

**Reforms and Optimal Regulatory Design in MENA Countries:
Lessons from the Telecommunications Industry**

Anastassios Gentzoglani

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Abstract

In the past few years some MENA countries, Morocco, Egypt, Lebanon, Jordan, and Mauritania, have decided to reform their telecommunications industries. The results, although positive, differ significantly among these countries. This paper examines the way the reforms have been applied and analyzes the factors that may explain the differences in results. It shows that countries that have set up independent regulatory agencies and mechanisms that effectively resolve the problems of information asymmetry, market contestability, enforcement, credibility and skills, are better equipped than others which have ill-conceived versions of these mechanisms. The latter group of countries cannot reap the full benefits of reforms, while private companies realize high returns. Our findings suggest that privatization by itself does not generate benefits. However, privatization or other types of reforms combined with the existence of a separate regulatory authority increases telecommunications penetration ratios, the industry's connection capacity and reduces the price of local and international calls. The creation of a competitive environment and regulatory capacity structure rather than privatization as such are two important factors to take into account when policy makers consider reforms in their regulatory policies which aim to promote growth. Policies that encourage privatization and the granting of exclusivity periods to privatized incumbents are not necessarily optimal from a social point of view.

الإصلاحات وصياغة سياسات التنظيم المثلى في أقطار الشرق الأوسط وشمال أفريقيا : دروس من قطاع الاتصالات

أناستاسيوس جنتزوجلانيس

ملخص

في السنوات القليلة الماضية قررت بعض دول الشرق الأوسط وشمال أفريقيا (المغرب، مصر، لبنان، الأردن وموريتانيا) إصلاح أنشطة الاتصالات فيها. ورغم أن النتائج كانت إيجابية، إلا أنها كانت متباينة. هذه الأقطار. تدق الورقة في طرق الإصلاح المتبعة وتحلل العناصر التي تقف وراء تباين هذه النتائج. فبين الورقة أن الأقطار التي تعين جهات ووكالات منظمة مستقلة، تقوم بحل مشكلات عدم تناسق المعلومات، إمكانية التنافس، في السوق، المصدقية والمهارة، وتكون هذه الأقطار معدة أكثر من تلك الأقطار المتفجرة لهذه الآليات الجديدة. وهذه الأقطار الأخيرة لن تكون، قادرة على حزم مكاسب الإصلاح كاملة، بينما تحقق الشركات الخاصة عوائد عالية. فقد النتائج المستخلصة بأن الخصخصة محد ذاتها لن تحل مشكلة مكاسب. ومع ذلك فإن الخصخصة أو أي نوع من أنواع الإصلاحات لو كانت مصحوبة بوجود هيئة تنظيمية منفصلة ستزيد من نسب توسع الاتصالات وطاقات التوصيل ونقلها من أسعار المكالمات المحلية والدولية. إن خلق بيئة تنافسية وهيكلة تنظيمية ذو طاقة عالية بدلا من الاكتفاء بالخصخصة وحدها هما عاملان هاما، يجب أن يؤخذوا في الاعتبار في السياسات التنظيمية المزمع إحراؤها بهدف تحفيز النمو. إن السياسات المشجعة للخصخصة وكذلك تمديد فترات الامتيازات للشركات المخصصة لا تعتبر بالضرورة الطريقة المثلى من وجهة النظر الاجتماعية.

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Introduction

In the past two decades or so, many countries (the U.K., the U.S., Canada, continental Europe, etc.) have witnessed drastic changes in their economies and major transformations of their industries (transportation, gas, telecommunications and more recently, electricity). Since the early 90s, some developing countries in Latin America (Chile, Argentina, Mexico, etc.) have been undergoing dramatic reforms, privatizing state-owned telecom providers, opening portions or major segments of their markets to competition, and building regulatory institutions. These changes have provided incentives to firms to become more efficient with significant improvements in productivity and growth throughout their economies. The traditional models of regulation have been greatly revised and new paradigms have emerged (rate of return regulation, price caps and benchmarking, etc.). Competition and globalization have increased and with them, the need for further reforms.

In the past few years some MENA countries (Morocco, Egypt, Lebanon, Jordan, Mauritania, etc.) have decided to join the club and proceed with reforms in their telecommunications industries. These countries have had relatively positive results (GSM competition reduced prices in Lebanon to an average seven cents a minute, against a regional average of forty to fifty cents a minute, while the introduction of GSM competition in Morocco has created pressures for rates cuts and major investments in infrastructure). But there are many other MENA countries (Algeria, Iraq, etc.) that lag behind in the process of reforms and the building of regulatory institutions. Should they continue that way, their economic performance would suffer in medium and long terms.

The models adopted by various MENA countries and used to reform their economic regulation are quite distinct. Notwithstanding the diversity of the models, the underlying goals of reforms are to increase the productive capacity and the living standards of the countries in the region. Although it is too early to judge the effectiveness of these reforms, it is still possible to examine the success and/or failures of the first steps towards deregulation and the openness of their markets. Among the countries that have experienced the reforms there are some successes that are worth examining. It is interesting to highlight the reasons of success and failure and elaborate policies for improvement. Other countries in the MENA region can then learn from these experiences and avoid the pitfalls.

Section II presents a synthesis of various theories of regulation. It also provides a unified analytical framework to be used for the analysis of the telecommunications industry in MENA countries. When regulation is viewed as a contractual arrangement between regulators and regulatee, a number of instruments are needed in order to dissuade both the regulatee and the regulator from adopting a strategic behavior. Subsection II.2 presents these mechanisms as well as the essential variables to be employed by the regulatory agencies in order to increase their performance. Section III presents the various approaches of regulation adopted by the sample of MENA countries and assesses the reforms. It analyses as well, the factors that have contributed to the success or failure of the regulatory design and the performance of the telecommunications sector. Lastly, section IV draws conclusions and provides policy recommendations.

The Analytical Framework

Regulation as a Contractual Arrangement

This paper examines the regulatory reforms that have taken place in MENA countries in the telecommunications sector. Recent experiences with privatization, deregulation and competition have demonstrated that the governance structure of the telecommunications industry is one of the determinant factors affecting the success of reforms in the industry. Countries, even in the MENA region, differ significantly in their institutional endowment. Legislative, executive, and judicial institutions, norms of behavior, administrative capability, and the degree of social consensus in the society may be entirely different from one country to the other. The differences in capacities of these institutions determine the ability and the effectiveness of regulations to impose restraints on public and/or privately owned utility networks. The kind of restraints and the viability of regulated private ownership depend as well on the country's endowment of these institutions.

It is important, however, to recognize the complexities of regulation. The full understanding of these complexities determines, largely, the design of the regulatory framework and the institutions required for an effective regulation. The present day understanding of regulation is completely different from the one some years ago. The traditional view of regulation focused on devising alternative, non-linear pricing schemes to minimize distortions resulting from non-convexities in the production function. The incentive literature views regulation, however, as a contractual arrangement between regulatee and regulators. The theory of regulation under incomplete information Caillaud, Guesnerie, Rey & Tirole (1988); Besanko & Sappington (1987) has provided an interesting framework to analyze the effectiveness of regulatory institutions to regulate appropriately the telecommunications industry.

Under this theory, regulation is viewed as a dynamic game. It is recognized from the outset that, for network utilities to operate successfully under private ownership, they need a credible system of regulation. The credibility of the regulatory system is important because it reassures investors that the regulatory agency is committed to allow them to earn a fair rate of return on their past investments. Such a reassurance provides incentives for further expansion of capacity and satisfaction of consumer demand⁽¹⁾. In such a setting, the government sets the regulatory rules but the regulated companies privately hold information about the firms' cost structure. Regulators have less information and cannot perfectly observe these costs. This information asymmetry and imperfect observability create a divergence of interest between consumers and regulated industries, which further provides incentives to regulatee and regulators to behave strategically.

⁽¹⁾ This is very important for both developed and developing countries alike, as the experience in California electricity market makes clear. Even in the most developed countries with well-established regulatory institutions and transparent procedures, there is possibility of regulatory failure. The problem is compounded in developing countries which lack both institutions and transparency in their decision making process.

