UNDP) Human Development Index (HDI) in 1995, while in 2002 it had dropped to 126<sup>th</sup> position. The illiteracy rate stands at around 50 per cent, one of the highest in the region, Almost one half of the population cannot read, and the school enrolment rate is even lower than in Tunisia and Algeria, and is even lower for secondary schools.<sup>2</sup>

The gross domestic product (GDP) of the country has been slowly growing in the past years, however. Because a large proportion of the population lives in rural areas dominated by labour-intensive agriculture and vulnerable to frequent drought, the distribution of wealth is highly uneven: more than one-fifth of the population in the country is still living below the poverty level.

The economy of the country is essentially based on agriculture. This sector employs about one third of the active population, contributing in 2002 to the 16 per cent of the total GDP, which in 2002 amounted to USD 33.3 billion. The important role played by this sector in the economy, combined with the small size of the farms and the inadequate level of technology and infrastructure, which increase the impact of the frequent droughts, has resulted in an extremely unstable economic growth as showed in [Table 1](#). An important role in the economy of the country is played by small and medium-sized businesses, created by young entrepreneurs, and by the thousands of “micro-enterprises” operating in the country. Unemployment rate however remains high, amounting to the 11.8 per cent in 2003.<sup>3</sup>

Furthermore, the number of medicines per 100,000 inhabitants is 34, well below the 67 of Tunisia. The number of computers and other equipment per 100 inhabitants – 3 per cent in 2002 – is lower than in other countries with similar GDP levels.

Industry and commerce are important factors in the national economy, accounting respectively for 31 per cent and 20 per cent of the total domestic product. The manufacturing sector in Morocco is dominated by

small enterprises, and the production and export of handicrafts throughout the world in particular is an important industry.<sup>4</sup>

**Table 1: Morocco basic indicators**

	1996	1997	1998	1999	2000	2001
<b>Population</b>	27'169'533	27'518'000	27'692'200	27'866'545	28'705'000	29'170'000
<b>Population growth percent</b>	2.06	1.28	0.63	0.63	3.01	1.62
<b>Urban population</b>	53%	53%	54%	54%	55%	56%
<b>Households</b>	4'600'000	4'790'000	4'900'000	5'072'000	5'211'000	5'354'000
<b>GDP (USD)</b>	36'638'786'585	33'414'155'409	35'816'917'246	35'264'285'714	33'308'560'677	33'884'955'752
<b>GDP per capita (USD)</b>	1'349	1'214	1'293	1'265	1'160	1'162
<b>GDP growth per year</b>	13.36	-0.31	8.06	0.46	2.45	8.14

Source: ITU Telecommunication Indicators 2003.

At the beginning of the 1990s, the Government launched several reforms aimed at attracting foreign investment and developing the private sector, thereby launching a process of liberalization and privatization, which has led to the privatization of more than 100 companies since 1993. Domestic and foreign investment was stepped up significantly during the period 1999-2000. Indeed, foreign investment grew nearly fourfold, reaching the unprecedented level of MAD 17.7 billion (USD 1.7 billion), owing to a large extent to the record price obtained for the sale of the second GSM licence (more than USD 1 billion) granted to Méditel. The rate of investment for the period reached 25.3 per cent of GDP.<sup>5</sup> The telecommunication sector continued to be the driving force in the process of privatization, and in 2000 the historical operator, Maroc Telecom, sold 35 per cent of its stakes to the foreign company Vivendi Universal.

Despite the considerable number of privatizations that have taken place, public enterprises still account for a substantial proportion of the national economy: in 2001 they contributed up to 15 per cent to national GDP.<sup>6</sup>

### 2.3 The telecommunication network

Perhaps unsurprisingly, the development of the telecommunication network follows the pattern shown by population density, with the fixed network and the mobile antennas covering principally the northern part of the country, while VSATs and GMPCS telephones are utilized to cover the needs of the rest of the country.

Although the telecommunication network, as well as the railway network, is among the most developed in Africa, the number of fixed phone subscribers at the end of 1999 reached only 1.5 million, i.e. a teledensity of about 5.28 per cent, subsequently decreasing to 1.1 million in 2002, following the growth of mobile phones.

The Moroccan telecommunication network is based on several technologies and different kinds of services, to address the different needs of the country.

Government investment in the development of telecommunication infrastructures has been considerable in the past years, with about USD 1.2 billion spent on upgrading and expanding the network. However, fixed communications still present some limitations in terms of extension, accessibility and quality.<sup>7</sup> Some of these problems have been addressed by the advent of mobile telephones, with coverage now extending to 97 per cent of the population. Although mobile communications are not formally included under the concept of universal service, they have in effect considerably contributed to the extension of universal service in Morocco, bringing the total teledensity above 20 per cent at the beginning of 2003. The remaining fraction of the population represents those living in remote and rural areas, which are not reached by the terrestrial network.

In the latter case, satellite communications are the only solution which could allow universal coverage. In 1999, the Moroccan Government granted the first Global Mobile Personal Communication System (GMPCS) licence to ORBCOMM Maghreb, followed by a second licence to the Global Star Company TESAM. Four additional licences were subsequently granted in 2002, however, because of the high cost of these means, and thanks to the diffusion of cellular communications, these services remained confined to a

niche market — used by travellers in remote areas or by fishermen and sailors to communicate with their headquarters — and did not develop as initially foreseen.<sup>8</sup>

Another technology which is currently used in Morocco is Very Small Aperture Terminals (VSAT). Three licences have been granted by the ANRT to Space Com, Gulfsat Maghreb and Argos/Telenor.<sup>9</sup> VSATs permit the user to enjoy of a direct satellite connection independent from the local network, allowing them to have point to multipoint links (particularly useful to multi-branch companies) and to enjoy a higher Internet bandwidth, an important element in a country where the international internet bandwidth is still limited and under the monopoly of the incumbent operator.

### **3 The success of mobile communications**

#### **3.1 The acceleration of liberalization and competition**

##### **3.1.1 Background**

At the beginning of the nineties the Moroccan Government realized the importance of ICTs for social and economic development and undertook a process of structural transformation, reforming telecommunication policies and allocating a substantial amount of its budget to improve the progress of ICTs throughout the country. The objective of this restructuring was to expand telecommunication infrastructure and popularize the use of communication technologies in the various sectors of the society and economy in Morocco.<sup>10</sup>

After many years of discussion, in 1997 the final text of the Post Office and Telecommunication Act was finally adopted by the Parliament (Law 96/24). With this Law, the Government showed its determination to eliminate the monopoly in the telecommunication sector, creating a telecommunication market that avoids domination by one or two players, supports entrepreneurialism and encourages new entrants and competition, with the emphasis on operating in the interest of the consumer.

Following this decision, 1998 was a year of big change in the overall structure of the telecommunication sector in the country. The former National Post Office and Telecommunication Agency (*Office National des Postes et des Télécommunications* - ONPT) was divided into two separate entities – a telecommunication entity called Maroc Télécom (*Itissalat Al Magrib S.A. - IAM*) and a postal-services entity called Postes Maroc (*Barid Al Magrib*) – and an independent regulatory body, the National Telecommunication Regulatory Agency (*Agence nationale de réglementation des télécommunications* - ANRT) was established.<sup>11</sup>

ANRT has the objective to foster the rapid development of ICTs in the country through regulation and to ensure the establishment of a transparent and clear market environment. It has thus far been responsible for implementing telecommunication policy, administering the application of laws and regulations with respect to all those involved in the telecommunication sector, and resolving disputes.

To achieve its objectives, the Agency established an action plan, whose first three steps included the assignment of a second licence for GSM services, with the purpose of extend the access to voice services; the granting of further VSAT licences, to promote a speedier and higher quality internet access in particular for business and institutions, and the concession of additional GMPCS licences, with more flexible requirements and fewer constraints, to allow the coverage of those areas not reached by the telecommunication network, thus boosting the extension of universal service.

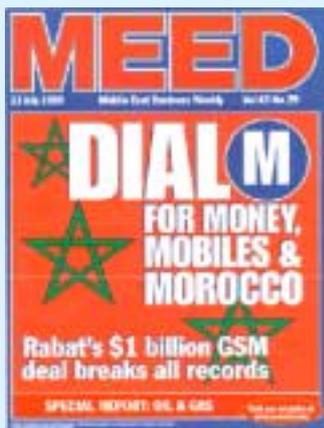
The formulation of a national information technology strategy is under the direction of the Office of the Secretary of State to the Prime Minister responsible for Postal Services and Telecommunication and Information Technologies (*Secrétariat d'État auprès du Premier Ministre chargé de la poste et des technologies des télécommunications et de l'information* - SEPTTI), which was also established in 1998.

