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Morocco: Developing Competition in Telecommunications

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Issues Paper

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Competition is the cornerstone of successful telecommunications development. Morocco's telecommunications reforms in 1995-1999, which among other changes introduced competition in mobile phones, led to fast growth, and improved sector performance. Plans for further competition, however, did not materialize and the sector stagnated. As a result, Morocco lost its leading regional position and the country's overall competitiveness has been compromised. Important business opportunities await new entrants, especially in the Internet market, fixed voice and data services, international calls, and domestic and international leased lines. Actions being taken by the Agence Nationale de Réglementation des Télécommunications (ANRT) to update regulations, monitor and enforce fair competition, and issue new licenses seek to effectively restart sector development. Accelerated development of network competition, focusing regulation on fair competition, further adjustments in the legal and regulatory framework, and building closer ties with regional and global regulatory regimes through trade and economic agreements would contribute to sustainable development of a competitive telecommunications sector in Morocco.¹

I Introduction

Morocco successfully undertook important reforms in the telecommunications sector between 1995 and 1999, and reaped considerable benefits. A new pro-competitive telecommunications sector law was enacted (Law 24-96) in 1997 and a regulatory authority (Agence Nationale de Réglementation des Télécommunications, ANRT) was established separate from the operators. Competition was introduced in the mobile market in 1999, with stunning results. These reforms led to major sector growth and had considerable impact on the economy overall. For example, since 1998 the number of phone connections (fixed and mobile) has grown fivefold (to eight million, of which over six million are pre-paid cellular customers) and operating revenue has doubled (to US\$1.6 billion). Mobile communication charges were reduced four times in less than two years and are now aligned with European best practice. More than 90 percent of the population is covered by mobile communication service.

Initial success, however, was followed by stagnation. A comprehensive program to gradually introduce competition in other market segments was proposed by ANRT to the Government in 2000. The program was approved at first, then rejected, then modified under political pressures, and finally implemented in a way that led to failure.

While Morocco was struggling with these unsuccessful attempts, the rest of the world continued to move forward. Morocco has fallen behind in all market segments in which

¹ This paper was drafted by a team of the World Bank's Global Information and Communication Technologies Department (GICT), comprising Björn Wellenius (Consultant), Carlo Maria Rossotto (Senior Regulatory Economist), and Anat Lewin (Knowledge Sharing Analyst).

competition was not introduced, especially Internet and data services. In international voice communication, Morocco's market is divided into two monopolies, while major national markets worldwide, accounting for about 75 percent of global traffic, are wide open to competition. Morocco has lost its regional leadership in telecommunications. This has damaged Morocco's competitiveness and caused the local information and communication technologies (ICT) industry to perform below its potential.

In July 2004, ANRT presented to its Conseil d'Administration a new and promising strategy that would extend competition to all market segments. This program has been approved in a second meeting of the Conseil in November 2004, and translated into a "Note d'Orientation Générale." The program comprises implementing a consistent set of regulations that updates and complements those in place, revises and restarts the process of issuing new licenses, and equips ANRT to more effectively monitor and enforce fair competition.

This paper provides a backdrop against which the Government can examine where Morocco stands today and ANRT's initiatives to move forward. The paper focuses on changes in regulatory policy that would support the country's emerging e-agenda and would particularly help Moroccan businesses.

Section II of this paper summarizes where Morocco stands at present, relative to its own past achievements in telecommunications and recent progress of other countries. For this purpose, the paper uses data from six countries in Northern Africa and the Middle East (Algeria, Egypt, Jordan, Lebanon, Syria, and Tunisia) and five from other regions including one high-income country (France) and five middle-income countries with diverse approaches to developing competition (El Salvador, Estonia, Malaysia, Romania, and Turkey). Section III discusses substantial business opportunities that could be developed in a more competitive sector context, as well as some ways in which Morocco's regulatory environment can enable these businesses within the current legal framework. Section IV outlines areas of additional reform towards international best practice, beyond the current ANRT initiative, that need to be undertaken to ensure sustainable progress of Morocco's telecommunications sector and the e-agenda it underpins.

II Where does Morocco stand today?

Morocco has undertaken important steps in its reform program. Opening of the mobile sector in 1999 was seen as cutting edge and consistent with international best practice. Further liberalization efforts, however, have had mixed results, particularly in the large fixed line market segment and in the new GMPCS and VSAT satellite segments.² As a consequence, progress of Morocco's telecommunications sector has slowed down markedly while comparable countries have continued to move ahead, leaving Morocco

² GMPCS is the acronym for Global Mobile Personal Communication by Satellite, used primarily for mobile voice and data communication in areas lacking ground-based services. VSAT stands for Very Small Aperture Terminal, a system for fixed voice, data, and video communications using satellites.

noticeably behind, especially in its remaining non-competitive segments (WEF, 2004; Arab Advisors, 2004a,b,c). In particular, Internet services, including voice over Internet protocol (VoIP), have revolutionized business processes elsewhere, placing Moroccan businesses at a competitive loss. Table 1 summarizes Morocco's position relative to regional and global benchmark countries.³

Table 1
Morocco and regional and global benchmarks

Regional Benchmarks						Global Benchmarks					
2003	Country	Mainlines (%)	Cellular (%)	Internet users (%)	Hosts (%)	2003	Country	Mainlines (%)	Cellular (%)	Internet users (%)	Hosts (%)
	Lebanon	19.9%	22.7%	11.7%	0.25%		France	56.6%	69.6%	36.6%	4.64%
	Jordan	13.0%	24.2%	8.3%	0.04%		Estonia	35.1%	65.0%	32.8%	8.38%
	Tunisia	11.8%	19.2%	6.4%	0.00%		Turkey	27.7%	40.8%	8.1%	0.49%
	Egypt	12.7%	8.5%	3.9%	0.03%		Romania	20.5%	32.9%	19.1%	0.64%
	Syria	12.3%	2.4%	1.3%	0.00%		Malaysia	18.2%	44.2%	34.4%	0.44%
	Algeria	6.9%	4.6%	1.6%	0.00%		El Salvador	11.6%	17.7%	8.4%	0.06%
	Morocco	4.1%	24.3%	2.7%	0.02%		Morocco	4.1%	24.3%	1.3%	0.02%

Sources: ITU 2003, Arab Advisors and Operators 2003, Network Wizards Jan 2004. Mainlines data are for 2002 where 2003 figures were not available.

