Perspective

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Towards More Effective Regulation

Unlocking the Value Of Telecom Markets In the MENA Region

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Originally published as:
"Towards More Effective Regulation: Unlocking the Value of Telecom Markets in the MENA Region" by Bahjat El-Darwiche, Fady Elias, Karim Sabbagh, and Chady Smayra, Booz Allen Hamilton, 2007.

UNLOCKING THE VALUE OF TELECOM MARKETS IN THE MENA REGION

A causal relationship has been shown to exist between economic growth and the quality, availability, and cost of telecommunications services.[1] The more successful a country's telecom sector, the more attractive that country will be to investors.[2] The success or failure of telecom sectors often hinges on the presence of effective regulatory management.[3] Effective regulatory management encourages growth and investment in the telecom sector, promotes technological and service innovation, and is correlated with lower prices and greater consumer choice, leading to greater service penetration. Effective regulatory management helps the telecom industry flourish and make a positive contribution to a country's overall economy.

Conversely, ineffective regulatory management can destroy value in the telecom sector, blocking innovation, hampering competition, and creating underserved consumer markets. The end result is lower revenues in the telecom sector, lower investment, and a lower contribution to a country's economy.

Issues surrounding telecom regulation are particularly important for countries in the Middle East and North Africa (MENA). These countries have made real strides in gradually liberalizing their telecom markets and introducing new technologies, but as a general rule, their approach to policy and regulation could still improve, compared with other regions. This has had a direct impact on levels of investment in the region.

This paper examines the complex factors involved in creating an effective regulatory management framework for the telecom marketplace, with particular emphasis on the MENA region. We identify the major drivers that determine a well-managed telecom sector and articulate the roles that three key stakeholders—government, regulators, and service providers—must play in order for the regulatory management dynamics to work effectively.

In addition, we recommend a set of priorities for each of these stakeholders and outline key policy and regulatory questions they should consider in order to unleash the greatest value possible from the country's telecom sector.

EFFECTIVE REGULATORY MANAGEMENT AND VALUE CREATION

Effective Regulation Creates Value
Effective regulatory management aims to establish adequate regulatory frameworks and mature regulatory practices that drive market development and optimize value creation in the long-term.

It is characterized by:

- Holistic and strategic approach to policy and regulatory issues
- Long-term regulatory planning
- Clear assignment and separation of policy and regulatory responsibilities
- Keen sensitivity to timing, such that regulatory devices—the levers used to implement and execute policy—are calibrated and enacted to meet market conditions.

Telecom sector contribution in fully competitive markets can be 3.38 percent of GDP, in contrast with only 2.33 percent in monopoly markets.[4] In fact, with an effective regulatory environment, telecommunications liberalization in the MENA region holds considerable potential for improving overall economic performance. Countries that are able to develop this type of a regulatory environment can create value for both incumbents in the market and new entrants. For example, regulatory levers enabling greater competition have been associated with a market value increase for incumbents 88 percent of the time and for new entrants 60 percent of the time.[5] Moreover, investment levels in the telecom sector as a percentage of GDP are positively correlated with effective regulatory management (*see Exhibit 1*).[6]

In the MENA region, the countries with the most advanced regulatory regimes, Jordan and Morocco, can trace back much of the success of their mobile market to effective regulatory reforms started in 1994 and 1997, respectively.[7] Jordan's mobile penetration went from 2.5 percent in 1999 (when the market was a monopoly), to 23 percent in 2002 (duopoly), to 60 percent in

> ***"For information and communications technology to serve as an engine for development, it is absolutely critical that an effective policy framework is in place."***
>
> — Jose Maria Figueres-Olsen, World Economic Forum

2006 when a fourth operator entered the market; Morocco's mobile penetration went from 1.3 percent in 1999 (when liberalization first started) to 40 percent in 2005.