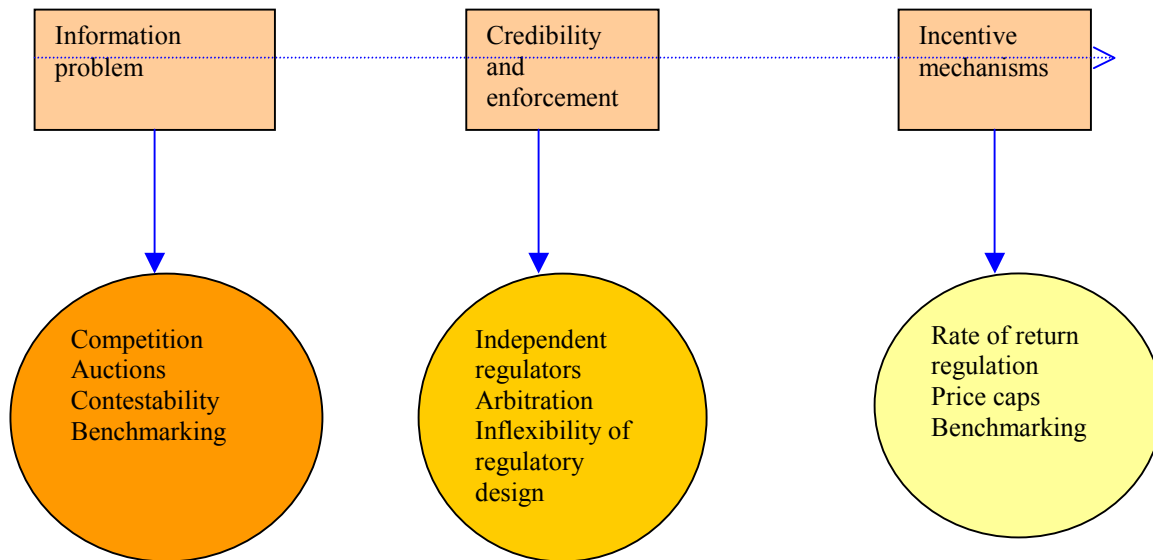


Figure 1. Resolving the Regulatory Efficiency Erobblem: The Contract Approach to Regulation
(regulatee and regulators are tied by a contractual arrangement)

Strategic behavior may undermine the credibility of each party and may be quite costly. The regulatory framework should be designed in a way that credibility is restored. Legal restraints may be imposed on the regulatory agencies so that they do not deviate from the official government policy. It may be possible that the regulatory agencies face increasing costs for deviating from their commitment to a fair rate of return. This is particularly true in the telecommunications industry and other dynamic and technology driven industries⁽²⁾.

It is possible, however, that regulated firms be influenced in their strategic behavior. The negative results from this behavior may be attenuated should regulators succeed in finding ways to make the information problem less severe. Regulators could either provide incentives to firms to reveal information voluntarily or restrict the firms to extract information rents and persuade them to operate efficiently. The efficiency aspects are important because privatized utilities attempt to deliver services that are most profitable rather than those that are most efficient. Depending on the incentives they face, they may either deliver services at too high quality and costs or too low quality and costs⁽³⁾. Credibility, however, is not an easy accomplishment especially when profits are highly volatile. Tying revenues to costs is one mechanism to reduce regulatory opportunism and enhance credibility. The latter is achieved, however, at the expense of

⁽²⁾ Breaking the regulatory compact is costly particularly in innovative and technology driven industries which serve fast growing luxury markets with new custom-designed services such as in telecommunications rather than in the mature industries such as electricity where mass market satisfaction is still predominant.

⁽³⁾ The same problem is also present in privately- and state-owned public utilities subject to a rate of return regulation (through “gold plating” or “skimping”).

efficiency. Under these regulatory systems, the regulated firms have an incentive to be less vigilant on costs, and efficiency is equally reduced.

Key Regulatory Variables

One of the objectives of this study is to provide insights into the roles of regulatory institutions and the relationships between them in the evolving telecommunications industry. We make a cross country comparison in the MENA region in an effort to single out factors of success and best practices of the regulatory bodies in their effort to promote competition, investment, new, and basic telecommunication services at affordable prices. A country's regulatory structure should be understood in the context of its economic, political, and social background. This explains the widespread variation in the structure of regulatory institutions and the role they play in the transition of the market from monopoly to competition, while safeguarding the interests of consumers.

In an effort to evaluate regulatory performance, we employ various indicators. Mainlines per capital has always been used as an indicator of a country's teledensity. Mobile telephony has overtaken the fixed telephony, ever since many countries have gone ahead with the introduction of competition with sales of GSM licenses and other technologies (VSAT, etc.). Thus, we use fixed and mobile teledensity as indicators of performance, as well as payphones per capita, connection capacity per capita, employees per mainline, and prices for local calls. Since we cannot directly observe the firm behavior in each individual country, the number of firms in the industry (structure variable) defines competition in the market. The incumbent may not see the existence of mobile operators as effective competitors. Nonetheless, their mere existence may be a potential threat to them since mobile operators may expand capacity faster and enter the incumbent's market. The regulatory variable used in this study is whether the country has a separate, independent regulatory body.

Credibility and Enforcement

Independence is an important variable and there is a debate over the relevance of this variable to the outcome of the regulatory process. The Reference Paper to the WTO agreement on basic telecommunication services contains an article referring to the nature of the regulatory body. The independent regulator is defined as:

“The regulatory body [which] is separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators shall be impartial with respect to all market participants.”

The independent regulator can take any form as long as it does not have any direct relationship with the operators it is supposed to regulate. In such circumstances, even a Ministry without any direct relationship with an operator can be considered as an independent operator. Thus, the administrative structure of an independent regulator can vary from country to country. The Directive of European Union member countries

requires that each member establish an independent regulator functionally and legally separated from operators providing basic telecommunication services.

The independence of the regulatory agency is particularly relevant when a strategic behavior results from the uncertainties and difficulties in identifying and predicting various contingencies. Contracts in utilities are for long periods of time during which unexpected events can occur. Contracts are, in that sense, incomplete since they cannot account for unforeseen events. Thus, despite the existence of contracts, uncertainties still exist about how contracts will be negotiated in the future. The task of the regulatory agency is to try to reduce these uncertainties and attenuate the strategic behavior of the firm followed by these uncertainties. One way to do so is to explicitly specify the way the conflicts will be resolved in the future and what resolution mechanisms will be in place. It is important as well to specify from the outset, which authorities will be competent and in charge to enforce the resolution of such conflicts and how the regulatory rules will be impartial and without undue political intervention.

Governments can safeguard and insulate regulatory rules from political interferences by entrusting the enforcement of regulation to competent regulatory bodies. They can also specify clear conflict resolution mechanisms by specifying from the beginning what type of action each disagreeing party can take in case that they cannot find a commonly accepted solution to their difference. There is always need for conflict resolution mechanisms even if extra care is taken to design a system without such conflicts. Disagreements may arise in various areas such as interconnection, terms of entry, prices, and universal service obligations. Arbitration or court hearings are means to be used as conflict resolution mechanisms⁽⁴⁾.

Credibility is acquired only when the regulatory body is able to enforce its decisions. This requires the existence of neutral and qualified third parties, which have the means to force each conflicting party to respect the regulatory decision or the agreement. The qualified parties are not the same in every country. Designating them as such depends on their qualifications. A qualified party may be the court system, the executive branch, the regulatory agency itself, or arbitration.

Yet, credibility is undermined when there is political interference and favoritism and when the regulatory rules change with changes in political power. Baron (1988) and Baron and Besanko (1987) used a model of imperfect information and majority rule to show that politicians with distributive preferences may favor regulatory policies that aim to improve distribution rather than efficiency. This may impact negatively on the performance of regulated firms with significant consequence on the whole regulatory result. Investments in the sector may be negatively affected and the future of reforms and of regulation may be jeopardized.

The influence of politics on regulation may be minimized by appointing regulators in a counter cyclical way to the political round, to embody the regulation in

⁽⁴⁾ The choice of mechanism depends on the problem at hand. If, for instance, there is a disagreement over the X factor under the caps regulation, or the determination of the efficient firm under benchmarking regulation, the regulatory body may arbitrarily decide to impose or to define one.

law, or to establish the regulatory agencies as quasi-judicial entities. Embodying regulation in law makes regulation more credible especially where laws are difficult to change. Chili for example, lays down in the legislation the exact procedures in determining prices in telecommunications and electricity. It is also explicitly explained in the law how to determine the fair rate of return and the model to be used for its calculation⁽⁵⁾, how prices are to be indexed and how disputes are to be resolved. Although this approach has its merits, (it shows government's commitment to abide to the adopted regulatory mechanism), it does have drawbacks, the major one being its inflexibility to the changing structure of industries and technologies alike. In such circumstances, legislation may fail to deal with new regulatory issues such as interconnection and new forms of competition.