Overview of main market segments

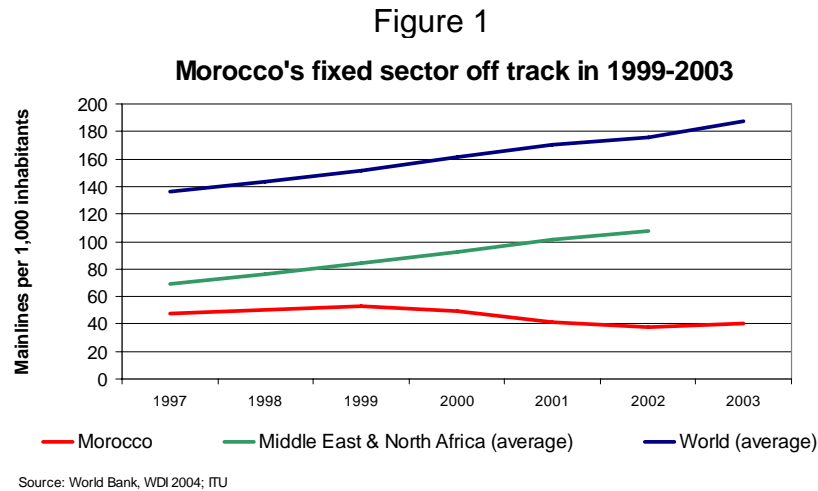
The mobile segment in Morocco has experienced substantial growth and is on the forefront of Arab telecommunications experiences, inspiring others to liberalize. Mobile penetration rose from just over one mobile customer per hundred inhabitants in 1997 to over 23 per hundred in 2003, primarily by adding many new customers but also capturing some fixed phone customers from the incumbent telephone operator. The high proportion of prepaid customers (over 90 percent) means that service now reaches many small businesses and low-income households that otherwise would be unable to have phone communication connections of their own.⁴ As a result, mobile penetration is over six times fixed penetration (WMRC, 2004). Analysts estimate that the Moroccan mobile market can mature up to 40-50 percent penetration. Population coverage of mobile services in Morocco is the highest in Northern Africa, and comparable to Jordan and Romania. Annual growth, while still considerable, is now leveling off from post-liberalization highs of over 530 percent to just over 12 percent in 2003. Competition between the incumbent and the new entrant resulted in frequent and substantial reductions of domestic communication prices, and may decrease further with a third mobile operator expected to enter the market in 2006 (Arab Advisors, 2004a). In contrast, limited competition in international long distance service has kept prices high in that segment (WMRC, 2004).

Fixed-line phone penetration levels have been slowly falling since the mobile market was liberalized in 1999, and currently languishes at four main lines per hundred inhabitants

³ Countries are shown in both tables ranked by fixed phone line penetration.

⁴ The post-paid market, presently 500,000 subscribers, has still room for improvement in terms of revenue generation, especially from new services.

(1.2m customers). This is down from 5.3 percent in 1999 and lagging behind regional and global benchmarks (WMRC, 2004). See Figure 1 below.



The Internet market is highly concentrated. While Morocco had allowed many small Internet service providers (ISP) to enter the market, only two major ISPs remain in operation. Menara, Maroc Telecom's ISP operation, has come to dominate the market even after a late start.

The International Telecommunication Union (ITU) reports that only 3.3 percent of the Moroccan population used the Internet by the end of 2003, and only 0.2 percent subscribed to Internet connections. These results lag behind almost all regional and global benchmarks (ITU, 2004b). Low average income levels and relatively high illiteracy limits the prospect for individual Internet subscription growth (Arab Advisors, 2004a). Much of the focus of Internet growth may be on increasing business connections.

We now look more closely into five specific problems found in the Moroccan telecommunications sector: the Internet market is underdeveloped, businesses cannot run applications that require high-bandwidth connectivity, international voice communication is very expensive, ICT businesses are running below their potential, and there is generally low demand for ICTs.

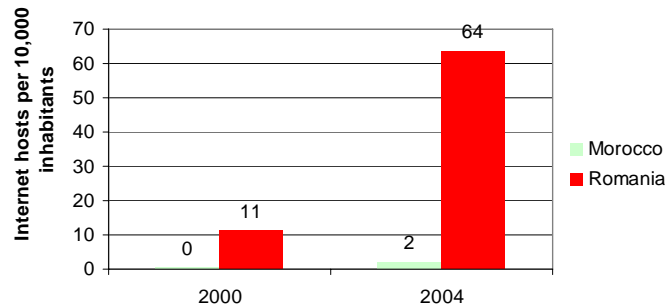
The Moroccan Internet market is underdeveloped

This can be seen from the relatively small number of Moroccan Internet users, hosts, websites, and Internet applications. Annex 1 compares Morocco with selected benchmark countries. Figure 2 below illustrates how Morocco has fallen behind. The reasons for the market's immaturity are the absence of facilities-based competition in the fixed line sector, limited facilities-based competition in the wireless sector, the absence of cable

television as an alternative means to reach end customers, limited roll-out of ADSL,⁵ the inability of ISPs to own their own networks, and limited support of Maroc Telecom's fixed infrastructure to develop the Internet market.

Figure 2

Morocco lost ground in the Internet sector



Source: Network Wizards, January 2000 and January 2004 data. www.nw.com

Businesses cannot run applications that require high-bandwidth connectivity

In the main business centers, such as Casablanca and Rabat, companies do not have access to top quality data services and applications. They cannot offer real-time interaction with counterparts in other countries or run bandwidth-intensive applications often required for e-commerce. The problem is the limited availability and high cost of Moroccan leased lines, the insufficient roll-out of ADSL, and that advanced wireless data communications services (such as WiFi) are in their infancy. The reasons for the lack of top quality data services and applications are the absence of specialized data services providers, the absence of facilities-based competition in fixed and mobile data services, the lack of specialized service providers, and the difficulty for ANRT to restrain Maroc Telecom's anti-competitive behavior. Table 2 compares the use of leased circuits in Morocco with selected other countries.

Table 2
Leased circuits per capita

	2003	Morocco	Estonia	Malaysia	Romania
Leased circuits per capita		0.02	0.32	0.22	0.13

Source: ITU 2004

International voice communication is very expensive

International calls are too costly for businesses due to the presence of an imperfect duopoly, its inherent lack of competition in prices, and the fact that VoIP services are

⁵ Asymmetric Digital Subscriber Line (ADSL) is one of the main technologies used to make high-speed Internet service available to users through the existing telephone line network.

restricted to licensed operators. Table 3 illustrates the high call charges. Licenses for new entrants, or for more effective competition among existing operators, have not been made available by the authorities despite the end of market limitations in Morocco's commitments under the World Trade organization (WTO). This is detrimental in particular since VoIP is a competitive option for reducing international tariff prices, attracting investment in fixed lines, and increasing business call volumes. Figure 3 illustrates the impact of full international competition on call prices and traffic volumes.