SEPTTI replaced the Ministry of Post and Télécommunications, and has the fundamental role of designing national policy relating to information and communication technologies and preparing the five-year development plan for the Government.<sup>12</sup> The Secretariat, however, was recently transformed into a Department, and attached to the Ministry of Industry, Commerce and Telecommunications, becoming the *Département de la poste, des télécommunications et des technologies de l'information* (DEPTI).<sup>13</sup>

### 3.1.2 The current situation

Following the aforementioned reforms, in 1999 the ANRT issued the first call for bids for the second GSM licence. The optimistic market climate and the political will to open the country to competition and foreign investment, in order to be able to fully benefit from ICTs and to integrate Morocco into the world economy<sup>14</sup> favoured the participation of several foreign companies in the bid. MediTelecom (Méditel), a consortium formed by Telefónica of Spain and Telecom Portugal - each with a 30 per cent holding - and Moroccan entrepreneurs, such as the Bank BMCE, prevailed. The consortium paid DAM 11 million, corresponding to about USD 1.1 million, to obtain the second GSM licence in Morocco (see Box 1).

#### Box 1: A successful bid



The success of the bidding process was mainly due to transparency of the bidding operations and the clear regulatory structure in Morocco and the country political stability which “reduces investment risks”.

The sale of the GSM licence in Morocco was more successful than in neighboring countries. Following the success of Morocco, Tunisia issued a call for bids for a second mobile operator in 2001. The Telefónica of Spain and Telecom Portugal consortium made the highest offer, amounting at USD 381 million, only a fraction of what offered by the same companies for the GSM licence in Morocco. The bids received were considered unsatisfactory by the Tunisian Government, which asked the bidders to increase their offers. The licence was eventually granted to Orascom Telecom (based in Egypt) in May 2002, and they started their operations at the end of the year.

Source: M. Terrab, Telecom Reform: The Moroccan Case, 2002. Online at:

[http://lnweb18.worldbank.org/mna/mena.nsf/Attachments/Maroc+Assessment/\\$File/Maroc+Assessment.pdf](http://lnweb18.worldbank.org/mna/mena.nsf/Attachments/Maroc+Assessment/$File/Maroc+Assessment.pdf).

The operator’s hopes were fulfilled, and the launch of the Méditel GSM service in the spring of 2000 was welcomed by long queues of clients at the doors of the Méditel shops. The entrance of Méditel in the Moroccan mobile market brought about a new wave of services and products, and also stimulated the activity of Maroc Telecom, which, in an effort to modernize its services in the face of competition, become an innovator and a driving force in the market, of which it managed to hold onto the largest portion.

As already mentioned, the second mobile licence was only one of the first steps of the liberalization strategy of the Government. Following the initial idea, also the fixed and data services had to be open to the private sector. The privatization of Maroc Telecom took place in December 2000, when the French conglomerate Vivendi Universal acquired the 35 per cent of the equity stakes in the company, for DAM 23 billion, or USD 2.3 billion, which made the transaction one of the most successful in a developing country to date.<sup>15</sup> A further 15 per cent of the company stakes had to be offered on the market in 2002. However, after this initial strategic partnership with Vivendi Universal, the process slowed down, and at the end of 2003 the situation remain unchanged: basic communication services are still provided exclusively by Maroc Telecom, the incumbent operator, which also provides GSM and value-added services.<sup>16</sup>

The positive environment and the political will of the late nineties were somehow changed by the international situation of the telecommunication market, but also by the lack of transparency of the regulatory framework in the country. The creation of the regulatory agency had indeed been an important step, nevertheless, the position of the regulator vis-à-vis the Government and the incumbent operator had to be streamlined and strengthened, giving it effective enforcement powers and ensuring the transparency of operation.

The feeling in the private sector was that the terms of the participation of Vivendi in Maroc Telecom were not clear, and in particular that the regulator had effectively been excluded from the transaction. The uncertain role of ANRT, its “competition” with the SEPTI (government) and the large interests of the Government in the historical operator led to a point of rupture of the system, causing a period of regulatory hesitation and the protests of the head of the ANRT, Mr Mostafa Terrab, who resigned as a remonstrance against the Government’s plans to alter the legal status of the regulator. Mr Terrab claimed that the proposed

legislation instead than going towards the achievement of the policy objectives established with the Law 24/96, was a backward step in the liberalization of the telecom sector.

This position is shared by some private companies operating in the field of telecommunications, which considered the liberalization as a way to stimulate direct foreign investment in different sector of the country's economy, but also to increase employment and foster the creation of new business opportunities.

In this framework, the ANRT issued a call for bids to grant the second fixed communication licence at the national level. However, this time the answer from the private sector was not as enthusiastic as it had been for the mobile bidding, and, after having reduced the requirements for the new entrant — in particular with regard to the network coverage—and reported the deadline for participation of several months, the offer had to be withdrawn in the absence of any bidder.

The reasons for such a failure are multiple, and have been object of careful investigation and analysis by the Agency itself. It seems the cause is fundamentally the uncertainty of the regulatory environment, the interferences between the regulator and the governmental department in charge of telecommunications (the SEPTI), and the interests of the State in the incumbent operator.

Nevertheless, the path of Morocco towards the information society has not been halted, and in the past two years Morocco established its new e-strategy aimed at the growth of Internet infrastructure and applications in the country, the regulatory agency found a new dynamic head, and the Ministry of telecommunications is particularly active in the development and implementation of the new plans.

Furthermore, ANRT is currently beginning a study to determine the most opportune licence to be granted in the near future, considering the situation of the market, the needs of the country and the past experiences. The entire process will be carried out by the regulator assisted by a consultancy company which will be determined at the beginning of 2004, and which will present its results by the end of the same year.

From the private sector perspective, companies operating directly or indirectly in the field of telecommunications support the necessity to continue with the liberalization process, and the need for a dynamic and healthy market environment, to allow the presence of at least two fixed lines operators, and three mobile operators.

The mobile market environment is still considered to be a good one, thanks to the benefits brought to private business and its contribution to employment. However, this situation is seen as potentially risky in the longer term, as once a balance is found between the two operators, the competitive incentive to continue to improve services and applications may disappear.

While the current situation is seen positively, and private business has benefitted from the occasions created by the development of the sector, their vision is moving ahead rapidly, considering mobile communications and ICTs in general as a way for the country to build up its image at the international level, and to foster the economic growth of the ICT business and consequently of other activities in the country.

### **3.2 Market overview: buying per-minute telephone services**

The Moroccan telecommunication market has been unbalanced for a long time, with demand largely exceeding supply. Analysing the data relating to the penetration of fixed telephones, before the advent of mobile technology, we can realise how the country had a penetration rate not very different from those of neighbouring countries.

This does not seem to be linked to the unavailability of the network — Maroc Telecom covers 52 cities on the Moroccan territory, reaching a large proportion of the population — but more to the difficulty and cost of obtaining a subscription.

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**Table 2: Fixed phone distribution by income**

Income	Percentage of the population	Percentage of fixed telephone subscribers
Above DAM 10 000 (USD 1,100)	15%	100%
Less than DAM 10,000	18%	38%
Considerably below DAM 10,000	67%	3%

Source: McKinsey and Company, June 2001.

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To obtain a subscription, either to a fixed or mobile line, requires a regular income, which guarantees the payment of the monthly subscription, and possibly a bank account (see [Table 2](#)). These requirements are hardly fulfilled by the majority of the population, given the large number of informal workers, who do not have a credit history, and the limited usage of bank accounts. It is estimated that there are about 1.5 million accounts in the country, meaning that less than five per cent of the population are in possession of a bank account.

A report prepared by the ANRT in 1999 revealed that the population was “accepting” the prices and the services as provided by the monopoly operator. The report underlined the problems relating to the high price of subscriptions, the incomplete transparency of billing methods, and the inadequacy of the methods of payment (at the post office). Furthermore, one of the concerns of users was how to better control consumption, and the availability — for free — of detailed bills.<sup>17</sup>

The interest of the Moroccan people in communications, however, did not seem to suffer. Although the number of fixed lines is quite low, there is a growing number of public phones in the country, which constitute for most of the population their only access to telephone services.

### 3.2.1 *Téléboutiques*

Phone booths have initially been installed directly by the monopoly operator, which soon realised the difficulties and the costs implied in maintaining such service: phones were often out of order, or were tampered with in order to steal the small amounts of coins they contained. For this reason in 1993 the Government allowed the establishment of privately-owned public phone-booths, and “*Téléboutiques*” (phone shops). This was the first concession made by the monopoly operator, which allowed the operation of private phone booths against the payment of a percentage on each call. To date there are about 77,000 public telephones in Morocco, of which about 20,000 are *Téléboutiques* scattered throughout the country, from the smallest villages to the crowded urban areas.<sup>18</sup>

The diffusion of *Téléboutiques* helped the Government to attain universal service objectives in a more efficient and economical way, at the same time raising employment, and fostering private initiative. Phone shops met with great success, allowing the poorest members of the population to purchase per-minute telephone services, and continue to be one of the most profitable businesses for the operator, which, notwithstanding the stagnation — and even slight recession — in the growth of fixed lines, still receives about 66 per cent of its revenues from its fixed network.<sup>19</sup> The most important aspect of the spread of phone shops, however, is that they fulfilled a large unsatisfied demand, and diminished the cost of access to basic communication services. This helped in the transformation of communications from a luxury to a daily tool, accessible to workers, student and those having a limited disposable income.