Ineffective Regulation Destroys Value
In contrast to the rapid market growth seen in select MENA countries, telecom development in other MENA markets has lagged—partly as a result of constrained regulation and the effect of the resulting uncertainty on the risk calculations of potential investors.

Ineffective regulatory management is characterized by:

- Tactical, short-term, transactional thinking

- Focus on technical and legal issues to the exclusion of longer-term policy goals

- Poorly timed import of regulatory levers from other regions and markets, without customizing those levers to local realities

These factors create an unpredictable regulatory environment that represents a "regulatory risk" for most telecom operators and potential investors—in other words, inconsistency, delays, uncertainty, and policy confusion that increase the cost of doing business and deter investment.[8]

The reduced market attractiveness associated with this risk leads to under penetrated markets, lower sector revenues, lower investments, a higher cost of capital, and, ultimately, a lower contribution to the overall economy. One case study in an emerging environment showed that mobile investments were 25 percent lower, total cost of ownership 10 percent higher, and mobile market penetration 30 percent lower than they would have been had this market adopted a best practice regulatory framework.[9]

Numerous other examples of tactical or misadapted regulatory management destroying market value can be found around the world.

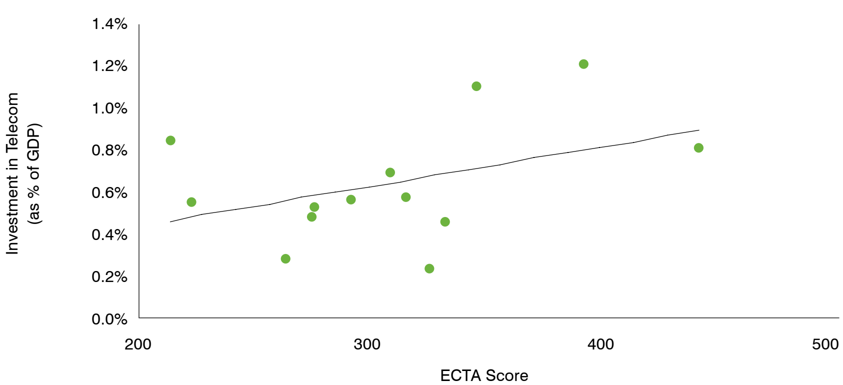
For example:

- From 1999 to 2002, license restrictions enacted in *Austria, Germany, and France* regarding allowed technologies and services (enacted to promote spectrum allocation for broadband services and break the incumbent's access monopoly) blocked service innovation. The result was limited market entry of new operators, little deployment of broadband services, and a reduction of convergence of fixed and mobile market.

- In the *Netherlands*, strict wholesale regulation adopted to promote Mobile Virtual Network Operator competition hampered Mobile Network Operator (MNO) competition. The threat of cost-recovery failure given costly infrastructure and license investments forced some MNOs toward network-only business models.

Exhibit 1
Investment Levels in the Telecom Sector Are Positively Correlated With Effective Regulatory Management

RELATIONSHIP BETWEEN EFFECTIVE REGULATION AND INVESTMENT IN TELECOM



Source: European Competitive Telecommunications Association

- *Canada and Russia* copied Receiving Party Pays (RPP) regulation from the United States into their regulatory framework. No improvements in penetration or usage rates resulted, and Russia recently signed a law to replace RPP with a Calling Party Pays system.