Table 3
Comparisons of average fixed and mobile call charges

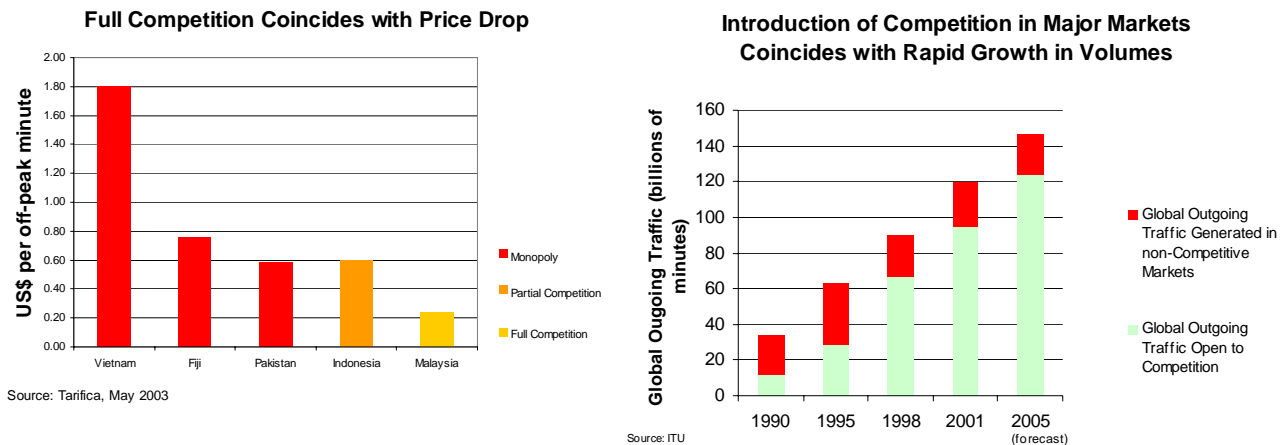
	2002	Morocco	Estonia	Taiwan, China
Telephone average cost of call to US (US\$ per three minutes)		1.63	0.74	0.51

Source: World Bank, WDI 2004

International call tariffs to UK (US\$ per 3 peak mins)						
Fixed-to-Fixed	Fixed-to-Mobile	Fixed-to-Fixed via Operator	Fixed-to-Mobile via Operator	Maroc Telecom to UK mobile	Méditel to UK mobile prepaid	Méditel to UK mobile postpaid
1.98	2.34	1.95	2.35	1.80	4.44	3.06

Source: Maroc Telecom, ANRT, Méditel, as reported by Arab Advisors 2004a

Figure 3
Impact of full competition on international call charges and traffic volumes



ICT businesses are running below their potential

Moroccan domestic entrepreneurship in the ICT sector is lagging due to sectoral and broader economic constraints. While there are good wireless-based applications providers, Internet-based applications are limited and e-commerce is almost non-existent. Contributing factors are the lack of adequate infrastructure and the lack of rule

enforcement to restrain Maroc Telecom's anti-competitive behavior as an ISP. Maroc Telecom is simultaneously the monopoly network operator, dominant ISP, and major content provider (Menara portal). In addition, factors such as below-potential ICT capacity building and a sub-optimal business operating environment compound the problem. Table 4 illustrates one of the World Economic Forum's *Networked Readiness Index* rankings of computer penetration in businesses, which positions the country on a ranking of 102, and shows that limited usage of ICTs remains an obstacle to the business operating environment.

Table 4
Penetration of personal computers among businesses

2002	Morocco	Algeria	Egypt	Jordan	Turkey	El Salvador	Estonia	Malaysia	Romania	France
Ranking (out of 102) of country's PCs in business per 1,000 inhab.	79	76	70	77	52	62	45	33	60	21

Source: WEF 2004

Low demand for ICTs

The major barriers to the uptake of ICT services in Morocco are high illiteracy rates and the low purchasing power of many Moroccan households, especially in the ages of most Internet users (15-30 years old). In addition, the lack of Arabic web content and the low diffusion of government online services play a role. In the end, the most important factor remains: price (WMRC 2004a). Table 5 compares a variety of data series to illustrate this point, from GDP per capita in terms of purchasing power, literary rates, and three of the above-mentioned World Economic Forum's *Networked Readiness Index's* rankings on affordability and government online presence.

Table 5
Economic and social constraints on ICT demand

	Morocco	Algeria	Jordan	El Salvador	Romania
GDP per capita, PPP (current international \$) 2003	4,012	6,248	4,319	4,994	7,222
Literacy rate, adult (% of people ages 15+) 2002	51	69	91	80	97
Literacy rate, youth (% of people ages 15-24) 2002	70	90	99	89	98
Ranking (out of 102) of country's affordability of Internet service provider fees (% of GDP per capita) 2001	78	71	66	62	54
Ranking (out of 102) of country's affordability of Internet telephone access (% of GDP per capita) 2001	70	18	41	44	38
Ranking (out of 102) of country's government online presence 2003	83	80	94	51	46

Source: World Bank, WDI 2004, WEF 2004

III Business Opportunities and Enabling Regulatory Environment

Increased competition would lead to vigorous growth of important Moroccan market segments currently constrained well below their potential. Revised and new implementing regulations for the recently amended telecommunications law (Law 55-01) would facilitate these business developments.

Business opportunities

The following market segments have considerable growth potential benefiting a wide range of users:

- the fixed line market, where penetration is much lower than regional averages;
- the Internet market, both at service provision and at network operator levels;
- the international calls market, where Maroc Telecom has still a monopoly except for MediTel clients; and
- the provision of domestic and international leased lines, another area under the monopoly of Maroc Telecom.

Fixed network At present there is no competition for fixed connections. This is not critical for voice services, since mobile has become an effective alternative for many users. However, insufficient investment in the fixed network in response to declining demand for fixed phone connections is a matter of concern because it restricts access of enterprises to high-speed Internet services. New entrants in this market segment will be able to address demand especially from the business users in Casablanca and other major cities. Investors and users could find the fixed segment attractive in terms of Internet connectivity, Internet applications and services, leased lines, virtual private networks, and VoIP offerings. This would offset the adverse effect of fixed-to-mobile substitution on fixed line traffic and revenue. The development of alternative infrastructure networks by other public services (ONE, ONCF) could also contribute to revive investment in the fixed line business.

In contrast, the loss of fixed residential customers that has accompanied massive development of mobile services is a legitimate market response and should not concern Moroccan policy-makers. Once Moroccans were offered a choice between a mobile or a fixed phone for access to voice services, many opted for mobile. Pre-paid mobile service, with no fixed monthly charges and easy control of call expenditure, attracted many new residential customers that otherwise were not eligible or willing to commit to conventional fixed service. Some existing customers terminated their subscription to fixed line services.

Wireless technologies have a growing potential for building out fixed networks capable of reaching end customers for the provision of data and broadband Internet services. Regulatory measures can be implemented to facilitate fixed wireless network development, such as making spectrum available for commercial trials on a license-free basis. In contrast, extending access to basic mobile services is no longer a priority in Morocco. The vibrant competition since 1999 between Maroc Telecom and the new operator, MediTel, has greatly increased network coverage, reduced prices, stimulated access, and promoted some degree of technological innovation.⁶ After four years of duopoly, however, the introduction of a third mobile operator would result in further price reductions and service innovation.