### 3.2.2 Why mobile?

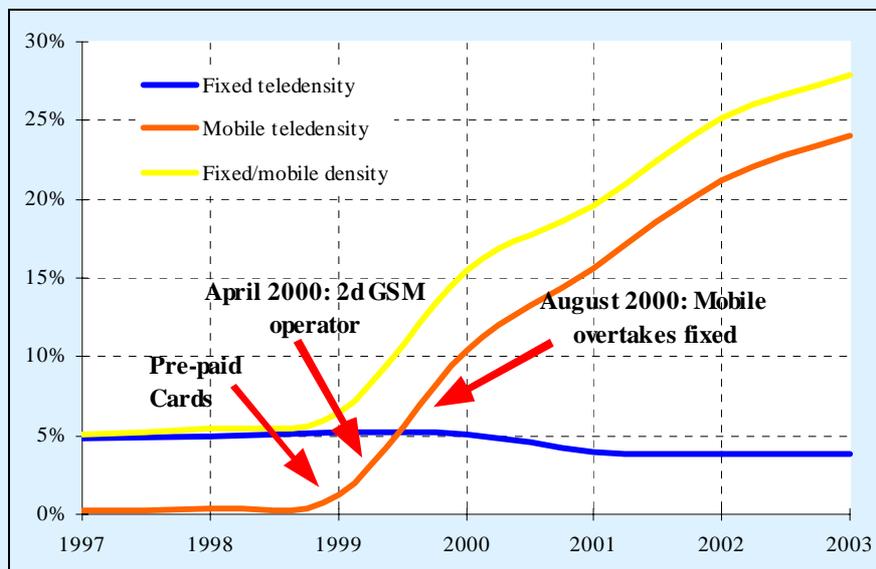
On the basis of the user profile described in the preceding paragraph, it is possible to conclude that the needs of the Moroccan user call for telecommunication services to be accessible without the need to invest heavily in the equipment, to pay a connection fee and a monthly subscription. The cost of the service should be limited, and, more important, it needs to be under control.

When the mobile phone first appeared in the Moroccan market in 1994, it was initially considered — as in many developed countries — a luxury, and was used mostly by a small number of business users, which could afford the then quite high cost of the connection and monthly subscription charges. In fact, in 1999, 50 per cent of mobile users had an average revenue per month between DAM 5,000 and 20,000 (USD 510-2,200) — compared the minimum wage in Morocco of about USD 150/month. Even for these users though, the utilization of mobile services was in most cases limited to 1 or 2 calls a day, while just 16,5 per cent used the phone for more than ten calls every day.<sup>20</sup>

The impact of mobile technology was therefore limited, and the waiting list for main lines, amounting in 1996 to about 48,000 people, did not decrease significantly until the end of the nineties, following the spread of mobile phones.<sup>21</sup>

Revision of the telecommunication law in 1996/1997, and the prospects of liberalization introduced as of 1999, induced Maroc Telecom to differentiate its products and to start offering pre-paid subscriptions. Prepaid cards appeared on the market only a few months ahead the entrance of the second mobile operator, offering end-users the possibility of having a phone for just a small initial investment, without having to pay monthly subscriptions.

**Figure 1: Mobile user growth, 1997-2003**



Source: ANRT Report 2001 and 2002, interviews with ANRT.

The number of mobile users began to grow, exploding a few months later, when the second operator started to offer its services (see [Figure 1](#)). Since then, a multiplicity of offers appeared on the market: prepaid cards, special solutions for enterprises, and the possibility of controlling usage thanks to monthly caps and web accounts.

Furthermore, to overcome the problem of the high cost to the handsets, both operators began subsidizing the purchase of mobile terminals, offering start-up packages which included a telephone handset, connection and SIM card for a fraction of the real price. In the mobile communication industry, mobile handset subsidy is used as a key marketing strategy to attract consumers and to promote market penetration, lowering the cost of the subscriber's entry to the mobile service market.

Subsidization is in fact intended to induce new subscriptions from potential users, entice users to migrate from other carriers, and to help a subscriber replace his/her old handset with a new one — some of the top priorities for new carriers. In the case of Morocco, considering the small size of the market at the end of the nineties, both operators were struggling to attract new customers, the number of clients being a key driver of revenue. Mobile handset subsidy therefore became a direct method of competition.

In Morocco — as in most other countries — mobile communication carriers offer such subsidies as part of a contract that includes an obligatory subscription period. The carriers then recover their subsidy by means of

the subscription fee, the basic monthly charge and/or the airtime service rates during a customer's obligatory subscription period.

This solution presents its shortcomings, as it raises the cost of acquisition of a client for the operators. Furthermore, although it engenders a fast growth in the number of mobile customers, this does not always entail a regular increase of the utilization of the service and does not guarantee the progress of the average revenue per user (ARPU) (See [figure 2](#)). Furthermore, terminals cheaply acquired in Morocco, were often re-sold in the European market at a higher price.

**Figure 2: Total number of users and ARPU**

*Although the number of users has been growing in the past 4 years, the Average Revenue Per User (ARPU) has been decreasing.*

Year	1999	2000	2001	2002	2003
Total number of mobile users	363'720	2'852'139	4'775'592	6'198'470	7'364'125
Mobile ARPU (USD)	353.27	152.37	133.97	131.17	n.a.

Source: ANRT

Once those operators that offered subsidies reached a certain balance, they began diminishing the subsidies, which sometimes represented as much as 80 per cent of the total price of the mobile handset. Today, operators are more concerned with the problem of creating a “faithful” client-base and with increasing the utilization of mobile phones so as to raise ARPU.

The number of mobile users grew from less than half a million in 1999 to 7 million in October 2003, bringing mobile penetration in the country to about 23.4 per cent (see [Figure 1](#)). But these figures can be misleading, when all factors are taken into account. While there are about five times as many mobile users as fixed line users, telephone traffic shows a different picture, with one half of total calls still passing through the fixed network.<sup>22</sup> This can to some extent be explained by the trend for purchasing “per-minute” calls and by the large proportion of users with an irregular income.

### 3.3 Mobile operators and services

#### 3.3.1 Maroc Telecom

Since the entrance of the second GSM operator in the market, the number of services offered by the historical operator Maroc Telecom<sup>23</sup> has multiplied. The company, which has retained a monopoly on fixed services, is focusing on technological progress, striving to present innovative services and applications. Maroc Telecom offers a wide choice of mobile handsets, domestic and professional services, and has currently launched its GPRS service, to address the needs of more demanding customers and offer roaming for GPRS users. With the opening of the market to competition in 2000, the company at least partially abandoned its “public service” behaviour to become more dynamic and market-oriented.

The historical operator began to advertise its products with very effective marketing campaigns, and followed its competitors into the diversification of offers and prices, to address all possible level of users. Nevertheless, the company is proud of its past, and feels they are more than a commercial enterprise, as they consider their users not only customers, but also citizens.

The distribution network of Maroc Telecom is based on shops and selling points the company established all around the country. Maroc Telecom shops are directly controlled by the operator, and therefore guarantee a certain degree of competency and preparation.

#### 3.3.2 Médi Télécom

Médi Télécom<sup>24</sup> entered the country with a dynamic strategy and an aggressive market approach. It began providing its services in April 2000, eight months after the acquisition of the licence, and with coverage limited to 40 per cent of the population. The launch was nevertheless successful, and thanks to Méditel’s massive investment programme — DAM 6 billion (more than USD 440 million) in 4 years — they quickly extended their coverage to 95 per cent of the population, and reached, less than one year after the launch, 1 million users.<sup>25</sup>

To be able to compete with Maroc Telecom, Méditel decided to adopt a different distribution organizational strategy, and instead of dealing directly with clients, it preferred to have a series of local wholesalers and distributors. As a result, the company benefits from an extensive distribution network, reaching every corner of the country.

Morocco Telecom currently dominates the market with 74 per cent of users, against Médi Télécom's 26 per cent. However, these figures change when looking only at the post-paid part of mobile users. Here, the two companies account for 60 and the 40 per cent of the market respectively, with Médi Télécom advancing rapidly.