New Forms of Regulation and Incentives for Efficiency

The regulators' task is to provide incentives to firms to operate efficiently. But the trade-off between efficiency and enforcement requires that the regulatory tools applied being relatively flexible. The most widely used forms of regulation are a) rate of return regulation, b) price caps, and c) benchmarking. Each of them has their own advantages and disadvantages but it is widely recognized that rate of return regulation is the least efficient. The way it is applied provides the wrong incentives to firms. Thus, instead of being efficient, they get involved in various activities such as gold plating and cost padding that inflates costs and/or create idle capacity without conferring any additional benefits. It is obvious that economic waste results from this type of regulation. Conflicts between the regulated firms and the regulators are more frequent and more significant and decisions are taken either arbitrarily or through a lengthy process of hearings. This type of regulation has been considered inefficient, especially when some of the regulated firm activities are subject to regulation and others not (cross subsidies).

Under the new regulatory regime, a cap is imposed on the average price increase for a pre-specified basket of services in which the monopoly firm is not subject to competition. The average price increases cannot exceed the difference between the CPI and a factor X, which is predetermined for a given period. The factor X is the result of productivity improvements in the telecommunications industry. To the extent that they are positive, consumers are getting part of the gains realized by the regulated firms. Both consumers and producers thus share the results of technological progress and improved productivity. This regulatory scheme is considered more efficient than the rate of return regulation because the caps are set independent of the firm's costs. This regulation provides firms with incentives to be more efficient and reduces a firm's incentive to act strategically and/or to distort its costs or to cross subsidize competitive services from revenues taken from monopoly services. There are some shortcomings with this type of regulation, the most important of them being the uncertainty created by the arbitrary decision of the regulator of the X factor. Furthermore, to the extent that the regulator desires to restrict the firm's rate of return whenever the latter realizes an unreasonably high return, the price caps regulation degenerates to a rate of return regulation.

⁽⁵⁾ The CAPM, the capital asset pricing model, is used for these calculations.

Benchmarking is widely used in order to allow the regulated firm to realize a fair rate of return on its investment without making any reference to its own costs, but with reference to some yardstick in the industry. The advantages of this scheme are clear. Since it resembles to the price cap regulation, it is anticipated that it will provide incentives to the regulated firm similar to the ones of price cap regulation, i.e., less strategic behavior, more control on the costs, and more prone to innovation and rapid technology adaptation. Moreover, it provides an advantage over the price cap regulation since there is no X factor to be determined, reducing thereby the uncertainties created by its determination. Uncertainties may exist with this scheme as well, since disagreement may arise over the definition of the benchmark. There are many other variations of the basic regulatory schemes, some with more or fewer shortcomings but the main point is that the new incentive regulation resolves key problems encountered with the traditional regulation Gertzoglani (2001); Brown et al. (1991); Einhorn (1991); Schmalensee (1989). Nevertheless, incentive regulation does not fully eliminate the uncertainties created by the regulation itself.

Competition and Information

The information problems facing the regulatory agencies are partly resolved by various mechanisms such as competition, auctions, contestability, and even competition by comparison. Economists have long favored market competition as the most efficient means of solving the information asymmetry problem⁽⁶⁾. Indeed, competition is now possible in many segments of the telecommunications industry and a number of new firms are serving not only the value-added telecommunication services, but even the basic telephone services in some countries. In such a competitive market, prices reflect actual costs incurred by the companies and the latter do not have any incentive to distort costs. This is particularly true since the regulatory agency does not regulate these market segments and therefore, does not require any information for the competitive services.

Auctions were used in recent years in many countries in an effort to lure the most efficient potential telecommunication providers, especially for new value-added and enhanced telecommunication services. Auctions are the means to limit information rents that telecommunication providers could reap because of information asymmetries⁽⁷⁾. There is an increasing literature, Laffont & Tirole (1986), McAfee & McMillan (1987), Riordan & Sappington (1987) showing that bidding (auctions) becomes more aggressive when the government chooses a sole supplier for a service and it associates with the winning bid a compensation scheme for services which are not fully compensatory (local telephony for example). Information asymmetry is balanced that way.

Contestability (Baumol, et al. 1982), that is free entry and exit of firms in various market segments, provides incentives to incumbents to reduce prices and consequently costs. It alleviates, as well, the information requirements for the regulators.

⁽⁶⁾ Perfectly competitive markets do not require any incentive-based regulation or any other type of regulation for that matter. Regulatory incentives are desirable in less than competitive markets.

⁽⁷⁾ It is important to note that auctions cannot do away with incentive-based regulations. This is particularly true when the winner of the auction has, intentionally or inadvertently, miscalculated the potential rents arising from monopoly and overpriced the auction. In such circumstances, auctions do not necessarily ensure productive and allocative efficiencies (I thank a referee for this point).

Contestability, through its potential to discipline incumbents whenever they do not align prices and quality to costs, gives regulators a powerful tool to discipline incumbents in case they fail to meet certain performance conditions (Nalebuff & Stiglitz, 1983; Demski et al., 1987). In the telecommunications industry potential competition is a reality in many market segments, especially in the new telecommunication services but even in the old plain telephony. Technological changes and innovations further increase potential competition and with this market efficiency.

Competition by comparison is another tool used by regulators to acquire more information on the costs of telecommunications firms. Although these firms are monopolies in their particular geographic regions, there are other firms in other jurisdictions that can be used for comparisons. Regulators can thus compare performance across firms⁽⁸⁾.

Each country in the MENA region has its own characteristics, its own institutional and political regimes, and enjoys a different level of development and prospects of growth of the telecommunications industry. No wonder the approach used to deal with the information problem, the commitment, credibility, and efficiency promotion mechanisms is entirely different from one country to another. The outcomes of reforms differ significantly among countries. To put this in perspective it is suggested to make a brief presentation and comparisons of the trends in the reforms of the telecommunications industry in our sample countries. An assessment of the reforms and an evaluation of the regulatory mechanisms applied by each country will follow the cross country comparisons.

Approaches to Regulation in the MENA Region

Cross Country Comparisons

The previous section has examined various regulatory models and their efficiency, from a theoretical point of view. It was shown that the results of the reforms are quite clear in theory but they can become less clear when reforms are applied in practice. This section examines the reforms undertaken in the telecommunications industry in various MENA countries (Morocco, Lebanon, Egypt, Jordan and Mauritania). Cross-country comparisons are useful in order to draw lessons and give policy recommendations. The analysis is based on data collected from various sources (ITU, World Bank, and author's personal interviews with regulators, civil servants, and telecommunications executives). To the best of our knowledge, this is the first systematic study to analyze the policies and the effects of regulatory reforms and institutions of the telecommunications industries in the MENA region.

Many developing countries have decided to increase private participation in their telecommunications industries. These countries followed the lead of many industrialized countries that experienced positive results from privatization and reforms of their

⁽⁸⁾ Regulators can reduce information rents only when collusion among firms operating in different locations is not possible (I thank a referee for this point).

industries. The Latin American countries of Chili and Argentina were among the first to have started their reforms in the telecommunications industry. They were followed by other countries in Asia and lastly in Africa.. In the MENA region, the experience from privatization and telecommunications reforms is a relatively recent phenomenon. Table 1 shows the dates that privatization begun in our sample countries.

Table 1. Privatization of the Telecommunications Industry in Some Countries in the MENA Region

| Country | Incumbent operator | Private ownership | Date of first privatization tranche |
|------------|--|---------------------------------|-------------------------------------|
| Egypt | Telecom Egypt | In the process of privatization | Corporatized in 1988 |
| Jordan | Telecommunications Corporation (TCC) | Partially privatized | 2000 |
| Lebanon | The OGERO company, under the supervision of the "Direction de l'exploitation et de la maintenance" | In the process of privatization | Corporatized |
| Mauritania | Mauritel | Recently privatized (2001) | Corporatized |
| Morocco | Itissalat Al Maghrib (IAM) | Partially privatized | 2000 |

Sources: ITU World Telecommunication Regulatory Database, 2001 and Author's search

Although the privatization of the incumbent operator is a recent phenomenon, some countries in our sample (Jordan, for example) have decided to open their mobile telecommunications market to competition even before having the chance to restructure their fixed telephony. Competition in the mobile telephony has had significant impact on teledensity and prices, pushing thereby, for further reforms even in the fixed telephony. Table 2 shows the level of competition in various market segments of our sample countries.