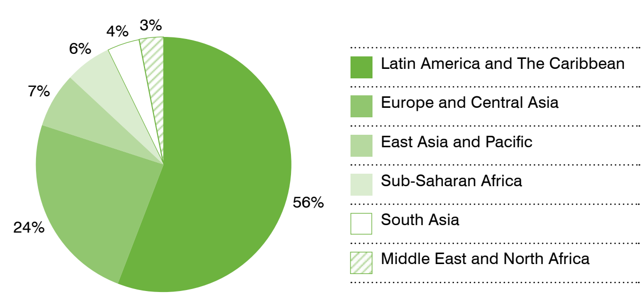
In short, the lack of an effective regulatory framework in MENA countries—and its effect on the risk calculations of potential investors—may have been major roadblocks to new investment (*see Exhibit 2*), limiting a significant opportunity for overall economic growth in the region.[10] In fact, the MENA region received about 3 percent of the overall worldwide Foreign Direct Investment (FDI) flows in telecommunications, reaching US$5.5 billion in 2004. The average MENA FDI-to-GDP ratio was only 0.07 percent—the same as for East Asia and Pacific countries, and markedly below other parts of the world. Foreign investors respond positively to a stable and predictable regulatory framework and are willing to pay more for a telecommunications company if it operates in a consistent and well-established regulatory environment.[11]

Effective regulatory practices cannot be implemented until they are thoroughly understood. The remainder of this paper discusses the components that make up an effective regulatory structure, and the role of the three key stakeholders—government, regulatory authorities, and operators—in regulatory management.

Exhibit 2
Telecom Investments in the MENA Region Lag Compared to Investments in Other Parts of the World (Latest Published Data—2004)

REGION	TELECOMMUNICATIONS FDI (US$ BILLIONS)	TELECOMMUNICATIONS FDI AS A PERCENT OF REGIONAL GDP
Latin America and The Caribbean	109.8	0.47
Europe and Central Asia	47.2	0.32
East Asia and Pacific	13.6	0.07
Sub-Saharan Africa	10.8	0.24
South Asia	7.4	0.10
Middle East and North Africa	5.5	0.07

TOTAL TELECOMMUNICATIONS FDI BY REGION



Source: WorldBank

COMPONENTS OF EFFECTIVE REGULATORY MANAGEMENT

Effective regulatory management comprises mature regulatory practices that optimize market value, and adequate regulatory frameworks that help drive market development (*see Exhibit 3*).

In other words, the effectiveness of regulatory management can be evaluated based on the extent to which it is (1) strategic rather than tactical and (2) customized to market conditions at hand rather than "copied and pasted" from other markets without due adaptation (*see Exhibit 4, page 6*).

In addition, all of the key stakeholders involved in the telecom sector—government, regulators, and operators—have distinct and important roles to play, and must embrace them fully (*see Exhibit 5, page 7*). If any one stakeholder group fails adequately to fulfill its role—like the three-legged stool with one short leg—the balance and stability of the regime will be threatened.

In brief, the role of each of these three players is as follows; they often interact and overlap, and exact roles vary across countries.

- *Government.* Government works on the macro level to enable development and advancement of the sector, the national economy, and society as a whole. It sets the main sector objectives, issues legislative levers (e.g., telecom law), and addresses policy issues of national concern to investors and operators. It also harmonizes sector-specific policy concerns with other national policy issues such as trade and the environment.

Exhibit 3
Regulatory Practices and Framework Are Main Components of Effective Regulatory Management

COMPONENT	DESCRIPTION
Regulatory Practices	- Strategic approach to regulatory management is key for addressing the complexity and inter-linkages between various levers - Stakeholders must adopt a holistic view of how regulation affects operators' strategies, the overall economy, and society - Effective regulatory practice incorporates long-term strategic planning with a consistent and transparent regulatory policy - Consultative communication process between all stakeholders is key to promote a cooperative environment
Regulatory Framework	- Regulatory frameworks must be developed with a strategic mindset to address the objectives proper to the telecom market under reform - Regulatory levers that were used in other regions should be tailored and fine-tuned to local conditions

Source: Booz & Company

Government utilizes a variety of levers, often set forth as statutory mechanisms, to ensure that sector policies remain in line with national aspirations and objectives.[12]

- *Regulatory Authority.* The Regulator acts as a guardian for the sector. It implements national policies, develops regulations, monitors and reports on sector growth, and referees disputes between competing stakeholders, including consumers. Unlike traditional top-down regulated utility environments, the regulator intervenes only when competitive market dynamics fail to yield optimal results. Regulators' enforcement powers must be used judiciously, but are critical to the development of public confidence in the regulator.