Furthermore, Médi Télécom claims that the data provided by Maroc Telecom can be misleading, as the incumbent is not correctly counting the real number of subscribers, which, in the view of the new operator, is clearly over estimated. For this reason they maintain that the total number of subscribers in the country is lower than declared, and that Maroc Telecom do not have market-share that it claims.<sup>26</sup>

### 3.3.3 Mobile services

Both operators currently offer three main solutions for mobile users: a subscription for private users; prepaid cards with different tariff plans; and offers specifically aimed at businesses. Additional services are offered to allow easier control of telephone bills, through usage caps, baskets and web-based billing.

Mobile services are becoming more client-oriented in comparison with the period before the entrance of Médi Télécom, and competition is based on the prices and additional services offered, more than on the infrastructure or the technology. In a survey conducted by the regulator in 2000, users were not particularly concerned about the limited choice of services, but more about the billing system, asking for transparent bills, easier payment methods, and the possibility — in case of controversy or delay on the payment of bills — not to be cut off immediately.<sup>27</sup>

Mobile answered to all these needs, and individuals passed from buying per-minute fixed calls in Téléboutiques to buying prepaid cards for mobile telephones

- *Prepaid cards: Buying per-minute mobile calls*

Prepaid cards enabled users to access communication services without the need to subscribe to a contract and pay a monthly fee, and to scale their usage and expenses according to their needs and means. Furthermore, the utilisation of prepaid cards avoided the problems caused by a sometime unclear billing infrastructure.

The launch of prepaid took place in 1999, when the incumbent operator, feeling the pressure of the imminent opening of the market, began to differentiate its services. With the entrance of Méditel, a new wave of packages and tariffs inundated the market. Today both operators are offering prepaid either as a part of a “package”, which includes a cell phone at a favourable price, a SIM card and some credit; or simply as a SIM card.

This system is able to address at the same time the need of small and larger users, allowing to the former to buy recharge cards for a very small amount of money, and to control completely their expenses, and the latter to dispose of a large credit, but without the need to pay a monthly subscription, and with a good choice of price plans.

The strategy implemented by operators brought results almost immediately: the number of mobile users grew threefold from between 1998 and 1999, literally exploding in 2000, when Morocco passed from less than 400,000 to almost 3,000,000 mobile users (see [Figure 1](#)).

This “quick fix” has, however, effectively cannibalized the market for contract subscriptions, and could be detrimental to the medium and long-term growth potential of contract subscriptions. The percentage of prepaid mobile users stood at around 96 per cent in 2002, and the trend does not seem to be changing, with a growth of some four per cent between 2001 and 2002. The number of post-paid users amounted in 2001 to a total of 283,313.<sup>28</sup>

This cannibalization of the contract market may have a lingering effects on the balance between prepaid and contract users over the next years, and the operators are currently struggling to attract high-revenue prepaid customers, including many business customers, to switch to contract subscriptions, offering special rates and tailored solutions

**Box 2: Small cards for small users**

*Below: Jawal Jeune (Prepaid card for youth)*

Recharge	National calls			
	Peak rate			Off-peak rate
	To GSM IAM	To fixed phone	To another GSM operator	To GSM IAM, Fixed, or other GSM operators
<b>20</b>	3 min	3 min	2 min	9 min
<b>50</b>	7 min	7 min	6 min	23 min
<b>100</b>	16 min	16 min	14 min	52 min
<b>Simple</b>	35 min	35 min	30 min	114 min
<b>Double</b>	56 min	56 min	48 min	182 min
<b>Maxima</b>	139 min	139 min	119 min	456 min

*Below: Pre-paid users and total number of mobile users*

	1999	2000	2001	2002
<b>Total Mobile Users</b>	369'174	2'342'000	4'771'739	6'198'670
<b>Mobile Users - Prepaid</b>	155'293	2'107'800	4'294'565	5'914'906

Source: Maroc Telecom Website [www.iam.ma](http://www.iam.ma); ITU.

Meditelcom entered the market with a strong commercial strategy. Thanks to the expertise of the two main partners, the company addressed the problem of users' budget, selling prepaid cards at DAM 20 (about USD 2.30) which in fact allow only for 2-3 calls of a few minutes, but are used by young people and students. Maroc Telecom followed the competitor, and is currently offering small recharges, however they believe that this strategy will not bring to the growth of the Moroccan mobile market, but on the contrary will pull the market toward the lower margin, instead than pushing to the diffusion of subscriptions and to a more regular utilization of this technology.

Recharges are available either in the form of cards which can be bought in any selling point, or directly at the Méditel shop, where there is a larger choice of possible amount of recharge.

More recently it became possible also to recharge the telephone at the bank, using ATM. But this service is in its early stages, and is not yet offered by all banks. Although the price of mobile communications with prepaid cards is higher compared to the price of calls with a subscription (see table), prepaid is largely more successful, probably thanks to its flexibility and the variety of possible offers.

Price plans are mainly based on the different usage pattern of customers. Two main plans are offered by both operators, one directed mostly to young people and those using the mobile more in their spare time, evening and week-ends, the other more classical for people calling regularly, also during working hours. Besides this, operators are often providing special prices for calls to people belonging to the same family or to a preferential list of people established by the user, as in the "Family and Friends" plan offered by Méditel. This brings us back to the importance of family and communication in Morocco.

Using prepaid cards almost all services are accessible. Special numbers for information, download of logos and ring tones, international calls. Recently, roaming has also been allowed for prepaid users, although in a limited number of countries.<sup>29</sup>

It is worth noting that there is a good potential for roaming in the Moroccan cellular market. The country has adopted GSM standards, as have its neighbours and European countries. Foreign visitors to the country, Europeans in particular, can therefore benefit from roaming, providing an additional source of revenue for operators. In fact, the first foreign operators with whom national companies have concluded roaming agreements are European.<sup>30</sup>

In addition to the tariffs applied, telecommunication companies often offer promotional rates and special tariffs during different periods of the year, usually in connection with religious festivals. For example, during the period of pilgrimage to the Mecca, in Saudi Arabia, pilgrims had the possibility of calling and being called at preferential rates, while during the period of the *Aïd el-Kébir* for each recharge, the user would receive the double in minutes of communication.

The disadvantage for users of prepaid cards, however, is that the prices are considerably higher than with a normal subscription, as can be seen in the Box 2. Furthermore, while tariffs are applied by second, after the first minute of use,<sup>31</sup> for subscription contracts, with prepaid cards they are applied per fractions of 20 seconds.

This means that while prepaid, coupled with handset subsidization and largest choice of tariff plans, have indeed heavily contributed to the development of mobile technology in Morocco, in the long term they risk

to hold back the growth of the ARPU, and therefore the growth of the market. It is estimated that the ARPU for prepaid is less than DAM 100 per month, against about DAM 350 per month for subscription-based users. Prepaid is therefore a double-edged solution for operators, as it increases the user base but limits the usage, and reduces the risk of default, at the same time slowing down the creation of a “faithful” client base. Furthermore, the development of advanced mobile services and applications — such as WAP and GPRS — which are usually offered on a subscription base, may be hampered.

*- Subscriptions for private users*

Although at the end of 2002 mobile subscriptions were less than 300,000, representing only 4.6 per cent of the total number of subscriptions, this fragment of the market is evolving.

The cost of connection and monthly subscription has been substantially decreasing after the beginning of competition (in 2000 the price has dropped three times). Today the two mobile companies are proposing the same prices: DAM 100 for the initial connection and DAM 125 per month for the subscription (not including any communication time).

**Table 3: Mobile tariffs**

*Examples of mobile tariffs (prepaid and post-paid) compared to fixed tariffs in Morocco for a three-minute call\* (off peak and peak time)*

<b>From To</b>	Fixed Line "Classic"	Mobile MediTel "Personnel" Monthly subscription DAM 125	Mobile Maroc Telecom "Classic" Montly subscription DAM 125	MediTelecom Pre- paid "Médijahiz classique" (1)	Maroc Telecom Pre-Paid "Jawal Classique" (1)
Fixed Local	<b>1.35</b>	<b>3-6</b>	<b>3-4.5</b>	<b>6-16.5</b>	<b>9</b>
Fixed National	<b>3</b>	<b>3-6</b>	<b>3-4.5</b>	<b>6-16.5</b>	<b>9</b>
GSM IAM	<b>6</b>	<b>3-6</b>	<b>3-4.5</b>	<b>6-16.5</b>	<b>9</b>
GSM Meditel	<b>6</b>	<b>3-4.5</b>	<b>3-6</b>	<b>6-9</b>	<b>12</b>

(1) First minute and then blocks of 20 seconds  
 \*Peak hours are from 8h00 to 20h00, from Monday to Friday. From 20h00 to 8h00, on week end and festivities tariffs are off peak. Meditel consider off-peak lunch-time (12h00 to 13h00/14h00) for calls going to other Meditel users.

Note: prices for prepaid also depend on the type of tariff plan applied (youth, classic, etc).