Table 2. Level of Competition in Various Market Segments in Various MENA Countries

| Country | Local | Long dist. | Int'l | XDSL | WLL | Data | Telex | Leased Lines | Cellular | | Paging | Fixed Sat. | Mobile Sat. | GMPCS | ISP |
|------------|-------|------------|-------|------|-----|------|-------|--------------|----------|--------|--------|------------|-------------|-------|-----|
| | | | | | | | | | analog | Digit. | | | | | |
| Egypt | M | M | M | -- | -- | M | M | M | M | D | C | M | M | C | C |
| Jordan | M | M | M | -- | -- | C | M | M | -- | P | P | M | M | M | C |
| Lebanon | M | M | M | -- | -- | C | C | -- | D | -- | -- | M | -- | -- | C |
| Mauritania | | M | M | - | - | M | M | M | M | M | M | M | M | M | C |
| Morocco | M | M | M | M | M | C | M | M | M | C | -- | M | C | C | C |

M= Monopoly; D= Duopoly; P= partial competition; C= Full competition

XDSL = Access to Digital Subscriber Line. These technologies use radio frequencies transmitted over copper lines to carry signals to customer equipment.

WLL= Wireless local loop, a technique using radio technology to provide the connection from the telephone exchange to the subscriber.

GMPCS=Global Mobile Personal Communication Services

ISP= INTERNET service Provider, ISPs provide end users and other ISPs access to the Internet.

Sources: ITU World Telecommunication Regulatory Database, 2001 and author's research

To put the telecommunications reforms in perspective, it is interesting as well to present some statistics on key economic variables for each of the countries in our sample. Table 3 shows the country's GDP, its growth rate, teledensity, network digitalization, and the number of years to get a phone line.

Table 3. Key Economic Statistics for Some Countries in the MENA Region

| | | | | | | |
|--------------------|-------------------|-------------|------------|-----------|------------|-----------|
| Arab States | \$2,500.00 | 3.4% | 7.3 | 10 | 48% | 45 |
| Egypt | \$3,000.00 | 5% | 8 | 11 | 45% | 20 |
| Jordan | \$3,500.00 | 2.0% | 8.2 | 9 | 75% | 86 |
| Lebanon | \$4,500.00 | 1% | -- | -- | - | - |
| Mauritania | \$480.00 | 5.6% | -- | -- | -- | - |
| Morocco | \$3,600 | 0% | 5% | - | 99% | 5 |

Sources: ITU World Telecommunication Regulatory Database, 2001 and author's research

Egypt, is by far the biggest telecommunications market for fixed lines telephony accounting for almost 50% of the connected lines in North Africa. At a teledensity rate of 8, it is ranked at the regional average. Egypt's investment per connected line was only \$164, in 1997, much lower than the regional average of \$209 and also much lower than the average for all Africa. Revenue per line is also much lower than regional and African averages.

Telecom Egypt ⁽⁹⁾, the major operator of basic telecommunications services and infrastructure, is a state monopoly firm but the Egyptian government has announced plans to partially privatize it⁽¹⁰⁾. Telecom Egypt is opening other services to private investment and competition. In 1988 the government decided to divest itself of ownership of Telecom Egypt's cellular operation and issued two cellular licenses. Recognizing the importance of the telecommunications industry in the country's growth and development, the government has undertaken major projects aimed at doubling the number of access lines. Economic reforms have opened new investment opportunities and the growth of foreign investment, although the incoming capital has largely been concentrated in stock market portfolio flows⁽¹¹⁾. In the past 10 years, Egypt has seen a great number of services in the market (paging, cellular, voice mail, ISDN, leased lines, X.25 and private VSAT networking) and the number is on the rise. This is the result of a more decentralized, deregulated, liberalized, and market-oriented economy.

Telecom Egypt plans to add one million telephone lines each year until 2002 at an expected cost of \$1 billion annually financed mainly by Telecom Egypt. Two private sector companies will maintain and provide all services for the country's GSM 900 cellular telephone system. It is expected that they will increase the existing 420,000 lines to 2 million lines in the coming two years, and up to 5 million lines within the next ten

⁽⁹⁾ It was previously known as ARENTO.

⁽¹⁰⁾ The government has decided to wait a bit more for the privatization because of the recent instability in the financial markets, especially for the telecommunications and dots stocks.

⁽¹¹⁾ Mohamed A. El-Nawawy and Magda M. Ismail, "Overcoming Deterrents and Impediments to Electronic Commerce in Light of Globalization: The Case of Egypt".

http://www.isoc.org/isoc/conferences/inet/99/proceedings/1g/1g_3.htm#s18

years. There is an increased demand in cellular equipment driven by increased demand of GSM cellular telephone services and related equipment. The Minister of Communications and Data confirmed that Telecom Egypt will provide a third GSM 900 system starting from July 2001, when the privilege provided to the two private companies mentioned above will end.

Jordan was one of the first countries in the region to reform its telecommunications industry in 1994. Discussions and debates preceded the policy reforms to be adopted concerning the telecommunications industry. The discussions ended up with a candid recognition of the bad shape of Jordan's telecommunications industry. It was, indeed, recognized that its industry was very weak and the reforms were aimed at encouraging private investment via the privatization of Jordan's Telecommunications Corporation (TCC). The creation of an independent regulatory structure and the adoption of a market-oriented policy gave politicians in Jordan the opportunity to set national policies that enhanced service quality and expanded the capacity of the network and its coverage (most of the lines were concentrated around Amman).

Table 3 above gives a snapshot of the state of Jordan's telecommunications industry at the time of reforms. The TCC, the state-owned firm, was unable to meet demand for basic telecommunication services for a prolonged period. Moreover, its ability to satisfy the increasing demand for advanced services and information systems was very poor. Prior to reforms, very limited data communications, public payphone, paging, and analogue mobile services were available. In a dynamic market with changing and ever increasing demand for new services, the performance of the TCC was considered as an obstacle to the country's economic development. TCC's profitability was very good, in spite of these shortcomings. Actually, its revenue per line, \$702, compares favorably to revenues for other countries in the region.

The TCC provides basic services but very little in terms of value added services, with no data transmission provision. The TCC has had a monopoly on communications, especially where basic services are concerned (telephone, fax, and telex). After the reforms, its monopoly was maintained over basic telecommunication services while the private sector now offers enhanced telecommunication services and other non-basic telephony (paging services and mobile cellular services). During the past few years, Jordan has accelerated its network digitalization but some of its exchanges are still semi-digital. Data transmission is made possible on leased lines or on dial-up bases and at low speeds, mainly to financial institutions and some governmental organizations. There is an increasing demand for such services and the regulatory reforms contribute to the modernization of Jordan's telecommunications industry and the entire economy.

Mauritania has decided to open⁽¹²⁾ its telecommunications industry and its methods of doing business in order to take advantage of the opportunities offered by new technologies. These opportunities include greater possibilities of expansion and modernization of infrastructure through private participation and to increase productivity in the telecommunications sector and the whole economy. Mauritania recognized also the

⁽¹²⁾ In March 1998, Mauritania was making official its telecommunications policy by issuing its "Declaration of policies for Post and Telecommunications" and its objectives to be achieved through liberalization of the telecommunications industry.

need to find partnerships with foreign investors in order to accelerate its modernization and investments in the telecommunications industry. Mauritania aimed these reforms at increasing service accessibility and greater territorial coverage contributing thereby to the possibilities for wealth creation and greater regional and local development.

Mauritania's reforms were made concrete when the Parliament voted the Telecommunications Act, 99-019, in 1999. According to this law, new administrative structures were put in place to assure the transition from the state monopoly to a more open telecommunications industry. Various structures were created in order to proceed with the reforms, for example, the Inter-Ministerial Committee⁽¹³⁾, the Technical Committee of Coordination and the Regulatory Authority. The Inter-Ministerial Committee decides on issues such as strategies to be adopted, the Technical Committee of Coordination prepares the decisions of the Inter-Ministerial Committee and the Regulatory Authority replaced the provisional one in charge of the privatization and reform processes.

In Mauritania, it is under the regulator's jurisdiction to liberalize the telecommunications industry and to increase competition, especially in the mobile segment of the market (using the GSM standard). The licenses sale was preceded by a bid offer, in March 2000, where international bidders were asked to bid for a second GSM license to be sold under the same conditions as the first one to the incumbent monopolist, Mauritel. The first GSM license was sold to Mattel in June 2000 (Mauritania-Tunisian Telecommunications). The second GSM license was given to Mauritel Mobil, a subsidiary of the state monopoly, Mauritel, in July 2000.