⁶ Currently GSM mobile service is available to about 94 percent of the population. Prices were reduced three times while the new license was being processed, and several times thereafter. There are several examples of technological innovation related to the development of the GSM market in Morocco. The deployment of GSM-based fixed wireless PBX (so-called “yellow box”) has greatly stimulated the enterprise market. The widespread diffusion of SMS services has enabled several applications on text messages, including the notification, via SMS, of Court proceedings and decisions.

Internet The small number of Internet subscribers and hosts, and the limited choice among ISPs, should also be a major concern for the Moroccan policy-makers. At present, the Internet market is nominally open at the service level, but competition is limited in practice. Moreover, ISPs are not allowed to have their own domestic networks or have direct access to international networks. For years, the ISPs faced high costs of leased circuits and there has been no regulation on unbundling the local loop. These two limitations discouraged the development of the ISP market. In addition, some ISPs claim that Maroc Telecom cross-subsidized its digital subscriber line (DSL) offer, providing preferential treatment to its own subsidiary, Menara.

In response to these challenges, ANRT has recently prepared two draft decrees that would regulate access to leased lines and discipline unbundling in the local loop. These two decrees will facilitate and regulate access to essential infrastructure for ISPs and stimulate the Internet market. In addition, the new Law 55-01 gives attributions to ANRT in the area of competition, including the power to initiate investigations over anti-competitive behavior. This is an important development, which is likely to be accompanied by the strengthening of capacity in the area of competition law and economics.

International calls There is minimal competition for long distance and international calls. The only competition to Maroc Telecom in this market segment comes from MediTel for their own mobile users. However, mobile users in practice have no choice once they have selected a mobile company. New entrants in this market segment have a strong potential to undercut existing rates, provided that they are given fair access to mobile end customers (accounting for 85 percent of all phones). The entry of new operators in this market segment should bring considerable benefits, even in the absence of the most advanced regulatory features of a fully competitive market, such as carrier pre-selection (expected by 2006) and a class license or authorization regime.

Leased lines The absence of competition in the provision of leased lines results in high input costs for ISPs, call centers, and data service providers. New entrants would be able to offer leased lines and tap the demand of heavy users. The only alternatives to Maroc Telecom in the provision of leased lines are VSAT operators. Licensed in recent years, VSATs are viable businesses in Morocco, and have a track record of results in rural areas. However, VSAT connections are generally too costly as an alternative to leased lines, especially in the densely populated areas where the data market is concentrated.

Enabling regulatory environment: moving forward again

Important improvements in the regulatory environment are now in place or underway, which will help restart sector development.

No exclusivity All exclusivity periods have expired, paving the way for new entry and more competition. The four years of mobile duopoly included in the license of MediTel ended in 2003. The exclusivity period granted to the VSAT operators in 2001 expired on

January 31, 2004. Moreover, since the end of 2002, commitments under the WTO require Morocco to open its telecommunications market to competition. These obligations are being reinforced by the commitments in the framework of the recent Morocco-US Free Trade Agreement.

A legal framework encouraging new entry Although a more pro-competitive licensing regime would be desirable, the present regime can be used to facilitate entry. The requirement to tender each license individually created artificial scarcity in the past, and was used to generate windfall fiscal revenue at the expense of sector efficiency. Despite the absence of class licenses, however, the telecommunications law permits issuing multiple licenses. This approach was used, for example, to award several GMPCS licenses on a demand basis, and can be exploited further. Also, licenses have been segmented by types of service, which does not support new business models. Lack of interest in the second national operator license was partly due to the license being limited to fixed line service.⁷ Broader licenses, however, or simultaneous issuance of several narrower licenses, can help overcome this limitation.

A clear framework for telecommunications liberalization In November 2004 the Government published guidelines for telecommunications liberalization and regulatory development in the period 2004-2008 (ANRT 2004b). This document established a clear strategy and a timetable for opening up all telecommunications market segments to limited additional competition.

Two new licenses will be awarded in the first quarter of 2005 for each of the following market segments: local, long distance, and international. Two local licenses will be awarded in each of the major regions of Morocco. The international licenses will be awarded only to those bidders that have obtained a local or long distance license. Operators can bid for all three licenses. The licenses will be technologically neutral and will allow operators to provide a wide range of services (voice, data, media). One of the two local loop licenses will be authorized to also offer limited mobility services. The new licenses will not have coverage obligations.

In 2005, mobile licenses using third-generation technology (3G) will also be awarded, giving priority to the existing mobile operators. A third mobile license may be launched in 2007 to start operations in 2008.

New licenses for VSAT and GMPCS operators will be awarded. All operators wishing to have a VSAT and GMPCS license will be allowed to enter the market, provided that they comply with defined license terms.

Regulatory reform to strengthen competition The current regulatory framework originally set by Law 24-96, has been updated by Law 55-01, promulgated and published on November 8, 2004. Law 55-01 introduces several important changes:

⁷ Another reason for the failure of the Second National Operator license was the presence of very demanding coverage obligations.

- ❖ Broadens the definition of universal service so it may include value-added services and the Internet;
- ❖ Allows owners of alternative telecommunications infrastructure, such as utilities and the railways, to lease their infrastructure to public telecommunications operators;
- ❖ Creates the obligation of operating companies to share their infrastructure with other operators that demand it;
- ❖ Establishes that ANRT will manage directly the numbering system and will introduce number portability;
- ❖ Reduces the maximum contribution to universal service from 4 percent to 2 percent of turnover net of tax and interconnection, and creates a universal service fund; and
- ❖ Strengthens ANRT's role in the area of monitoring and enforcing fair competition provisions, and introduces sanctions for anti-competitive behavior.

As part of the implementing legislation following Law 55-01, rules will be introduced to improve the process to resolve interconnection disputes. At the same time, a new reference interconnection offer will be prepared. Fixed-mobile interconnection charges will be revised in the future as part of periodic updating of the reference interconnection offer. Starting 2006, a methodology of long-range incremental costs will be used to calculate the interconnection costs of the Maroc Telecom. To strengthen the role of ANRT as arbiter of interconnection disputes, the composition of the Comité de Gestion of ANRT (responsible for the final decision on interconnection disputes), has been modified to make it more independent from the Government. The regulation of access to key infrastructure is being enhanced by new draft decrees on infrastructure sharing, local loop unbundling, and leased lines.

Further regulatory developments are likely to improve access by new entrants to Maroc Telecom's network. ANRT expects Maroc Telecom to start the necessary technical preparations for local loop unbundling by early 2005, and may be required to make a reference unbundling offer for 2006. A timetable has been set for introducing unbundling in two phases: (a) partial unbundling will be introduced within 18 months from the date of award of the new licenses, and (b) total unbundling will follow within 36 months of the award date of the new licenses. Fair and non-discriminatory terms and conditions will apply to infrastructure access mandated by Law 55-01, and ANRT expects implementation to become effective as soon as possible. In addition to classic co-location, ANRT is considering virtual and in-span co-location. ANRT has also expressed its preference for national roaming in a recent public document (ANRT, 2004).