Source: ANRT Report 2002; Méditel Website <http://www.meditel.ma/>; Maroc Telecom website <http://www.iam.ma/>.

Customers who choose the subscription option, can benefit, depending on the duration of their contract, from a higher subsidy on the purchase of the mobile handset, which sometimes is provided at no cost, but also of a series of extra services, which address users’ concerns relating to the administration of their telephone bill.

There are in fact two main choices of subscription, one more classical, with payment at the end of the month, the other one working as a sort of prepaid system, with a fixed monthly cost, which include a certain number of minutes of communication. This solution is called “forfait” (basket) and it can have a price cap — therefore after the utilization of the included minutes it will be possible only to receive calls — or be open, so that additional time is added to the bill.

This “forfait” gives users the possibility to tailor the service to their needs, ranging from half an hour a month to 15 hours a month. The price of communications obviously decreases as the forfait selected increases. Also, once the forfait has been exhausted, users can still benefit from the same amount of minutes for communication during off-peak time to telephones of the same operator.

The need to control the budget and increase transparency is also addressed by classical subscriptions, which offer the possibility of obtaining detailed bills, to limit outgoing or incoming (when abroad) calls, etc. An option for families is also offered by Méditel. With this solution, users from the same family can enjoy discounts on the monthly subscription, lower rates for intra-family calls, and they can also receive a single bill for all the family phones. Furthermore, caps can be placed on the monthly consumption, to limit the budget of, for example, a teenage son.

### - Enterprise

Private and public companies are one of the main targets of mobile operators. Here too, offers are characterized by the reduction of monthly subscription, lower prices for intra-company numbers, transparent billing and the possibility to control the monthly consumption. Méditel with its NeO offers a complete system which allows a company to directly administer its telephone “fleet” controlling the expense of each users, blocking or unblocking their telephones.

In order to offer its business clients a less expensive way to call Méditel phones from their fixed office terminals, with its “Optimum” package, Méditel proposes the installation of a Link Optimisation Box (L.O. Box), which serves as a gateway between their GSM network and a company’s private branch exchange (PBX). When connected to a PBX, the terminal can route incoming and outgoing calls via the mobile telephone network, transforming a fixed-to-mobile call to a mobile-to-mobile call, and diminishing (or eliminating, in case of intra operator calls) the cost of interconnection. Fixed-mobile interconnection in fact is particularly disadvantageous for the mobile operators: Medi Télécom considers that about the 58 per cent of the revenues go to the fixed operator, and only the 42 per cent to the mobile operator, while mobile-to-mobile interconnection rates are lower than in European countries.<sup>32</sup> This system would allow users to call from their office phone to a Méditel mobile, saving about 40-50 per cent of the final cost of a fixed-to-mobile call.<sup>33</sup>

Maroc Telecom opposed the commercialization of the LO Box on the grounds that it would constitute unfair competition, as it would divert traffic from the fixed network. The ANRT recently took a decision on the matter, arguing that the L.O. Box merely constitutes an interface between the GSM network and terminals otherwise connected to the fixed network. In this view, utilization of this interface cannot be considered unfair competition in itself, as it is simply an economical solution for users, who can benefit from the cheaper tariffs for intra-network mobile phone calls rather than paying more for fixed-to-mobile calls. Nevertheless, the regulator decided that the operator could not subsidize the acquisition of such equipment, nor link usage to special discounts and tariffs.<sup>34</sup>

Maroc Telecom has a more classical approach, proposing two different packages, one with 10 hours of intra-company communication included in the monthly subscription, the other simply allowing lower costs for calls among mobile phones of the company. Here too transparency of billing and the possibility to limit outgoing calls of dependents are among the main services offered.

### **3.4 Mobile applications**

Mobile phones are mainly used for voice communications, and the development of data applications is still at an early stage. Furthermore, the limited budget users are willing to spend in communication services, and the low rate of mobile subscriptions, limit greatly the development and diffusion of more advanced technologies and applications.

Currently, the most successful service for mobile users seems to be the download of logos and ring tones, and a large variety of different tones could be heard while walking in the streets. Information services are being developed, with Méditel and Maroc Telecom offering SMS Info-services, which allows to access up-to-date information relating to cinema, train time tables, or the daily prayer timings. SMS revenues amount to about four per cent of the total revenues of the operators.

Initially, to obtain information it was necessary to send a certain message-code to a give number,<sup>35</sup> while today Méditel has implemented a short number for information, \*111#, which gives access to an interface similar to the one used by GPRS-WAP services. The number is common to all services, and the choice of the information provided in a menu on a common platform, which can be easily accessed by all users. Once a given service has been selected, the information is received immediately via SMS. The cost of the service is DAM 0.80 (USD 0.09), the same as a normal SMS.

WAP services, as in many other countries, did not have much success, with about 600 users in total. The problems were much the same as elsewhere, i.e. the limited speed, the cost, and the absence of appropriate content. Furthermore, in Morocco, the development of content, in particular in Arabic, is still at a very early stage, for both mobile and Internet services.

Recently MMS services have also been launched by Maroc Telecom. In 2003, trial services were offered for free, costing the price of a normal SMS as from January 2004. A certain number of free MMS are also included with the subscription of a “*forfait*”.

The latest service to be launched is GPRS. After a trial period of several months, today Maroc Telecom is offering GPRS services (100kbit/s) to its subscribers, for a price amounting at about USD 60 for 20 Mbit/s, or USD 100 per 60 Mbit/s. One Mbit/s is offered with the subscription of one of the “*forfait*” for mobiles.

The diffusion of these services is however very limited, considering, again, not only the cost involved in their utilization, but the reduced number of post-paid users, today amounting at slightly more than 300,000, which usually include mostly enterprise and business users, and not young people and students, who are more keen in using innovative services. As the market is so small, there are doubts about their profitability, at least for the moment. Representatives of Maroc Telecom are nevertheless quite positive, and affirm that innovation is fundamental, to keep apace with European countries, provide a larger number of options to users, and to be able to provide updated services to foreign visitors roaming in the country. Furthermore, developments of this kind reinforce the image of Maroc Telecom as a modern operator and innovator.

### Box 3: Mobile phones for everybody: A fashion handset for women and special services for pilgrims

Mobile services, more than fixed ones, adapt to the needs of the society, offering a large number of services and features to adapt to the culture, society and economy of a country.

As mentioned before, pre-paid has been an important factor for popularisation of access to telephone services. As prepaid constitute the 96 per cent of the total number of users, several services, normally reserved to post-paid subscribers, are offered also on a pre-paid basis. This is the case, for example, of international roaming, which is offered to pre-paid users in a limited number of countries.



Services	Commandes
Change	CH + code devise (voir tableau1) Ex : pour le cours du Dollar Américain CH USD
Bourse de Casablanca	Pour les cours: BO + Code de l'action (voir tableau6) EX: BO ONA
En Temps réel	Pour les cinq plus fortes Hausses et Baisse: BO HB
Dépêches	DE
Football	FO + Code de division (GNF1 ou GNF2) Ex : pour le résultats de la dernière journée de la première Division: Fo GNF1
Horaires de Prière	PR + Code Ville (voir tableau2) Ex : Pour les horaires de prière de la ville de Casablanca: PR CA
Météo	ME + Code Ville (voir tableau2) Ex : Pour les prévisions météorologique de la ville de Rabat: ME RA
Programmes TV	TV + Code Chaîne (RTM, 2M, TV5, ARTE) Ex : pour les programmes de 2M : TV 2M

Mobile services and applications are also addressing specific features of the society. For example, besides information services regarding trains or weather forecasting, the two Moroccan operators are also providing prayer timing by SMS (figure above). Also, to deal with the need of pilgrims going to the Mecca to communicate with their families back home, a special service was launched during the Haj, allowing international roaming to pilgrims in Saudi Arabia at special tariffs.

Women constitute an emerging sector, they are more and more involved in the business and economic life of their country, and a mobile phone is essential for them as they often have to manage not only their professional carrier, but also their family and children. In occasion of the International Women's Day of 2003, Méditel put on the market a new model of mobile phone, specifically studied for women. The handset has a fashionable case and include features such as calculation of ideal weight, calorie count, etc



Source: L'Economiste <http://www.leconomiste.com/dossiers/dossier.html?d=6>; Méditel and Maroc Telecom web pages.

The provision of enhanced, or value-added, services has been liberalized since the beginning, therefore several companies are today providing services to mobile and Internet users. Many small enterprises are concentrated in the Casablanca Technopark, a modern building situated in the outskirts of Casablanca. This infrastructure is managed by the private company Moroccan Information Technopark Company (MITC), owned by the Ministry of Industry, Transport and Communications, and by several Moroccan banks. It has been created to provide small and medium enterprise and start-ups basic services and infrastructure to initiate their activity.