Mauritania's regulator has followed almost the same procedures of fairness and transparency as Morocco's regulatory agency during the bid and sale of the first GSM license there. International evaluators and industry participants were entirely satisfied with the rigorous analysis and evaluation procedures followed by Mauritania's regulatory agency during the bid of the GSM licenses. Other countries (Mali, Guinée Bissau) studied Mauritania's experience and they are currently trying to privatize their own telecommunications industries based on lessons drawn from Mauritania.

The reforms have dramatically changed Mauritania's telecommunications industry. Mauritel, the state incumbent, keeps its monopoly for local and international fixed telephony during a transitory period and it also keeps exclusivity on the operation and deployment of its national network. In June 30, 2003, Mauritel's monopoly on international calls comes to end and from that date on it will compete in this market with the existing firms only, i.e., Mattel and Mauritel Mobil. No new entrants will be allowed in this segment of the market. It is foreseen that from June 30, 2004 the whole industry will be deregulated and competition will be present in every market segment. The regulator wishes to increase foreign participation in Mauritania's telecommunications industry and to that end it plans to include incentive mechanisms during the privatization of Mauritel so that strategic alliances and other types of agreements are made among

⁽¹³⁾ It is composed by the Ministry of Interior, Post and Telecommunications, Ministry of Finances, the Governor of Mauritania's Central bank.

incumbents and new entrants. The regulator wishes as well to shorten the monopoly rights so that Mauritania's telecommunications market becomes more contestable.

Morocco privatized its state monopoly in December 2000 and sold its second GSM license in 1999. Maroc Telecom is partially owned by Vivendi of France (35%), while the second GSM operator, MédiTel is jointly owned by Telefonica Espana, Portugal Telecom and other local shareholders. Morocco is considered the most successful of all MENA countries in the sale of the second GSM license and in the privatization of Maroc Telecom. The first deal was worth \$2.3 billion while a 35% stake in Maroc Telecom was worth \$1.1 billion. Table 4 gives an overview of the transactions during the sale of the second GSM license in various African countries.

Table 4. Cross Country Value Comparisons Resulting from the GSM Sale

| Country | Value per access line | Value/earnings ratio | Value of shareholders' equity /net income ratio |
|----------------------|-----------------------|----------------------|---|
| Côte d'Ivoire | 3.567 | 7.96 | 13.88 |
| Ghana | 3.280 | 7.23 | 10.46 |
| Mauritania | 4.065 | 10.70 | 13.09 |
| Morocco | 2.500 | -- | -- |
| Ouganda | 1.325 | 5.15 | 28.48 |
| Senegal | 3.589 | 5.35 | 11.42 |
| South Africa | 1.545 | 5.82 | 16.27 |

Source: Privatisation de Mauritel, agence de régulation de la Mauritanie, 2001.

The table above shows that the greatest price per access line was paid to Mauritania while other countries have done better if we consider measures other than price per access line. It is important, however, to underscore that such comparisons are meaningful only when details on the transactions are known. Longer exclusivity rights on market segments will fetch higher prices, other things being equal. If low prices are associated with longer monopoly rights, it is a clear indication that the licenses were sold at discount. This is particularly true when the regulatory environment and political risks are greater. Thus, on the one hand, Senegal opted for a five-year monopoly in the international and local fixed telephony and no competition at all in the cellular market at the time of privatization. Côte d'Ivoire opted for a seven-year monopoly for local and international fixed telephony. On the other hand, Morocco has opted for competition in the mobile segment of the market from the outset of reforms but monopoly on international calls. Mauritania decided to have competition in the cellular market but monopoly on international and local fixed telephony until 2003. On these grounds, Morocco and Mauritania values are similar.

Morocco has a quite diversified and relative modern telecommunications network. The establishment of an independent regulatory agency (ANRT), its dynamism and its highly competent personnel has helped to transform the structure and performance of Morocco's telecommunications sector quite rapidly. After the restructuring of its PTO in 1991 into two distinct divisions, Telecommunications and Post and the introduction of competition into the telecommunications industry in 1999 with the sale of the second

GSM license and the partial privatization of Maroc Telecom, investment in telecommunications infrastructure greatly increased.

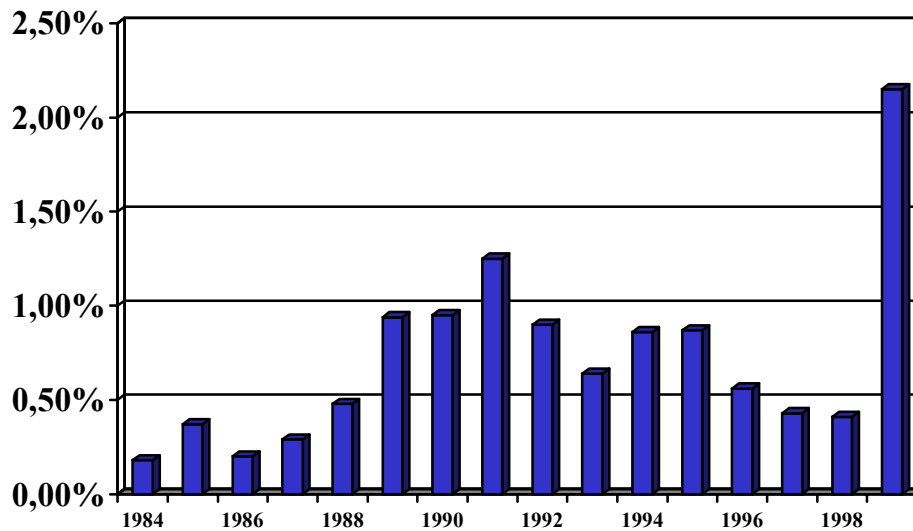


Figure 2. Investment in Telecommunications as a Share of GDP in Morocco (1984-1999)

Source: IAM and ANRT, November, 2000, Rapport sur les télécommunications au Maroc

With the second GSM operator in 1999, competition has dramatically increased and with that, investments. Prices dropped drastically while capacity and consumer choice have all increased. Only a year after its entrance into the market (from August 1999 to August 2000), MediTel (the second GSM operator) managed to double its capacity and increase its market share considerably⁽¹⁴⁾. Furthermore, Maroc Telecom estimates its customer base at 37,000,000 and its rate increased at 105% during the past year, since competition was intensified.

Morocco has the greatest number of Internet service providers (more than 1500) and cybercafés (more than 1,700) and more than half million Internet users. Moroccans enjoy, since restructuring, a variety of services. They probably are offered the largest number of telecommunication services in the region. Morocco's telecommunications structure is quite diversified: it has GMPSC operators (ORBOCOMM Maghreb, GlobalStar, T.E.S.A.M.), VSAT operators (SpaceCom, Gulsat Maghreb, Argos/Telenor) and a great number of telecommunications equipment providers (Nokia, Ericsson, Siemens).

The telecommunications market structure was greatly transformed in all MENA countries in our sample. Each country has followed a different time path with some opting for more reforms while others for less reliance on market forces. Moreover, the power of each regulatory agency is quite distinct for each of the countries of our sample

⁽¹⁴⁾ According to the company's estimations, the number of customers was already 1 million in March 2001 and it expects to increase it to 5 millions by 2003.

and the means at their disposal to apply the law are quite different. It is not surprising to find a performance that is entirely different from country to country. The next section makes a more detailed assessment of the regulatory performance in the MENA sample.