Carrier selection, such as the option for a customer of one operator to choose another operator for international calls, will be introduced within 12 months of the award date of the new licenses.

Monitoring and enforcing fair competition in the sector is quickly becoming the main focus of ANRT. In particular, the new law gives ANRT authority on competition, and a draft implementing decree will detail the powers of ANRT in this area. Significant

market power regulations (asymmetric regulation) may be introduced, similar to the European Union (EU) model used in the transition towards full competition.

New entrants that rely on wireless data application technologies are likely to find in ANRT a regulator receptive to the latest technology and global regulatory trends in this area. ANRT has finalized a new national frequency plan, approved by the Prime Minister on July 6, 2004. In addition, two recent initiatives are likely to stimulate the development of the wireless data market. Decision 08/04 determines the rules to be followed to develop Wi-Fi and DECT services. ANRT has decided to open the 5.8 GHz band to independent radio networks.

A further area in which sector regulations are being improved in anticipation of competition is the framework for alternative infrastructures. Public utilities and transport companies, such as ONE and ONCF, have deployed considerable telecommunications infrastructures. The amended telecommunications law allows such public enterprises to lease their capacity and fully participate in the telecommunications business.

Privatization of Maroc Telecom The Government has sold a further 16 percent of the capital of Maroc Telecom to Vivendi Universal, which brings Vivendi's share to 51 percent. The Government is also making good progress toward floating 15 percent of Maroc Telecom's shares on the Casablanca and Paris stock exchanges. The process is expected to be concluded in December 2004, after which the State would only have a remaining 34 percent blocking minority. This is likely to have positive repercussions on establishing a level playing field in the sector. In particular, Maroc Telecom will now have to follow the disclosure requirements for listing on the Casablanca Stock Exchange, as well as those mandated by the French Commission de Bourse.

Stability, public consultation, and regional presence In the past, conflicts between ANRT and part of the Government increased the regulatory risk for investors potentially interested in Morocco.⁸ An improved climate of cooperation between ANRT and the Government has since developed and should help move the sector along more effectively. ANRT's powers will be enhanced by a revised regulatory framework. Under the new Director General, ANRT has recently taken several initiatives, including re-starting the liberalization process and launching several studies to anticipate regulatory trends (on the Internet, call centers, and offshoring). In addition, several proposed implementing decrees will enhance ANRT's powers to carry out its regulatory functions in an effective and timely manner.

Using its website, ANRT has started processes of public consultation on major regulatory and policy matters, following the examples of major European regulators such as the UK's Office of Communications (OFCOM). This will increase regulatory transparency and openness and contribute to more effective mediation of conflicts (ANRT, 2004).

ANRT is playing an important role in the region among African Arab and Francophone regulators. ANRT's excellence is recognized on a regional scale. Often, regional

⁸ It also contributed to the departure of two Director Generals of ANRT.

seminars on telecommunications regulation are organized and hosted by ANRT. It is likely that the regulatory developments in Morocco will have a regional impact. This may help to attract investors to Morocco with regional ambitions, or with a regional presence.

IV Morocco and Global Best Practice

Telecommunications reform efforts in developing countries over the past fifteen years have confirmed that competition is the cornerstone of successful sector development. Competition accelerates growth, innovation, and productivity, resulting in more services, better services, new services, and overall less expensive services. Competition, or a credible threat of competition, forces established operating enterprises to focus attention on customers, improve service, accelerate network expansion, reduce costs, and lower prices. As new technologies change network cost structures and reduce the minimum sustainable scale of operations, entry in all market segments becomes possible.

The announcement that Morocco will award new competitive licenses in the year 2005 as the start of a new liberalization program is a substantial development, bringing Morocco closer to global best practice. However, there is still the need to undertake reforms beyond Morocco's current sector policy and regulatory framework, to fully incorporate global best practices.

This final section focuses on global best practices in four areas that are especially relevant for Morocco's long-term telecommunications development: full competition and dismantling of all entry barriers, broad licensing regime and changes in spectrum policy, regulating access to essential network infrastructure, and broader regulatory reforms. For each area, the paper suggests measures that Morocco should undertake, beyond the efforts of the current reform program already discussed.

Full competition and dismantling entry barriers

Exclusive rights or restricted competition, even if temporary, should be avoided. For a large cross-section of developing countries in 1999, limited competition in the provision of international service resulted in call charges typically costing more than twice than in countries where full competition was in effect (Rossotto et al., 2004). The lengthy exclusivity periods initially granted in Latin America at the time of privatizations in the early 1990s resulted in high prices for domestic and international telephone service and leased circuits, and carried over to the emerging Internet service well into the late 1990s, even after competition was introduced (Wellenius, 2000a).

The number of licenses should not be limited even if this foregoes short-term government revenues. Although in practice a given market can only support a finite number of operators, this number is best determined through the market rather than second-guessed by policy makers or regulators. An econometric analysis of 18 telecommunications privatizations in 15 countries between 1987 and 1998 found that whereas granting

exclusivity can double the firm's sale price, it resulted in up to 40 percent reduction in growth over the exclusivity period (Wallsten, 2000).

Beyond the new sets of competitive licenses to be awarded in 2005, Morocco must move aggressively towards facilities-based competition in all market segments. Competition in services using networks owned by Maroc Telecom, to which other operators have access only because it is mandated and enforced by ANRT, will at best provide temporary relief to current service shortfalls. Competitors must be free to choose whatever mix of their own and others' facilities they find best suited to their business needs.

Opening international networks and services to full competition is urgently needed and inevitable. It would impact Morocco's sector performance beyond these services alone and provide a powerful driver for further sector reform. There is a strong case for opening this market segment quickly rather than gradually (Rossotto et al., 2004). International competition tends to work fairly well with limited regulatory intervention once the basic rules are effectively in place. Consistent with international best practice, this will involve Morocco issuing as many international licenses as are demanded by current or prospective operators, and Maroc Telecom adjusting radically its business strategy to face the loss of monopoly rents. Effective competition also requires implementing a system whereby each customer, fixed as well as mobile, can select the international operating company for each call irrespective of whether it has pre-subscribed to one company as its default provider.