Among the different companies based at the Technopark, there is Allo Maroc, which offers ring tones and logos for mobile phones, and Passworld, a small start-up which for the moment is developing mobile content for French operators, but is also working with Maroc telecom to develop mobile applications using GPRS, WAP, MMS, etc.<sup>36</sup>

Other services over mobile telephones are currently being provided by several companies. In particular, banks have started providing a sort of "alert" services, to inform clients of the balance of their account, or

when they reach a certain ceiling, when they receive a payment, etc. All of these services are provided by SMS and are therefore accessible to all users, post and prepaid.

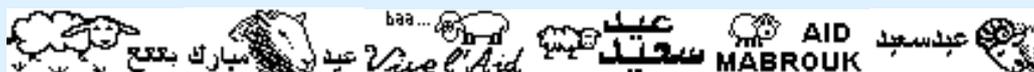
More advanced services are those provided using WAP. With these, users can consult their accounts, book train tickets, check the stock market, and so on. However, WAP services and portals did not take off well, partly because of the scarcity of appropriate content, the price of the service, and the relatively poor quality, but also because of the lack of awareness in the population, which is more used to voice services than to data.

With the development of new technologies, the world is moving towards the mobile Internet, and Morocco will not be left behind. The government and the operators are carefully observing the evolution of the market in European countries and preparing to deploy their GPRS and UMTS services in the future. Access to information and content has been improved thanks to the utilization of GPRS, and therefore the provision of WAP-GPRS services. Many small companies are currently working with mobile operators to provide information and entertainment services to mobile phone users.

#### Box 4: Online services for mobile

Mobile entertainment is still quite limited in the country. In the last months, however, the diffusion of services to provide logos and ring tones increased, and there are today several websites and companies providing logos, images and ring tones for mobile phones.

For the moment the quality of the content is still limited, logos are in black and white, and ring tones only monophonic. However new developments are awaited, as the diffusion of more advanced handset will increase the demand of improved sounds and images. (below, examples of logos offered during the festival of the Aid).



The Credit du Maroc is currently one of the banks providing SMS services to its clients. Subscribing to the “Bip Bip” service bank customers will have the possibility to receive information on their account by SMS in almost real time.



A more advanced service is being provided by BMCE bank, which launched “Librity”. This service, initially provided only to Méditel users, will be extended also to Maroc Telecom customers by March 2004.

“Librity” allows users to access a number of services either by SMS or by mobile Internet, under the payment of a monthly subscription. The amount of the monthly fee varies depending on the services needed, and goes from DAM 45/month for basic SMS service, through which one can receive information about its credit account or book train tickets, to DAM 120/month for WAP over GPRS services, allowing users to access also real time information about the stock exchange, and receive automatic stock exchange “alerts”.

Source: Credit du Maroc <http://www.cdm.co.ma/> and BMCE Librity webpage <http://www.librity.com>. Logo and ring tones: <http://sogo.meditel.ma/>

Mobile applications and services could also be particularly useful in the business-to-business sector. Considering the low diffusion of the Internet, mobile phones allow companies to communicate with their agents, and could also be used to transfer information and data. An example is a service use by a pharmaceutical company to manage its sales team. As agents often travel to visit doctors and surgeries, it is sometimes not easy to obtain information as they go about their work. With mobile phones and the utilization of WAP, the company set up a system through which sales managers travelling around the country are able to consult their timetable through WAP, and also to update the company database directly through their mobile phone. In this way the company is informed in real time, saving about two weeks, i.e. the average time needed to wait for the agent to come back, deliver a written report, enter it in the database etc.

Having two operators in the field of innovative applications and services does have a drawback though. This is the low number of subscriptions. The two operators are also trying to reach the prepaid market. For this reason, services such as international roaming, initially reserved only to subscribers, have been extended, although in a limited way, also to prepaid users.

Both operators are also providing a large choice of mobile telephone handsets, which go from the simpler models (monochrome display) to those with coloured screen, digital camera, or the possibility to use text in Arabic (see [Box 4](#)).

## **4 The impact of mobile**

### **4.1 Morocco on the move**

As mentioned above, the spread of mobile phones has had an important impact on Moroccan society from social, cultural and economic viewpoints. Mobile communication has answered the traditional need of this society to communicate orally, providing users with a new means of getting in touch anytime, anywhere.

In the nineties, *Téléboutiques* helped to achieve universal service objectives, bringing telephones within a “reasonable distance” and allowing affordable access to phone services. Today, the mobile phone constitutes a further step, bringing communication services closer to individuals.

Besides the major cities, there are numerous smaller towns and villages which do not always enjoy the same degree of connectivity. For this reason, mobile was a good answer to network problems, considering the ease with which an antenna can be installed and the territory it can cover. An extensive mobile network has been developed by the two companies, now covering the almost the totality (about 95 per cent) of the population.<sup>37</sup>

This, together with the offer of prepaid card and the lowering of communication costs, has led to a popularization of telecommunication services, hitherto limited to a small fraction of the population. Today, the country enjoys a telecommunication penetration rate well above the regional average: at the end of 2002 effective teledensity in Tunisia and Egypt were barely above 11 per cent, Algeria stood at 6.10 per cent, as compared with 21 per cent in Morocco.<sup>38</sup>

### **4.2 Mobile-fixed competition?**

The mobile phenomenon in Morocco has interesting characteristics, which differentiate it from the typical development of mobile communications in industrialized countries, and show a potential of mobile services to be, since the beginning, an instrument for social and economic development, and not just a tool for businessmen and women, or for the higher classes of the population.

As mentioned above, this has been possible thanks to the introduction of competition and the consequent differentiation of offers and lowering of prices, so that today in Morocco many mobile subscribers are low-paid workers or farmers, for whom access to communication services was once limited to *Téléboutiques* and public payphones.

#### **4.2.1 A special usage pattern**

The original development of mobile services in the country is reflected in the usage pattern. The average user in Morocco brought their handset as part of a package — therefore at a very low price — which included a prepaid SIM card. The telephone is therefore mostly used to receive calls, outgoing traffic is limited to urgent/important matters, while normal calls are still going through the fixed network, often using a *Téléboutiques* or a public pay phone. This is the reason why also the new mobile operator is willing to enter the *Téléboutique* business (see [Box 5](#) “mobile phone shops?”).

This explains also why, although mobile phones outnumber fixed ones, the largest part of the revenues for the incumbent operator — which still has the monopoly in this market — still come from the fixed network.<sup>39</sup> At the same time, however, the number of fixed phone subscriptions has been decreasing in the past few years, showing an interesting relation between fixed and mobile services.

Looking at tariffs and offers, it is easy to note that it is more convenient for many users to have a mobile phone subscription, rather than a fixed one, considering the price of calls per minute. While local calls (calls

under 35 kilometers) are still more convenient on the fixed network, tariffs for national calls and fixed-to-mobile are quite high, and compete on an equal footing with mobile service, which, thanks to the different options and price-plans, can be a viable option, in particular in the mobile-to-fixed segment. While a three-minute fixed-to-fixed national call can cost about DAM 3, a mobile-to-fixed call may cost up to DAM 6 or even DAM 9, depending on the time of the day. With a mobile phone, the cost, with a normal subscription, will go from DAM 3 to 6, and be even lower if preferential tariffs are applied (for example, with Méditel “*Nous*” (Us) a mobile-to-mobile 3-minute call can be about DAM 1.5).

The price of mobile services, however, increases dramatically when looking at prepaid cards. In this case, a three-minute call may cost from DAM 5.5 (USD 0.6) to 22.5 (USD 2.5), depending on the operator called, the time of the day, and the price plan applied. As mentioned above, prepaid cards constitute the 96 per cent of the total number of mobile users in the country. Therefore, while subscriptions are indeed important, in particular for business users and enterprises, prepaid tariffs apply to the large majority of users.

For this reason it is understandable that the traffic going through the mobile network is still limited, and it seems that most of the calls are originated by the fixed network. This confirms that mobile phones are mostly used to receive calls, and as long as the cost of telephone calls with prepaid is so high, it will be difficult to convince users to increase their outgoing traffic. On the other hand, an effort should be made to increase the part played by subscriptions in the market. This is likely to be more difficult, however, given the budgetary problems of the average user, and the habits of the population, which is more used to the *Téléboutique* model than to fixed home usage.

In a positive move though, the new entrant was recently granted direct international connection, without being obliged to pass through Maroc Telecom, which nevertheless retains its monopoly on international fixed service.

#### 4.2.2 Transforming fixed in mobile and vice versa

The situation in Morocco was not intended to be a lasting one. Competition and liberalization were supposed to be implemented step by step, and the second licence for fixed communication services should have been assigned by 2003.

This prolonged situation of competition between mobile operators, caused by delays in the liberalization process, is exacerbating competition between fixed and mobile operators, the former claiming that their user-base is being cannibalized, but still with most of the traffic going through their network, the latter having a huge client-base, but struggling to increase ARPU.