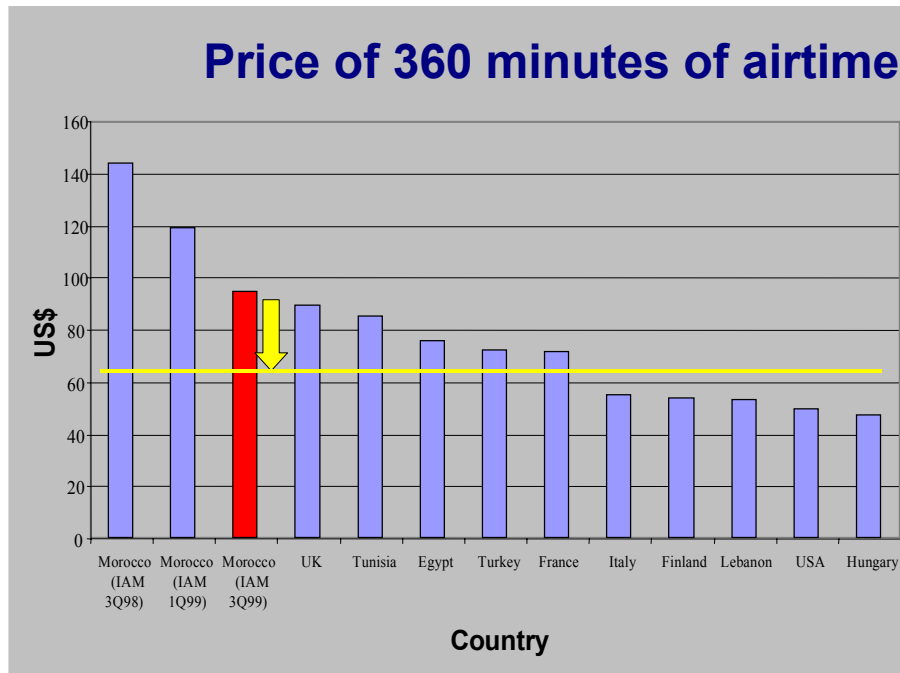
Regulatory assessment of MENA Countries

An efficient regulatory framework should be able to solve the three main problems facing the regulators mentioned in section II of this study. It is interesting to see how each country in our sample tried to solve each problem and the overall success of regulation to promote investment and efficiencies in the telecommunications industry. We are trying to identify the similarities and the differences in the approaches used by each member of our sample and then we compare the performance of the telecommunications industry after restructuring. By doing so we identify factors that may be attributed to the differences in success.

The market structure of the sample countries is very similar. Basic local, long distance, and international telephone services are under the incumbent monopoly. No competition whatsoever is allowed in these market segments. Universal service requirements are under the incumbents' obligation. Although these services are offered by the incumbent monopolies, only Morocco and Mauritania have an explicit deadline to end the monopoly service (it is planned to end by 2002 in Morocco and 2003 in Mauritania). The incumbent monopolies in the other countries in our sample have an exclusive concession to provide basic services, for an unspecified period. Thus, despite the resemblance in the market structure, it can be said that only Morocco has a market that is more contestable. Contestability provides incentives to firms to respond rapidly to changes in market conditions. It is not surprising therefore, to find a better industry performance in Morocco compared to other countries⁽¹⁵⁾.

As far as the data transmission market segment is concerned, again market structure is quite similar. There is competition in all countries but Egypt. In Egypt, the service is offered by the incumbent monopoly. Beyond this apparent resemblance however, there is again a difference between Morocco and the rest of the sample. In every country in the sample, data transmission is offered on leased lines or dial-up bases, at a low speed while in Morocco these services are being offered on digital lines, and at a high speed. Moreover, in Morocco the number of data providers is quite big (more than 1500) while in the rest of the sample the market can be characterized as a duopoly or oligopoly. Although the number of firms in an industry is not necessarily the best indicator of the level of existing and potential competition, it provides, nevertheless, in conjunction with other information, a good proxy for contestability. If, for example, there is a deadline for the openness of the market, the closer we arrive to this deadline the more competitive the market becomes. The case of Morocco is again very illustrative. The following figure illustrates clearly that competition stimulates growth and the latter offers more room for a greater number of firms in the industry. As the number of firms increases, the prices drop even further.

⁽¹⁵⁾ It is harder to evaluate Mauritania's regulatory performance since it has just restructured its industry. Prices are still quite high in Mauritania since supply is growing much slower than demand.

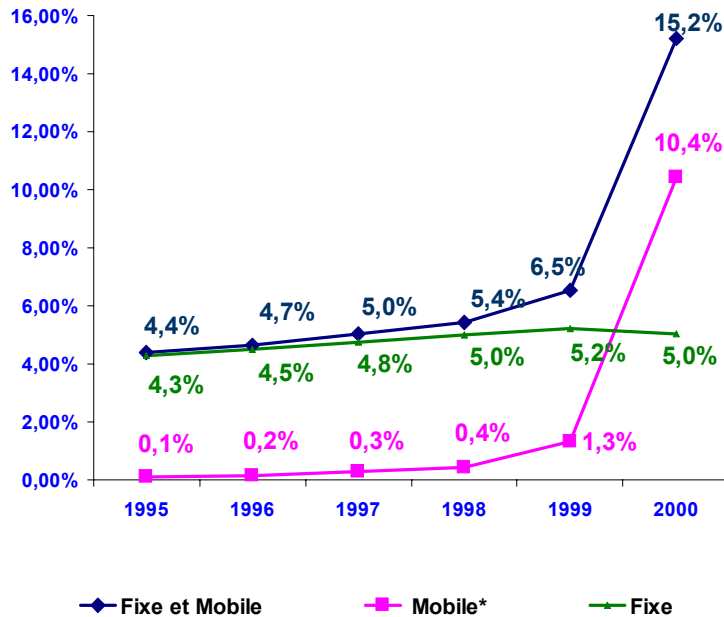


Source: Carlo Maria Rossotto, Seminar on Regulation, Financing and the Private Sector for the Arab States, Rabat, Morocco, 22-25 November, 1999

Figure 3. Competition Reduces Prices: International Comparisons

As far as the mobile telephone services are concerned, the market structure is similar in the sample with the exception of Jordan. The latter has a partially competitive market while the rest of the sample has a fully competitive (duopoly) market. Again, Morocco distances itself from the other countries despite the fact that it has only recently (a year ago) decided to introduce competition with the sale of the second GSM license. Competition is so keen between the incumbent monopolist, Maroc Telecom, and the newly established one, MédiTel, that prices have dropped dramatically in the past few months and the number of subscribers increased at an astonishing rate⁽¹⁶⁾. Within a year (from the second half of 1999 to year 2000) the number of lines in the cellular market has increased at an impressive rate of 10.4%, while the combined (fixed and cellular) number increased by 15.2% (figure 4).

⁽¹⁶⁾ The demand is so high that the operators are almost unable to satisfy the demand instantaneously. Both operators in anticipation of this increased demand are making major investments.