Economic efficiency as well as Morocco's trade obligations would be compromised by attempts to maintain the high net settlements currently received from foreign correspondents. As competing Moroccan operators negotiate the price of receiving and sending international traffic with foreign partners, and increasingly route traffic outside the international accounting rate system, the net settlements received from abroad will decline. This adverse initial impact on the revenues of Maroc Telecom (and to a lesser extent MediTel's) is likely to be more than offset by lower costs to the economy at large and eventually by higher traffic from existing and new services. Moreover, Morocco is committed under the WTO to ensure that companies with market power provide cost-based interconnection to all competitors. The recently concluded dispute between the US and Mexico (WTO, 2004) implies that international accounting rates are subject to the disciplines of cost-based interconnection established in the Reference Paper, which Morocco adopted in 1997 as an additional commitment under the General Agreement in Trade and Services.

It would also be counterproductive, and inconsistent with international best practice and treaties, to impose on international operators any conditions that would *de facto* limit the number of possible operators, favor incumbents, or require operators to undertake activities other than what they would do following commercial competitive business practices.

In awarding new licenses, roll-out or coverage obligations should be avoided, because they discourage investment in competitive markets. Instead, reaching for service

development goals beyond what a well-working market can provide is best dealt with through separate government support. Public funds can be used to catalyze additional private investment as needed to reach government targets. Subsidies are limited to what is necessary to render socially desirable projects commercially viable, not to exceed initial capital costs. Competition among operators for these subsidies, not a calculus of costs and revenues, is the preferred way to determine how much subsidy is needed and who should receive them (Wellenius 2000b). In this area, Morocco will need to develop a coherent strategy for competitive allocation of subsidies for socially desirable projects.

Broad licensing regime and changes in spectrum policy

Licensing regimes that avoid market fragmentation have become critical enablers of competition. The licensing regime should not divide the market along lines of business or technologies, nor between services and networks. Licenses with broad scope allow operators to respond more effectively to the wide range and rapidly changing mix of services demanded by customers, resulting in efficiency gains from using common technological platforms to provide a wide range of services, limiting market dominance by incumbents, and avoiding unnecessary burdens on the regulator and regulated parties.

Most (if not all) networks and services could be provided today without license, even in relatively undeveloped markets, subject only to declaration for the public record and for statistical purposes. In El Salvador, the law of 1997 requires licenses only for using the spectrum, but not for operating networks or services: “Operators interested in providing...services must request...a license...which shall be granted automatically...subject only to compliance with the requirements for registration...without any limitation of number and location, being possible that more than one license exist in the same geographical area” (El Salvador, 1997). Alternatively, class licenses can be automatically granted to any applicant meeting a common set of published requirements. These arrangements simplify and expedite the authorization process and also reduce the opportunity for discretion, pressure, and corruption. Individual licenses, however, may be necessary for major operators with persistent market power (the incumbent) and for the use of large segments of scarce radio spectrum (mobile).

Beyond the licenses that will be awarded in the period 2005 to 2007, Morocco will need to review its overall licensing regime to fully incorporate the trend towards broad licensing and technological neutrality. In particular, even though the present regulatory environment attempts to take into account the convergence among technologies and services, the licensing regime established in the Law 24-96 may need to be further revised in the next few years to facilitate such convergence. No individual licenses should be required, perhaps with a few exceptions. Although in the short term ANRT can issue as many individual licenses as are demanded, the process will become too burdensome on both ANRT and the operators. Likewise, traditionally narrow license scopes should give way to broad generic authorizations that give firms and ANRT flexibility to respond effectively to changing technologies and business opportunities.

Licensing and regulations should be neutral with respect to technologies and business models. In particular, they should not constrain the delivery of content using new media, nor prevent content from driving investment in networks that then can deliver conventional voice and data communication services at marginal cost.

New regulatory solutions should be developed to deal with technologies and services that are not marginal extensions of existing conditions but have potential to alter radically the structure and performance of the telecommunications sector. In particular, ANRT should consider refraining from regulating competitive applications of the Internet, including VoIP, even if these to some extent overlap with services that have traditionally been regulated (telephony).

Wireless technologies are likely to facilitate entry of new competitors into the market. Enough radio spectrum must be made available to accommodate a surge of demand for wireless solutions by new entrants and incumbents. It is preferable to grant freely the use of spectrum when available and use market mechanisms when demand exceeds supply. Portions of the spectrum made available without license encourage innovation, such as broadband wireless networks. Regulatory intervention should be kept at a minimum consistent with containing interference. Traditional spectrum management practices based on administrative rules should give way to modern solutions that make more use of economic principles and market forces (ITU, 2004a).

Spectrum policy should become an integral part of Morocco's telecommunications reform agenda. Spectrum management in Morocco would gain from moving towards greater reliance on markets, deregulation, and less government administration, as it is happening in Europe and the US. Effective markets for trading of spectrum property rights are being developed, including leasing and selling, reconfiguring (dividing and aggregating), and changing use (between services) of radio authorizations. At the same time, the spectrum is being increasingly deregulated by making it freely available without license or by developing a spectrum commons, in which qualified users manage themselves the use of the spectrum as public property.

Regulating access to essential network infrastructure

In the recent "Note d'orientations Générales..." (ANRT, 2004b), the Government has correctly pointed out that the transition to full liberalization in telecommunication must be accompanied by regulatory measures that will facilitate the access of new competitors to the essential network infrastructure of dominant telecommunications operators. These measures are common in advanced regulatory systems and fall under three main areas: unbundling in the local loop, sharing of infrastructure and co-location, and domestic mobile roaming. The first two sets of measures are foreseen in the document of the Government, the third may be necessary when the Government opts for a new mobile license in 2007.

Unbundling of the local loop Mandatory unbundling of access to the local loop of operators with significant market power in the fixed public telephone network market can

help develop competition in new services, especially broadband Internet. Local access is still one of the least competitive segments of liberalized telecommunications markets. While mobile services have become a competitive alternative for voice communication, the fixed local loop remains a bottleneck for carrying high speed data and video. Alternative infrastructures, such as cable television, satellite, and wireless local loops, for the time being are not as widely available. New entrants so far have been unable to match the economies of scale and the coverage of the incumbents' networks. Mandatory unbundling of local loops provides temporary relief by allowing new service providers to reach end users through existing networks until they develop their own networks or alternative infrastructures become available (EC, 2000; ITU, 2001).

The economic rationale for mandating local loop unbundling is that dominant operators developed their networks over long periods protected by exclusive rights and were able to fund investments through monopoly rents. By the same token, new networks developed under competition, such as optical fiber to connect end users, would not be subject to mandatory unbundling. Mandatory unbundling would end once local access becomes sufficiently competitive (EC, 2000).

Progress in implementing mandatory local loop unbundling has been uneven among countries and generally slow to take off (Pyramid, 2001). Unbundled access to the local loop is mandatory in Europe, the US, and other high-income countries as well as in an increasing number of emerging and transition economies, especially where the fixed network is already well developed (e.g. Chile, Mexico, Slovak Republic). Mandatory local loop unbundling has also been adopted in some countries with less mature fixed networks (e.g. Albania, Ecuador), but in such situations the value of unbundling is more questionable. In Morocco, local loop unbundling is likely to have limited impact on Internet service development while ISPs are not allowed to reach their main customers and global networks directly.