The result is a complex series of strategies, ranging from the launch of “LO Box” by the mobile operator, to increasing the amount of traffic originating from the mobile network — exploiting the high fixed-mobile interconnection rates — to the creation of GSM *Téléboutiques* (see [Box 5](#)). At the same time, the fixed operator is gradually transforming its services to adopt some of the features of mobile prepaid.

##### **Box 5: Mobile phone shops?**

Considering the success of *Téléboutiques* and the delays in the liberalization of the fixed telecom market, MediTelecom recently decided to establish its own *Téléboutiques* in the country. This choice could be viable, as a large number of inhabitants still has no other access to phone services than through phone shops and mobile calls—in particular if directed to users in the same network — can have a competitive price.

This possibility is currently under discussion, as the incumbent operator is opposing the concurrent initiative. In their view, this service is not included in the GSM licence, which only for “mobile” communications, while the service they are aiming to provide is fixed. Médi Télécom defends its position, saying that in any case calls pass through the GSM network, and the fact that the user interface (the telephone) is fixed does not have any relevance.

Médi Télécom is currently launching its *Téléboutiques* which should be operating by the end of the first semester of 2004.

In fact, the effect of competition between mobile services is affecting the prices of fixed ones. Since the entry of the second operator, fixed prices have been lowering, and recently Maroc Telecom (fixed) has started differentiating its services and implementing market strategies similar to those used for mobile phones.

For example, as the packages had good success in the mobile market, today it is also possible to buy packages for fixed phones, comprising a fixed handset, connection and a number of minutes per month. Billing is clearer and more transparent, and there is the possibility to have voluntary usage caps, so that the monthly bill will be limited to a pre-determined amount. Furthermore, wireless handsets are spreading in the country, and are offered as part of packages.<sup>40</sup>

### **4.3 The economic impact of mobile communications**

The liberalization of the telecommunication sector, the entrance of foreign investors, such as Vivendi Universal and Telefónica of Spain, and the consequent development of the telecommunication market, had a direct impact on the Moroccan economy in terms of increase of the direct foreign investment, employment growth, and development of new business opportunities in the sector. Also, it had a more indirect influence on the external image and perception of Morocco, and the business society in general, opening new possibilities for business and giving traditional occupations new tools and new means of operation.

#### **4.3.1 Direct impact**

The telecommunication industry has an important role in the overall national economy. In particular, since liberalization in 1997, this sector gathered about 66 per cent of total foreign direct investment in the country, against just 14 per cent by industry and three per cent by commerce and real estate.

This growth was mainly due to the sale of the second mobile licence in 1999, which brought the Government about USD 1.1 billion, and the sale of the 35 per cent of Telecom Maroc stakes to Vivendi Universal, for an amount corresponding to USD 2.3 billion.

Furthermore, both the incumbent operator and the new entrant engaged in a series of expenses to modernize and develop their network and services. Maroc Telecom has planned an investment of DAM 11.5 billion for the period 2001-2005, to be shared between fixed, mobile and Internet services, while on its side Méditel has invested DAM 4 billion since it began its operation, with a further DAM 2 billion foreseen by the end of 2004.

This growth has its first impact on employment rates. Besides the 14,000 Maroc Telecom employees and the 750 of Médi Telecom, it has been estimated that telecommunication services provide work for about 60,000 people in the country. One of the primary sources is indeed the system of *Téléboutiques*, which employs a large number of people. Although the percentage of profit in this business is very small, it requires a relatively low level of investment, enabling a family to make its living.

Furthermore, the entry of Médi Telecom in the market also developed the distribution business. The company in fact decided to delegate most of the distribution of its products and services to a small number of larger wholesalers, which then manage — directly or indirectly — a network of about 5,000 shops and sales points, which can be home shops, sub-dealers or simple franchisees. To this number should be added the 600 Méditel shops directly controlled by the company. They calculate that for these related activities alone, between 5,000 and 6,000 new jobs have been created. The company is also providing its distributors and vendors with some background and training on the product, increasing their professional skills.

The increase in the mobile market has also encouraged some of the major handset manufacturers, such as Ericsson and LG Electronics, to establish a branch in the country, and the creation of several customer service points, contributing to the development of the telecommunication business.

The growth in mobile services has therefore provoked a growth of revenues for companies operating in the telecommunication sector. Business associations of the sector have estimated this growth at around 10-15 per cent.

#### **4.3.2 Indirect impact**

In addition to the direct impact on the Moroccan economy, the development of mobile telecommunication has also had an indirect influence on the creation of new business opportunities, improving the image of the country abroad, and catalyzing further investments.

The quality and the cost of telecommunication services are in fact one of the elements evaluated by a company wishing to establish its business in a certain country and are a lever for investment return. Furthermore, the high level of investment Morocco was able to draw with the sale of licences, put Morocco

in a new light in the international market, and transformed it into a more attractive market for private investors in sectors other than telecommunications.

Some of the related businesses that were established in the country are indeed call centres. Today, there are several companies, such as Dell or the Spanish *Atento*, which operate from Morocco, offering phone services to France, Spain or other European countries. These call centres employ between 50 to 100 staff. This effect is particularly important considering that the unemployment rate in the country is officially 13 per cent, and in reality can reach 20 per cent following periods of drought, such as the one that struck the country in 1999.<sup>41</sup>

Mobile has also changed the way of working for small and micro-enterprises in the country. Thanks to the popularization of access to mobile communications, many craftsmen, daily workers and farmers have become reachable anywhere, have been able to maximize their time and increase productivity. It is more and more frequent to see mobile numbers under the name of carpenters and plumbers, sometimes written over an old fixed telephone number, which is no longer in use.

Here again, mobile phone is bringing about a change in the habits of the population, but it is still seen as a means to receive calls, rather than to make them.

## **5 Conclusions**

### **5.1 Too early for mobile Internet?**

GSM technology has been well received in the country, and now government, regulator and operators are starting to plan the future moves to follow technological innovation and development (see also Box 6).

Telecommunications in Morocco are still mainly focused on voice services. The Internet has only made slowly progress, and the first attempt to provide mobile data services through the utilization of WAP did not meet with the success hoped for — as was also the case in many industrialised countries.

At the beginning of 2004, the incumbent operator, Maroc Telecom, launched its GPRS services, and MMS services are currently available for their users. Following a year of trial, in 2004 the services started to be provided on a commercial basis. The operators recognise that there is not much room for the development of GPRS though, as the number of contract subscribers is too low. With GPRS, the operator will nonetheless be able to provide more complete services for foreigners roaming in the country.

Médi Telecom is not yet at the point of launching its GPRS, although trials are currently under way in Casablanca and Rabat. The company has also said they would rather try to share technology (and costs) with their home company, Telefónica of Spain.

Regarding third-generation mobile services, the situation is still quite static. Operators are trying to consolidate their user-base and increase traffic, and a series of issues still need to be sorted out, in particular considering that by the end of the year an additional licence should be attributed. The type and content of this licence has not yet been defined, and the regulator is currently developing a study to decide if it will be limited to mobile services or be more global in scope.

There will be not concrete action for the moment regarding the development of UMTS, but stakeholders are not totally inactive: while the Government believes that “mobile Internet” as they define it, could provide a good chance to extend data services to more remote areas of the country, the regulator is already planning to begin to free those frequencies that will be needed by third-generation services. However, there are still no plans regarding the licensing for these frequencies.

From their side, operators are waiting and watching the deployment of the service in European countries. The common feeling is that GPRS can be a viable substitute for the needs of the most demanding part of their customer-base, and third-generation services will probably be developed only in three or four years’ time.

Additionally, many companies are today concentrating on the creation of content for mobile communications. One of the major shortcomings of WAP was indeed the lack of content that is readily available and accessible by users. To avoid this situation, more attention has been placed on the creation of new applications and services, and many small companies — such as those based in the Technopark in

Casablanca — are currently involved in these activities. For the moment, most information and services are provided in French, but there is a constant effort towards the development of content in Arabic, and software to allow Arabic font is installed in several models of mobile phones.

#### **Box 6: The future of wireless**

From mobile to wireless, another technology which greatly interest Moroccan public and private sector is indeed Wi-Fi. Although wireless technology is not yet widely diffused in the country, some tests have been carried out in Marrakesh, in occasion of the film festival, and trials are currently undertaken in Casablanca and Rabat.

Furthermore the National Institute for Post and Telecommunications<sup>42</sup> (Institut national de la Poste et des Télécoms, INPT), the national institute for telecommunication, is developing its own Wi-Fi system in the campus. The objective of the project is, on the first stage, to allow all students to connect to the internet from their rooms, while in a second moment the network should also cover libraries, class rooms, etc.<sup>43</sup>

The director of the institute affirmed that wireless solutions are less expensive than wired ones, and that allow more flexibility to students, which are usually using laptop computers, and working, individually or in groups, in different parts of the campus.