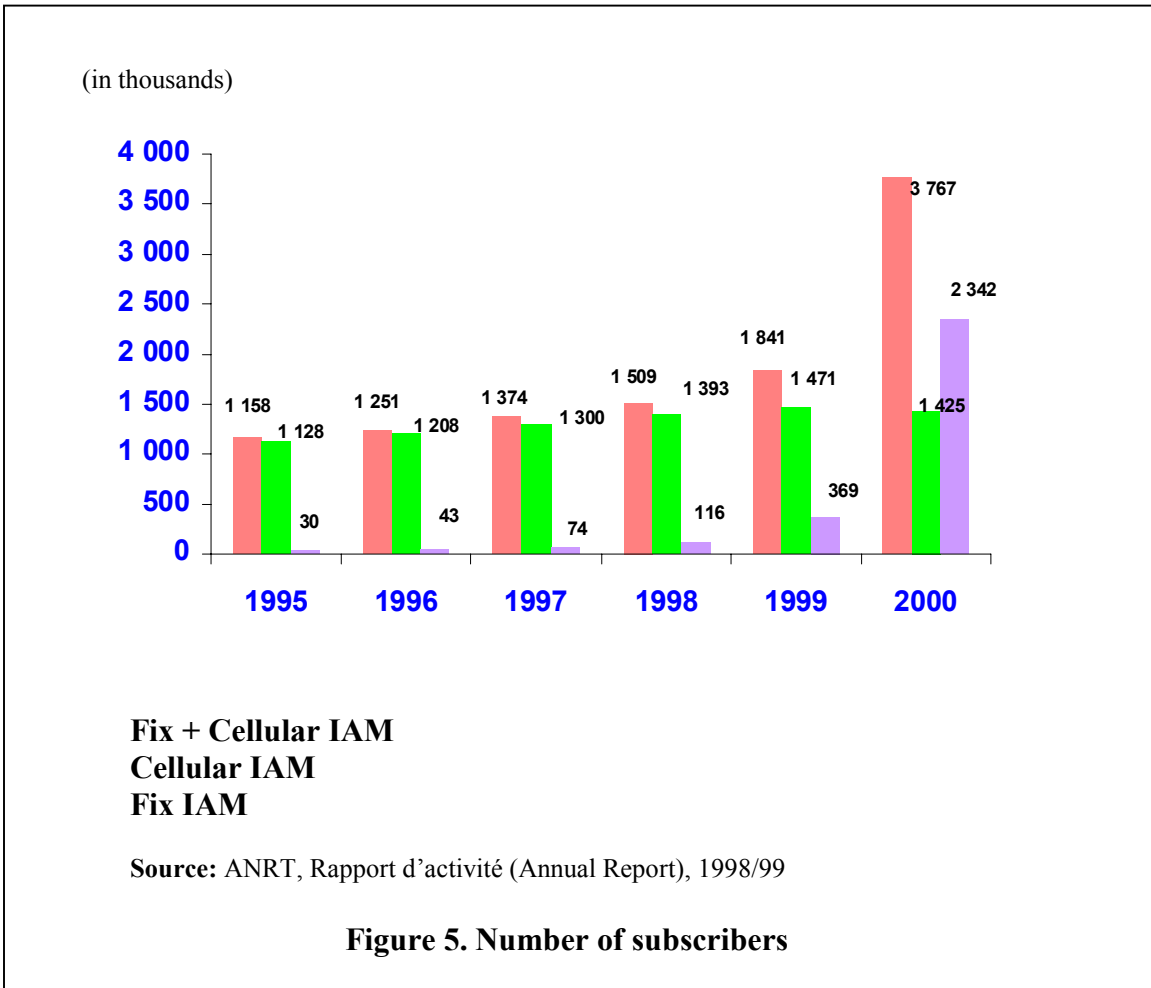


(*) Cellular: Maroc Télécom + Méditel (estimated)

Source: ANRT, Rapport d'activité (Annual Report), 1998/99

Figure 4: Number of lines per 100 in habitants in Morocco

The market contestability in Morocco is such that the level of competition is very intense between the two major carriers (Maroc Telecom and Méditel). Special price packages and cases of price predation and price discrimination have all occurred from the very beginning of the entrance of the second GSM carrier. The ANRT (the regulatory agency in Morocco) by abiding by its rules, which are clear and fair with a determined schedule for further liberalization has contributed to the intensification of competition and rate reduction. The incumbent monopolist, of which 65% is owned by the government, did not stay idle when faced with such a situation. It intensified its marketing strategy, it made more investments in infrastructure and new technologies, it introduced new value-added services, it made many organizational innovations (especially after being partially privatized in December 2000), and managed to increase its subscribers at an impressive rate (Figure 5).



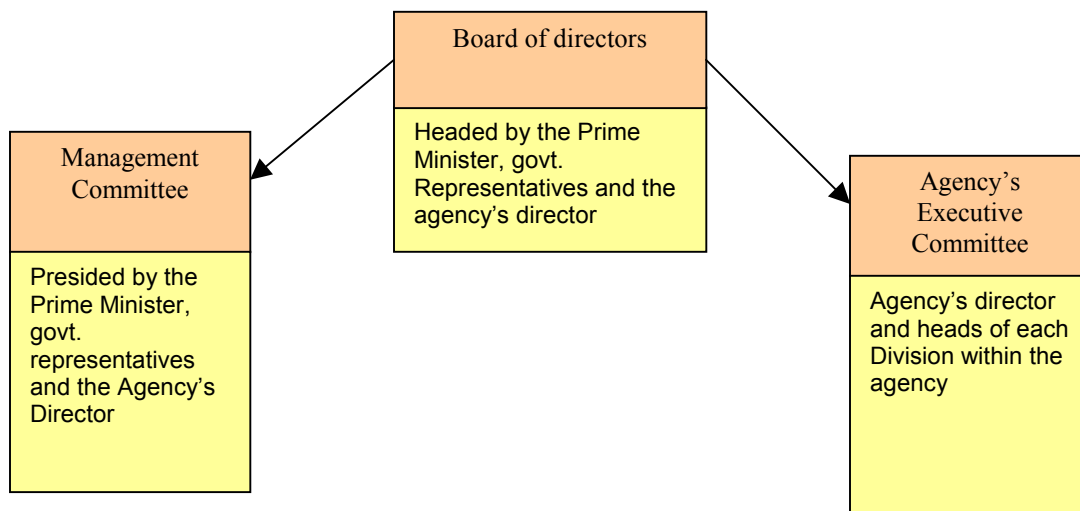
Market contestability is increased when exclusive concessions are offered to established firms for short periods of time. Among the countries in our sample, it is only Morocco that has a firm time schedule for both cellular and fixed telephony deregulation. The exclusivity period was granted for both operators for a period of two years (Moroc's Telecom monopoly for fixed telephony ends in 2002 while MédiTel's exclusivity right ends in 2004. After that date, l'ANRT may consider the sale of a third GSM operator).

To resume, Morocco and Mauritania, two of the countries in our sample, have recognized the importance of market forces as a mechanism in bringing benefits to consumers, is increasing investments in infrastructure, in realizing high growth rates and in disciplining the incumbents. They have decided therefore to make their telecommunication markets more contestable by shortening the exclusivity periods or by defining deadlines for further market openness. Prices decreased dramatically in these markets, innovations and investments have exploded, customer choice, enhanced telecommunication services, and service quality have all increased. Although the results are very positive and encouraging, some countries in the sample, Egypt, Jordan, Lebanon,

have not managed to receive the full potential benefits from the reforms. Their reforms are shy, compared to Morocco for example, and they have not managed to provide a regulatory framework that gives incentives to incumbents and new entrants alike to invest in infrastructure and new technologies that will bring benefits to consumers. The following sub-section assesses the regulatory agencies of our sample countries.

Enforcement, Credibility and Typical Organizational Structure of Regulatory Agencies in the MENA Region

Each country in the MENA region established an independent regulatory body when it reformed its telecommunications industry. Though independence is crucial in the functioning of a regulatory body, there is no a universally accepted definition of independence. As long as the regulatory body is functionally and legally separate from operators providing basic telecommunication services, it is automatically considered as independent. There are major differences worldwide in the composition and functioning of independent regulatory bodies. Broadly speaking, the MENA countries have adopted a similar kind of structure of their regulatory agencies. Figure 5 presents a typical organizational structure of the regulatory agencies in these countries.



Source: Author's conception

Figure 6. Typical Organizational Structure of the Regulatory Agencies in MENA Countries

Mainly the Board of Directors, the Management Committee and the Executive Committee compose a regulatory agency. We typically find the Ministers and sometimes the prime Minister in the Board of Directors and in the Management Committee. Such a structure is far from being independent, especially when the government is still owner of the incumbent monopolist and member of the board. It is possible that political interference and favoritism will give preference to the national operator at the expense of newcomers. In such a case, it is difficult to convince private participation in the

telecommunications industry. The regulatory risk is greater the greater the political interference and the less the transparency and the credibility of the agency. It is, therefore, more demanding and there is more pressure for these agencies to prove that the actions and their strategies do not favor the incumbent monopolist but the agency's decisions are fair to all participants.

It is too early to judge the true independence of these agencies since with the exception of Morocco, they have not as yet had the opportunity to deal with litigious problems over predatory or discriminatory pricing, interconnection or other relevant issues. Indeed, Morocco's regulatory agency (the ANRT) has already dealt with various competition issues and it has deliberated over a relatively sufficient number of litigious issues between the State monopoly and its competitor, MediTel. There is enough evidence to believe in the independence and credibility of the ANRT. In a recent dispute between Maroc Telecom and MediTel over discriminatory pricing and abuse of dominant position, the ANRT decided to use its power to punish the State Monopoly, Maroc Telecom given the reluctance of the latter to conform to the ANRT's decision. Because of this Maroc Telecom had to withdraw or extend its marketing plan to all customers.

Indeed, Maroc Telecom launched a marketing plan offering a 10% discount to its mobile to fix and fix to mobile customers but not to the customers of its competitor MediTel. The latter characterized Maroc's Telecom strategy as discriminatory and abusive given that MediTel has a mobile network only and its traffic is skewed towards the mobile to fix telephony market segment. Such a plan and in conjunction with the current system of compensation (interconnection) disadvantages MediTel which asked therefore ANRT to deal with this issue. The regulatory agency after having studied the problem has ordered Maroc Telecom either to abandon the program or to enlarge its service and include MediTel's customers as well. When the deadline of the ultimatum was reached at the end of April 24, 2001, and the incumbent didn't announce any plans to comply with the law, the ANRT has decided to proceed with a very original plan that would force Maroc Telecom to abide with the law.