Where local loop unbundling has been made mandatory, commercial negotiation is the preferred method for reaching agreement on the terms and conditions of provision. In practice, however, detailed regulatory intervention and strict enforcement of competition rules is necessary due to the imbalance in negotiating power and the absence of alternative infrastructures. Offers by operators with significant market power should be sufficiently unbundled so that competitors do not need to pay for network elements or facilities they do not need. There are several levels of possible unbundling, and some involve co-location of competitors' equipment with the incumbent's facilities (Intven et al., 2000). The usual rules of fair competition must apply – access to the local loop and related facilities should be provided under transparent, fair, and non-discriminatory conditions, and made available to competitors under similar conditions as apply to the incumbent's own operations. Prices should be cost oriented, enable sustainable competition as well as further investment in infrastructure, and not distort competition such as through margin squeeze between wholesale and retail prices by the local loop provider (EC, 2000).

The prospect is for sustained and intense regulatory intervention, without which the benefits of mandatory unbundling are unlikely to materialize. In countries only now considering mandatory unbundling, this raises the question of whether the necessary regulatory capabilities are in place.

A case can be made, in Morocco and other developing countries, for promoting facilities-based competition right away rather than seeking temporary relief of end-user access constraints through mandatory unbundling of existing facilities. This reflects slow progress implementing mandatory unbundling in other countries, permanent heavy regulatory requirements, and risk of actually slowing down network development. Despite a clear economic rationale, mandatory local loop unbundling may reduce the incentives for new entrants to build networks and, for the incumbent, to expand and modernize its own infrastructure.

Sharing of infrastructure and co-location Sharing of infrastructure (e.g. poles, ducts, conduits, manholes, street pedestals, towers) and co-location (two or more operators using a common space, such as in a telephone exchange to facilitate connection of cables and transmission equipment) is often mandatory. Infrastructure sharing and co-location can significantly decrease barriers to competitive entry, increase revenues of the incumbent, and contain environmental damage and public inconvenience. Acquiring rights of way and other permits to build new infrastructure tends to be costly and time consuming, posing additional entry barriers. Local government authorities may be reluctant to grant authorizations to an unlimited number of operators. Breaking up streets and roads result in large costs to communities and other services. Proliferation of unsightly structures in residential and scenic areas is increasingly found objectionable.

The economic rationale for mandating infrastructure sharing and co-location by operators with significant market power is similar to that of local loop unbundling. New entrants, however, not only incumbents, may be required to give access to any infrastructure they build, as the underlying environmental and economic costs are unlikely to abate. In contrast with local loop unbundling, mandatory infrastructure sharing may be permanent rather than temporary.

Commercial negotiation is the preferred way to set the terms and conditions of infrastructure sharing and co-location, but regulatory intervention is often necessary. Some of the issues that need to be addressed include apportioning space between current needs of new entrants and future needs of the incumbent, pricing of facilities and ancillary services, access and security arrangements, and leasing or licensing to third parties (Intven et al., 2000).

Domestic mobile roaming Domestic mobile roaming is necessary for customers of operators with limited networks to have service countrywide. In the early stages of mobile service liberalization, new entrants are often required to build out extensive networks of their own. This effectively places pressure on the incumbent to expand and improve service. Subsequent entry, however, should allow new entrants to supplement

own network development with roaming agreements with other mobile network operators using similar technologies.

Whether domestic roaming should be mandatory and regulated or left to commercial negotiation among the parties is a matter to be examined case by case. In 1997, the Australian Competition and Consumer Commission (ACCC) considered including domestic mobile roaming services under the regulated telecommunications access regime. This would have required access providers to supply roaming service upon request by other operators, and would have enabled operators to seek the assistance of the ACCC in negotiating roaming agreements. The ACCC decided not to regulate the service on the basis that the network operators were willing and preferred to enter into agreements on a commercial basis. Given, however, the importance of roaming for new entry in the 1,800 MHz band, the ACCC decided that it would monitor the market and intervene if the incumbents refused to provide roaming services on reasonable terms and conditions and in a timely manner. The ACCC might view this as an indication of anti-competitive conduct and seek remedies in accordance with competition law (ACCC, 1997).

Broader regulatory reform trends

In the future, Morocco will need to adopt two broader regulatory trends in modern telecommunications regulation: increasing regulatory focus fair competition, and the growing role of regional and global regulation.

Regulation for fair competition Accelerating market opening requires perfecting Morocco's arrangements for monitoring and enforcing fair competition. This becomes especially important to deal with vertical integration, including Maroc Telecom's control of the main networks and, through Menara, the use of these networks to provide both ISP services and content. Under Law 55-01, ANRT now has the tools to impose sanctions, investigate cases at its own initiative, and require annual revision and approval of reference interconnection offers. These will help ANRT deal more effectively and promptly with fair competition issues and conflicts among operators. In developing its capabilities as the competition authority for telecommunications, ANRT will need to strengthen its relationships with the judicial system and build capacity in Morocco in the area of competition law and economics. Additional measures, such as mandatory structural separation or divestiture of vertically integrated companies, may become necessary if market power continues to constrain effective development of competition. As general competition law and enforcement become effective and mature, ANRT will find itself sharing its responsibilities on fair competition. Eventually, much of the sector-specific regulatory burden could be passed along to the general competition authority.

Effective competition cannot be fully achieved while the state retains ownership interests in Maroc Telecom. Conflicts of interest between the government as regulatory authority and as a shareholder of the largest regulated company are inevitable. The recent moves towards increasing the private share in Maroc Telecom's capital reduce, but do not eliminate, this conflict of interest. Full divestiture is necessary.

Global and regional ties Morocco's regulatory framework is increasingly intertwined with those of other countries, regions, and the world through trade and economic treaties. These treaties create a floor under Morocco's regulatory principles and practices, which enable and require Morocco to align itself with international best practices. Morocco committed under the WTO's General Agreement on Trade in Services (GATS) to specific steps toward liberalizing telecommunications, including abiding by regulatory principles established in the Reference Paper that Morocco adopted in 1997. Compliance with these principles provide an important test to gauge new licensing initiatives underway and any conditions that might be imposed on new licensees. Careful reading of the WTO panel report on *US vs. Mexico* (WTO, 2004) illustrates how the GATS and Reference Paper principles, deceptively simple on first reading, can be interpreted rigorously in practice. Telecommunications figures prominently in the agenda of the US and other countries in the current Doha round of WTO negotiations, and Morocco can expect considerable pressure from its global and regional trading partners to agree to further liberalization steps and stricter compliance. Conversely, the trade negotiations, which comprise multiple sectors and pairs of countries simultaneously, can leverage internal changes that might not have as high priority in terms of domestic political agendas alone.