- *Telecom Operators*. By actively participating in regulatory processes, operators help shape the development of a well-adapted, market-specific policy and regulatory environment. Telecom operators bring to the table a practical understanding of market operations, development incentives, and enablers. They also provide needed access to resources (i.e., infrastructure and customers) and provide insight into technological capabilities.

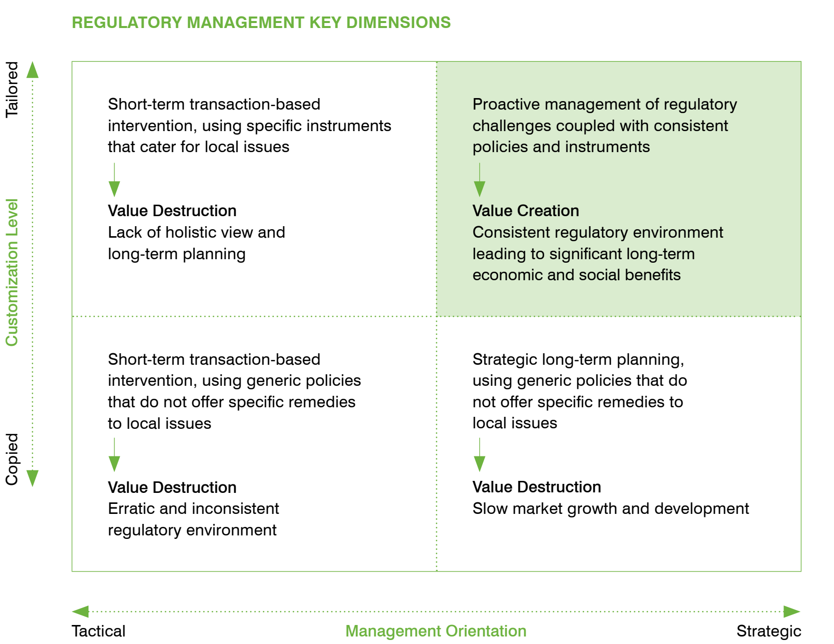
Ultimately, it is the end-user who, if not the target of effective regulatory management, is the player most positively impacted by it. It is the customer that benefits from the increased choice of service providers and services, the more developed telecom landscape, and the effective competition between operators.

It is this developed competitive landscape that results in lower prices, more advanced technologies, and greater service variety, all of which serve to increase penetration and adoption of telecommunications technologies and services.

In examining the roles of these three main players, we have identified nine key levers that government, regulatory authorities, and operators can adopt to help enhance the growth of the telecom sector in the MENA region. These are shown in *Exhibit 6*.

These nine levers and the critical contribution they make toward unleashing value in the MENA telecom market are discussed in detail in the following sections.

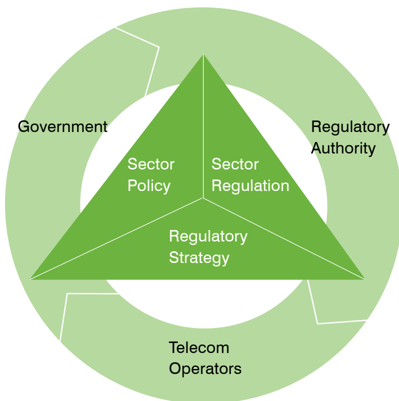
Exhibit 4
Strategic, Customized Regulations Enhance Value; Tactical, Off-The-Shelf Regulations Destroy It



Source: Booz & Company

Exhibit 5
Effective Regulation Depends on the Work of Government, Regulatory Authorities, and Telecom Operators

TELECOM REGULATORY MANAGEMENT DYNAMICS



Source: Booz & Company

Exhibit 6
Nine Key Levers That Can Accelerate Telecom Sector Growth in the MENA Region