The ANRT recently approved a decision establishing the conditions for the installation and exploitation of wireless LAN. For the moment the utilisation of this technology is allowed only indoor, while rules for outdoor wireless networks have not yet been defined.

The potential of Wi-Fi in Morocco, however, lays in particular in outdoor wireless networks, as they could contribute to the growth of access to the internet in particular for rural and remote communities. For the moment the ANRT did not foresee which regime will be applied in this case, probably, however, the utilisation of Wi-Fi will be permitted for certain purposes, but always under the control of the regulator (see ANRT Decision ANRT/DG/N°08/03 of the 25 December 2003 on condition of installation and exploitation of WLAN public access points).

## **5.2 Morocco's keywords: Internet, enterprise and mobility**

The development of ICTs is considered an enabler for social and economic development, and it is therefore considered a priority by the Moroccan Government. Since 2001 government and private businesses gathered to define an e-Morocco strategy, to foster the growth of ICTs in the country and popularize access to communications.

Policy-makers and the regulator are working towards the achievement of three main objectives, which can be summed up as “home”, “mobility” and “enterprise”. As can be noted, the focus is not on the deployment of a particular technology, but on the needs of the country, which will be addressed using the most appropriate and effective tools.

The first objective is to connect households to fixed telephone lines, to allow an easy access to basic telephone services, but especially to the Internet, the utilisation of which is still very limited. In this case the most important characteristics of the service should be affordability, efficiency and transparency in the billing.

More than other sectors, business and enterprise are the sectors that could benefit from the opportunities offered by ICTs, and will be able to transmit these benefits to the country in terms of economic growth and social development. For this reasons the needs of the business sector — private or public — should be addressed by providing a good quality of service, innovative technologies, and interesting price plans.

Last but not least is the need for mobility, and in particular to be reachable anytime, anywhere. This need is addressed by mobile phones, which should become complementary to fixed services, responding to different exigencies. Mobility is more oriented towards person-to-person voice communications, however in these last years services such as information by SMS and mobile entertainment are being launched and gradually developed, although the implementation of third generation services for the moment is part of the middle-term plans.

As it has been pointed out by many interviewees, Morocco is a country open to innovation, and will use the most appropriate technology to address the need of the market and of the society. For the moment it seems

that fixed networks will be dedicated more to Internet and data services, while voice communications will be the focus of mobile services. However, the utility of mobile also for data transmission is not neglected, and could be a viable opportunity in a country where the fixed lines penetration is less than one fourth of the mobile penetration.

The year 2004 has been declared Internet year, and the action of the policy maker will concentrate on the development of internet content and applications, with the government at the forefront to introduce and utilise ICTs in the Government, to allow the emergence of a networked administration, more transparent and accessible to citizens.<sup>44</sup>

### **5.3 Fixed and mobile: complement or substitute?**

The role of mobile telecommunications in Morocco, and their impact on society presents several interesting aspects, which can be common to other African countries. The liberalization of the mobile sector and the situation of monopoly for fixed line telephony create a situation where the only potential threat to fixed line provision is the competition from cellular.

One of the main factors driving mobile growth is *substitution* for fixed lines. There are a number of reasons that make mobile more attractive than fixed. These include:

- Mobile telephone networks can be installed more rapidly than fixed networks, reducing the waiting time for potential subscribers, and reducing unsatisfied demand.<sup>45</sup> At the same time however, the substitution effect between fixed and mobile can slow down the penetration of fixed lines, thereby hindering the development of Internet services.
- The introduction of prepaid mobile cards allows users who might not normally financially qualify for a fixed line to obtain cellular access. Prepaid therefore helps boost access, in particular when coupled with subsidization of telephone handsets. Today more people than ever have access to mobile telephones, however, to fully benefit from cellular technology, mobile phones should be used in conjunction with fixed phones, as it happens in most industrialized countries, where mobile are used to keep in touch with home or office while on the road, and many calls go from mobile to mobile, but also from mobile to fixed. In these cases a large fixed line penetration increase the value of mobile services, one being complementary to the other. In Morocco though, the trend seems to be the different. . Mobile calls are often directed to other mobiles, but a large part of the calls which are terminated on the mobile network are originated from fixed telephones.
- Mobile has greater functionality than fixed, such as the portability, and it includes features that are normally bundled with the mobile subscription, such as the possibility to send and receive SMS, voice mail, roaming abroad, etc.
- The willingness of foreigners to invest in cellular licences. The development of mobile services in the country is also due to the entrance of a new company in the market, formed by local and overseas partners, and the accompanying boost in investment. The strategic partnership established by the incumbent operator also brought in new investment for the development of services. Furthermore, foreign investors have brought in expertise and relations with suppliers that can help cellular networks and services to be up and running quickly and efficiently.

For all these reasons, it seems that mobile is currently a substitute for, rather than a complement to fixed. This situation seems unlikely to change in the near future, since the fixed-line market is still quite unattractive to users, and – particularly given the failure of the second fixed licence bidding process – to private investors too.

### **5.4 Conclusions**

The need to communicate in Morocco, and the openness to new technologies and innovation, have indeed been drivers for the development of mobile communications. However, one of the other major factors helping to boost the development of mobile has been the creation of an independent regulatory agency, the commitment of policy-makers, and the establishment of clear and transparent regulatory environment and processes.

The development of mobile services is, however, hampered by the limited revenues of the population, combined with the still relatively high price of calls (in particular with prepaid cards), and the low percentage of post-paid subscriptions. Also, the growth of the market has been somewhat hindered by the crisis in the telecommunication sector as a whole, which has affected many countries in recent years, and by a period of regulatory uncertainty in Morocco, which has inhibited many operators and companies in the field, and has doused the positive atmosphere which reigned in the late nineties.

As at the beginning of 2004, the situation seems to be on the way to recovery, although there is still some apprehension — from the private sector viewpoint at least — that many good opportunities have been lost, or may be lost in the future if the liberalization process does not accelerate.

The issue of a new licence is a focus of much hope, although the details of this licence have yet to be fully defined. A study is currently carried out by the ANRT in collaboration with an external consulting company to determine the conditions and scope of the licence, and the impact of the deployment of new services in the country.

Mobile phones have already greatly contributed to the extension of universal service, providing a growing number of people with easily access communications services. Mobiles are used for work, to stay in touch with family, to send SMSs, and are becoming indispensable tools in the lives of the women and men of today's Morocco, and mobile services have proven able to answer to the needs of all classes of the population, subject of course, to appropriate prices. Considering the predisposition of the country for ICTs, one can imagine that, with appropriate regulation, sufficient educational support, and the further development of a healthy market, in a few years new mobile technologies, including mobile Internet and value-added applications may also take off in Morocco.

## List of Interviews

M. Rachid TALBI EL ALAMI	Minister of Industry, Commerce and Telecommunications
M. Aziz RABBAH	Ministry of Industry, Commerce and Telecommunications – Information and Communication Technologies <a href="http://www.mcinet.gov.ma">www.mcinet.gov.ma</a>
M. Taieb BENNANI	DEPTI
M. Abdelghani LOUTFI	<a href="http://www.septi.gov.ma/">www.septi.gov.ma/</a>
M. Charif CHEFCHAOUNI	INPT
M. ALLAKI	<a href="http://www.inpt.ac.ma">www.inpt.ac.ma</a>
M. Abdesslam AHIZOUN	Maroc Telecom
Mme. Janine LETROT	<a href="http://www.iam.ma">www.iam.ma</a>
M. Larbi GUEDIRA	Mobile: <a href="http://www.mobileiam.ma">www.mobileiam.ma</a>
M. Ramon Enciso	Médi Télécom
M. Rafael Gomez	<a href="http://www.meditelcom.ma">www.meditelcom.ma</a>
M. Mounir BERRADA	<a href="http://www.meditel.ma">www.meditel.ma</a>
M. Nabil BERRADA	
M. Mohammed BENCHAABOUNE	
M. Rachid SEFRIQUI	
M. Omar MOUDDANI	ANRT
M. Mohamed EL KADIRI	<a href="http://www.anrt.net.ma">www.anrt.net.ma</a>
M. Ahmed KHAOUJA	
M. Az El Arab HASSIBI	
M. Hicham LAHJOURI	
M. Khalid ZAID	Technopark, Casablanca
M. Said El AMRANI	CGEM <a href="http://www.cgem.ma">www.cgem.ma</a>
M. Hassan AMOR	APEBI
M. Yassir LAMRANI	Passworld <a href="http://www.passworld.net.ma">www.passworld.net.ma</a>
Ms Ghita TAHIRI HASSANI	Allo Maroc <a href="http://www.allomaroc.ma">www.allomaroc.ma</a>

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