The recent amendments to the telecommunication law, implementing decrees being prepared, and changes in market structure that would result from ANRT's proposals to resume issuing of new licenses, are taking Morocco's regulatory framework closer to that of the EU. Further harmonization with the EU will benefit Morocco in terms of facilitating foreign direct investment, as investors find it easier to relate to the local environment. Ultimately, however, foreign investment will be influenced more by how well the regulatory regime works in practice than its formal similarities to that of Europe. Moreover, harmonization should not prevent Morocco from moving ahead in some areas even faster than Europe. A relevant example is that of Romania, which experimented before EU countries with CDMA2000 as a platform for mobile data.

In conclusion, Morocco has undertaken a serious reform effort to introduce more competition in the telecommunications market, starting in 2005. This implied a coordinated effort to award new licenses, while upgrading the regulatory framework. It is important that this effort is sustained in the next five years, to complete the transition of the sector policy and regulatory framework to a fully competitive environment.

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Annex 1: Morocco is lagging behind in non-competitive sectors

Fixed	Morocco	Algeria	Egypt	Jordan	Turkey	El Salvador	Estonia	Malaysia
Fixed liberalization status	<i>Monopoly</i>	<i>Monopoly</i>	Monopoly	Monopoly	Monopoly	Competition	Competition	Competition
Fixed liberalization date	..	..	..	..	..	1996	2001	1983
Number of operators	1	1	1	1	1	4	3	2
% privatization of main operators	35%	..	..	61.5%	..	57.1%	73%	35.3%
Mainlines per 100 inhabitants	3.80	6.10	11.04	12.66	28.12	10.34	35.06	19.04
CAGR (%) 1997-2002	-4.3	4.8	14.0	7.6	2.2	11.2	1.8	-0.5
Subscriber lines per 100 inhabitants	3.84	6.10	11.04	12.66	27.85	10.34	35.06	19.33
Residential main lines per 100 households	14.9	31.6	45.7	58.3	97.4	38.1	62.9	65.2
Telephone revenue per mainline (current US\$)	1,465	192	335	1,128	275	903	881	948
GITR Ranking: Mainlines (per 1,000 inhab.) 2001	78	73	64	59	40	67	35	53
GITR 2003-2004 Ranking: infrastructure quality	65	69	43	23	54	50	32	12

Mobile	Morocco	Algeria	Egypt	Jordan	Turkey	El Salvador	Estonia	Malaysia
Mobile liberalization status	Partial	Partial	Partial	Competition	Competition	Competition	Competition	Competition
Mobile liberalization date	1999	2002	1998	2004	2001	1999	1996	1989
Number of operators	2	2	2	3	4	4	3	5
Population coverage (%)	95.0	60.0	96.0	99.5	88.2	85.0	99.0	95.0
as % of total telephone subscribers	84.6	17.3	37.7	64.4	55.3	57.1	65.0	66.4
Cellular subscribers (millions)	6.9	1.2	5.3	1.3	27.8	1.0	1.0	10.3
Cellular subscribers per 100 inh.	23.4	3.8	7.9	23.6	41.3	15.2	70.6	42.0
CAGR 1997-2002 (%)	142.1	87.2	133.1	93.4	70.8	85.8	43.6	35.8
Prepaid subscribers (%)	95.2	15.4	80.6	79.4	71.7	74.6	37.0	47.2
Cost of local SMS	0.09	0.06	0.11	0.42	0.10	0.09	0.10	0.04
Prepaid cell tariff (\$ per peak min)	0.27	0.25	0.33	0.25	0.49	0.30	0.26	0.14

Internet/Data	Morocco	Algeria	Egypt	Jordan	Turkey	El Salvador	Estonia	Malaysia
ISPs liberalization status	Competition	Competition	Competition	Competition	Competition	Competition	Competition	Competition
ISPs liberalization date	2000	1998	1995	1995	1996	1998	1995	1999
Number of main ISPs	20	15	8	9	5	6	4	7
Internet hosts per 10,000 inhabitants	2	0	3	4	49	40	838	44
DSL Internet subscribers	2,700	0	4,850	4,996	56,624	93,395	28,300	0
Cable modem Internet subscribers	0	0	0	0	42,700	8	44	34
Internet users per 100 inhabitants	3	2	4	8	8	25	210	147
Personal computers (per 1,000 people)	24	8	17	38	45	48	14	8
Internet total monthly price (\$ per 20 hours of use)	25	18	5	26	20	28	4	3
Internet total monthly price (% of monthly GNI per capita)	26	12	5	18	10	23	89	174
Secure internet servers	15	4	17	9	496	8	44	34
Leased lines liberalization status	Monopoly	Monopoly	Partial	Monopoly	Monopoly	Competition	Competition	Competition
Leased lines liberalization date	none	none	..	none	none	1998	..	..
Number of Leased Lines operators	1	1	..	1	1	..	..	..
VSAT liberalization status	Competition	Competition	Competition	Competition	Competition	Competition	Competition	Competition
VSAT liberalization date	2000	2001	1996	..	..	1998	..	..
Number of VSAT operators	4	3	4	..	4	4+	..	..
Data liberalization status	Competition	Monopoly	Competition	Competition	Partial	Competition	Competition	Competition
Data liberalization date	2000	none	..	1996	..	1998	..	..
Number of data operators	5	1	6	15	5	..	6	4
GDP per capita, PPP (current international \$)	4,012	6,248	3,950	4,319	6,749	4,994	13,348	9,696
Computer, communications and other services (% of commercial service exports)	16	..	27	27	22	21	19	31
Communications, computer, etc. (% of service exports, BoP)	21	..	28	29	22	25	20	32

Fixed section sources: (i) Liberalization data; No. of operators: WMRC, April 2004, ITU website. (ii) % privatization: ITU Trends in Telecommunication Reform 2003. (iii) Mainlines, CAGR, Subscriber lines, % households with telephone: ITU W 2002. (iv) Telephone revenue per mainline: ITU WTID 2003, 2002 data. Data in italics are for 2001.

Mobile section sources: (i) Liberalization data are from WMRC 2004 and EMC 2004. (ii) Population coverage; as % of total telephone subscribers; CAGR 1997-2002; Cost of local SMS; Prepaid cellular tariff are from ITU, WTDR 2003. Data are operators; Cellular subs; Prepaid subs are from EMC 3Q03.

Internet/Data section sources: ISPs liberalization status and date / Number Main ISPs: WMRC June 2004 and Meeting the Competitiveness Challenge. Leased lines and VSAT liberalization status: ITU's Trends in Telecommunications Reform Competitiveness Challenge in the Middle East and North Africa. Data liberalization status / Number of data operators: WMRC June 2004 and Meeting the Competitiveness Challenge. Internet hosts data: Network Wizards, January 2004. Internet subscribers, cable modem subscribers, Internet users, PCs per capita and GDP PPP data: World Development Indicators 2004, World Bank and International Telecommunications Union, 2004.

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