EFFECTIVE TELECOM REGULATION DEVELOPMENT LEVERS		
Government	G1: Regulatory Independence	Policies defining the independence of the Regulator from the influence of Government or commercial entities
	G2: Participation Level	Policies and regulation governing state ownership in the telecom sector
	G3: Financial Obligations	Policies governing financial obligations imposed on telecommunications operators (e.g., royalties)
Regulator	R1: Management Practice	Core values governing best practice regulatory management
	R2: Licensing Framework	Regulation related to the nature of the licensing regime enabling technologies and services (e.g., VoIP)
	R3: Competition Regulation	Regulation governing new entrants' ability to compete with incumbent
	R4: Market Access Conditions	Regulation governing accessibility to consumers and resources (e.g., interconnection, number portability, etc.)
Operator	O1: Regulatory Management Capabilities	Operating and human capabilities required to define comprehensive regulatory strategies and planning
	O2: Communication Strategy	Communication approach aiming to find a balance between the often conflicting interests of different stakeholders

Source: Booz & Company

THE ROLE OF GOVERNMENT

G1: Ensure Regulatory Independence
To fulfill their legal mandate more effectively, governments must empower regulators to achieve structural and financial independence. To achieve this end, government must not only issue a policy decision to create an independent regulatory agency, but also empower the agency to act independently and effectively.

Specifically, government must:

- *Ensure political independence* by providing the regulator with a distinct legal mandate, free of ministerial control; appointing regulators for fixed terms; and protecting them from arbitrary removal.

- *Ensure financial independence* by providing the agency with a reliable and adequate source of funding and the legal means to achieve self-financing.

- *Ensure institutional independence* by creating a separate regulatory institution.

- *Ensure commercial independence* by insisting on a high degree of transparency in the appointment and functions of the regulator and board members, to avoid "regulatory capture."

The MENA region has achieved sensible progress; however, regulators in the region could further advance their political and financial independence, as shown in *Exhibit 7*.

Countries that successfully establish regulatory independence reap numerous benefits. They increase the credibility, transparency, and long-term sustainability of the regulator. They validate the sector's management approach, thereby ensuring compliance with international trade commitments. They increase sector attractiveness and investments, thereby increasing revenues from licensing, spectrum, and other regulatory fees. And, they help to reduce government overhead and financial and resource drain.

It is important to note that this is an evolutionary process; complete independence may not be achieved from the start, when the rest of the environment is not fully ready. The key message is that the MENA region is heading in the right direction.

G2: Reduce Government Ownership of Incumbents
To promote telecom sector investments, regional governments should continue reducing their ownership of incumbents. Lower ownership levels create a more

attractive telecom sector for more players, as shown in *Exhibit 8* *(see page 10)*.[13]

Lower ownership does not prevent the government from guiding the sector toward a healthy development path. Working in cooperation with regulators and operators, governments can and should continue to play a pivotal role in shaping the development of the industry.

Although MENA countries began the liberalization of their telecommunications markets in the last decade, most have yet to reduce government ownership levels. *Exhibit 9* *(See page 10)* shows the extent to which MENA countries lag behind their contemporaries with regards to government telecom ownership.

G3: Identify Appropriate Financial Obligations for Operators

The third key action that the government should take toward setting a favorable environment for telecom sector development is to identify an appropriate level of financial obligations to impose on operators.

Some degree of financial obligations is necessary, for example in the form of corporate taxes; contributions raised are used to finance regulatory oversight activities, research programs, and Universal Service Funds. The key is that financial obligations must be robust enough to fully finance these activities, but modest enough to promote the sector attractiveness and increase reinvestments.