According to the telecommunications law, the only sanctions available to ANRT are imprisonment or license suspension. In a market where the national carrier is a monopoly, suspending the license is impossible since it will deprive the entire nation from the telecommunication services. Imprisonment of the board members is unlikely as well. In front of this impossibility and in the absence of a competition law that normally gives more coercive and efficient means of bringing order in the market, the ANRT has decided to collaborate with SEPTI (the secretariat of post and information technologies) and impose sanctions. The sanctions consist of withholding 10% of Maroc's Telecom monthly gains for as long as the incumbent was not complying with the law. After the ANRT's plan became known, the incumbent monopolist decided to withdraw its program before the ANRT's plan became effective (few hours before the expiration of the ultimatum).

Such a decision of the regulatory agency and its determination to bring even the state monopolist into justice despite the public ownership and the fact that key ministers and the Prime Minister are in the agency's board gives a clear sign that the regulatory agency is determined to remain independent despite its political composition. Such a

strategy brings stability and credibility, both elements being essential for assuring private investors and other operators in investing in the telecommunications industry. ANRT's determination to go ahead with sanctions and impose them even on the established State monopoly increased its credibility and sent a signal that disrespect of the rules will not be tolerated and that transparency and objectivity will prevail into the market. Although the ANRT's existence is quite short and there is not much historical evidence to be used for judging its performance, it is possible, nevertheless, to argue that its recent determination to rule over the litigious issue of abuse of dominant position and price discrimination proves that the ANRT wants to give an important signal that its impartiality is not compromised despite the presence of political figures in its Administration. This is, indeed, a clear sign of an independent regulatory agency⁽¹⁷⁾.

For the other MENA countries, it is not sure whether neutrality and enforcement power can be applied to the same degree as in Morocco. With the minor exception of Mauritania's regulatory authority, where jurisdictions are a bit clearer, in other MENA countries in our sample, it seems that it is difficult to make an assessment on the basis of recent experience. Furthermore, these countries' regulatory agencies are less independent from the judicial system nor do they have a well established conflict resolution mechanism. Table 6 lists the regulatory agencies' neutrality, enforcement power and skills for each country of our sample.

Table 5. Neutrality and Enforcement Power of the Regulatory Agencies in the MENA Region

| Country | Agency | Neutrality/ political independence | Enforceme nt power | Skills | Reports to | Financing | Collegial body |
|------------|---|--|-----------------------|--------|-----------------------|--|-----------------------------|
| Egypt | Telecommu nications Regulatory Authority | No | No | Weak | Ministry | Industry: license fees Spectrum fees Numbering fees | Yes : 11 members |
| Jordan | Telecommu nications Regulatory Commission | Yes | No | Weak | Board of Directors | Industry: license fees: 80% Spectrum fees: 20% | Yes : 5 members |
| Lebanon | Ministère des postes et des télécommun ications, (DEM) | No | No | No | -- | -- | -- |
| Mauritania | Regulatory Authority | Yes | Yes | Weak | Ministry | | Yes : 5 members |
| Morocco | ANRT | Yes/Assured | Yes | Strong | Prime Minister | Industry: license fees Spectrum fees Numbering fees | No: Director- General |

Sources: Author's research

⁽¹⁷⁾ As it was mentioned above, there is no a truly independent regulatory agency. Despite the interferences from politics, industry and various pressure groups, some agencies may show more neutrality than others. This is the case with the ANRT in this example.

Neutrality is assured when the regulatory agencies are independent of political interference and/or the country's judicial system is known to be independent. Enforcement power is present when the regulatory agencies have the right to request the information they need from the firm and to implement its decisions. When the agencies are capable of attracting skilled employees and/or hire consultants, they are better equipped to deal with various regulatory issues and assure their independence. A regulatory agency can further assure its independence if its financing is independent of political decisions.

Not surprising, countries with weak regulatory bodies and no enforcement power or neutrality have not managed to attract investments and growth to the same extent as Morocco. All in all, it can be said that Morocco's superior judicial, conflict-resolution mechanisms and independence of the regulatory agency resulted in more benefits for the country (in terms of investments, low prices, higher quality, more consumer choice, etc.) compared to the other MENA countries⁽¹⁸⁾.

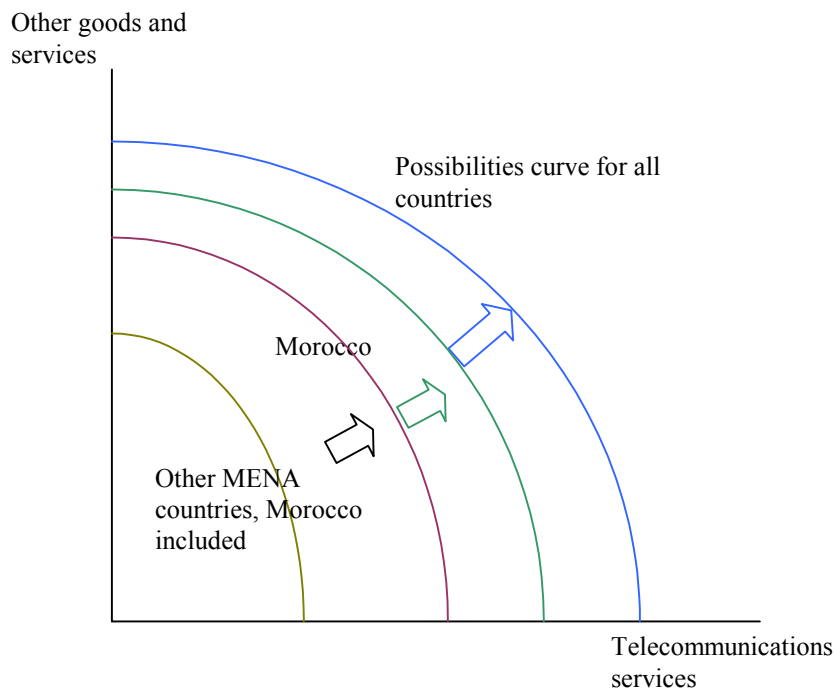


Figure 7. Potential and Realized Benefits from Reforms in the Telecommunications Industry in Some MENA Countries

⁽¹⁸⁾ We have to admit that it is too early to judge Morocco's success on the ground of the information available. But judging from what it has already been accomplished by the ANRT during its short life span, it can be said that it fares better than any other agency in the MENA region.

Our findings suggest that privatization by itself does not generate benefits. It can even have the opposite effect and reduce telephone penetration. However, privatization or other types of reforms combined with the existence of a separate regulatory authority increases telecommunications penetration ratios, the industry's connection capacity, and reduces the price of local and international calls. The creation of a competitive environment and regulatory capacity structure rather than privatization as such are two important factors to take into account when the authorities consider reforms in their regulatory policies which aim to promote growth. Policies that encourage privatization and the granting of exclusivity periods to privatized incumbents are not necessarily optimal from a social point of view. Shortening the monopoly periods and an official announcement of deadlines for further reforms makes the market more contestable and with it the benefits of privatization are further increased⁽¹⁹⁾.

Conclusions and Policy Recommendations

The implementation of adequate regulatory mechanisms is not a simple task and a successful regulatory design has to address a number of issues simultaneously (information asymmetry, pricing, enforcement and commitment problems). The actual implementation of these principles in a given context requires an understanding of the history and prevailing political and judicial institutions in each country in the MENA region. Among our sample countries, Morocco managed to do relatively better than the others in terms of attracting investments; deploying new technologies; increasing telephone penetration rates, consumer choice and quality; and lower prices. Morocco's success is mainly attributed to its ability to set up an independent regulatory agency with high skills and high enforcement powers. These are essential elements in signaling the determination and the ability of the country to enter the club of institutionally solid countries where transparency and fairness of the regulatory mechanisms are essential to the solidification of the business environment. Morocco has also elaborated comprehensive telecommunications and new technology information policies and has created high tech centers to foster integration of local entrepreneurs and attract foreign investors.

A better understanding of the success of reforms can help policy makers to adopt policies and strategies that improve the quality of life of poor men and women through productivity gains and sustainable development in the MENA region. As the benefits of reforms in the telecommunications industry become more apparent, a number of MENA countries will be willing to follow the lead of pioneers. Nevertheless, our comparative research shows that the secret to success is not to merely make the reforms but how to make and apply them in practice.

⁽¹⁹⁾ It has been observed that competitive telecommunication markets have prices 40%-50% lower than monopolies. Lebanon has the lowest per minute charges of the MENA region. In Germany competition reduced average charges by average 70%.

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