In general, governments should aim to develop and implement policies that gradually reduce financial

Exhibit 7

International Benchmarks Show That Regulators in the MENA Region Could Further Advance Their Political and Financial Independence

REGULATORY INDEPENDENCE BENCHMARKS—MENA VERSUS OTHER COUNTRIES (2006)

COUNTRY	REGULATORY BODY	SETUP YEAR	INDEPENDENT CHAIRMAN	INDEPENDENT BOARD	INDEPENDENT FROM MINISTRY	SELF-FINANCED
Algeria	ARPT	2001	x	x	●	●
Bahrain	TRA	2002	●	●	●	●
Egypt	NTRA (formerly TRU)	1998	x (minister)	●	●	●
Jordan	TRC	1995	●	●	●	●
Morocco	ANRT	1997	●	●	●	●
Oman	TRA	2002	x (minister)	●	●	Self financed, may use treasury help if in deficit
Saudi Arabia	CITC (formerly SCC)	2001	x (minister)	●	●	Self financed and government appropriation
UAE	TRA	2003	●	●	●	Self financed and government appropriation
Australia	ACMA (formerly ACC)	1997	●	●	●	Fees, government appropriation, operator contributions
France	ARCEP (formerly ART)	1996	●	●	●	Government appropriation
Germany	Bnetza (formerly RegTP)	1998	●	●	●	Fees, government appropriation, operator contributions
Singapore	IDA	1999	●	●	x	●
Switzerland	ComCom	1997	●	●	●	Government appropriation
UK	OFCOM (formerly Oftel)	1984	●	●	●	Fees, government appropriation, operator contributions
USA	FCC	1934	●	●	●	Fees and government appropriation

Sources: Regulator websites; Booz & Company obligations, often observed in the form of royalties, from their current levels. Doing so enhances the attractiveness of the sector by increasing investment levels and encouraging the entry of new players into the market. It also encourages innovation by allowing operators to invest their increased profits in high-growth projects.

Indeed, the general trend worldwide is toward imposing lower financial obligations on telecom operators. Algeria and Egypt recently announced a reduction of their corporate tax rates from 30 percent to 25 percent and from 42 percent to 20 percent, respectively; and Saudi Arabia, Germany, Canada, Poland, and Ireland have all reduced their financial obligation levels substantially between 2000 and 2005.

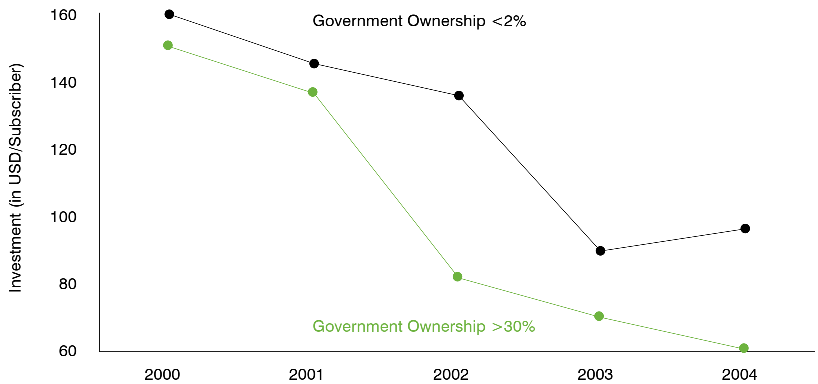
Nonetheless, many MENA countries continue to impose higher financial obligations on corporations than do many of their contemporaries, as shown in *Exhibit 10*.[14]

Government: Key Priorities, Key Considerations

In sum, the government's contribution to creating value in the telecom sector is in establishing independent supervision and regulatory authorities and adopting enabling sector development policies.

Exhibit 8
Reduced Government Ownership Is Correlated With Higher Telecom Investment

EFFECT OF GOVERNMENT OWNERSHIP ON TELECOM INVESTMENT



Source: ITU; EMC World Cellular Database; Zawya; Arab Advisors Group; Booz & Company

Exhibit 9
MENA Countries Have Yet to Reduce Government Ownership in the Telecom Sector

GOVERNMENT OWNERSHIP OF INCUMBENT (SELECTED COUNTRIES) (2006)

COUNTRY	INCUMBENT	GOVERNMENT SHARE IN INCUMBENT
Italy	Telecom Italia	0%
Spain	Telefonica	0%
UK	BT	0%
Ireland	Eircom	0%
Portugal	Portugal Telecom	1.80%
Netherlands	KPN	14.20%
Jordan	Jordan Telecom	14.65%
Austria	Telekom Austria	26.00%
France	France Telecom	33.00%
Morocco	Maroc Telecom	34.10%
Bahrain	Batelco	44.33%
UAE	Etisalat	60.00%
Saudi Arabia	Saudi Telecom	70.00%
Oman	Omantel	70.00%
Algeria	Algerie Telecom	100.00%

MENA Countries
Non-MENA Countries

Note: Excluding public institutional investors
Sources: Government websites; ITU; GlobalInsight; Arab Advisors Group; Booz & Company

Exhibit 10
MENA Countries Impose Higher Financial Obligations on Telecom Operators Than Do Many of Their Contemporaries

MAIN FINANCIAL OBLIGATIONS ON TELECOM OPERATORS (2006)

COUNTRY	CORPORATE TAX/ PROFIT SHARE	REVENUE SHARE
Algeria	25%	—
Bahrain	—	1%
Canada	22.12%	—
Egypt	20%	6%
France	33.33%	—
Germany	26.38%	—
Hungary	16%	—
Ireland	12.5%	—
Jordan	25%	10%
Morocco	35%	—
Oman	12%	12%
Poland	19%	—
Saudi Arabia	2.5%	15%
Singapore	20%	—
UAE	40%	—
United Kingdom	30%	—

Note: Excludes other financial obligations (e.g., universal service contribution, spectrum fees, etc.)
Sources: Arab Advisors Group; Regulator websites; Operator websites

Governments should focus on the following key priorities to contribute to effective regulatory management:

- Establish a telecommunications act based on the principles of fair competition
- Create an effective national regulatory authority empowered to have structural and financial independence as appropriate to the local conditions
- Define long-term policy goals linked to national, social, and economic development targets
- Enact appropriate and enabling policies, complemented by comprehensive government-sponsored initiatives
- Identify optimal state ownership level to promote sector investments and maximize overall returns
- Identify the appropriate level of financial obligations imposed on operators to promote sector attractiveness and increase reinvestment

Governments should consider the following key questions as they begin developing policies for their telecom sectors:

- What objectives and incentives need to be set to enhance the national adoption of information and communications technologies?
- What policy changes are required to enhance the attractiveness of the sector and increase investment?
- What initiatives and programs are required to promote service penetration and content creation?
- What is the best approach to enable greater structural and financial independence for the regulator?
- How could best-in-class infrastructure for telecom-dependent economic sectors be promoted?
- How could the telecom sector's contribution (direct or indirect) to government revenues be optimized while addressing government needs and ensuring sector development?
- How could World Trade Organization commitments in telecommunications be fulfilled while ensuring gradual and balanced market liberalization?

Governments should develop and implement policies that gradually reduce financial obligations.

THE ROLE OF REGULATORS

R1: Abide by Four Key Driving Values
To ensure market growth and overall sector development, regulatory authorities must abide by four key driving values: transparency, efficiency, independence, and non-discrimination (*see Exhibit 11*). These values represent best practices in modern regulation.

Achieving these goals is not always simple, particularly as MENA countries transition from entrenched monopoly-based systems to more liberalized market structures. Common problems include the following:

In regard to transparency, information on regulatory consultations and on plans for the sector are not always shared or published, justification for decision not made public, and opportunities for operator or consumer feedback not provided.
In regard to efficiency, regulatory authorities can be plagued with unreasonably long time lines for handling basic duties, sometimes giving certain cases disproportionate attention or making unnecessary requests from operators.

When an agency is not fully independent, there may be heavy, unnecessary regulatory intervention in the operator's functions, a weak appeals process, and little external accountability.

And when an agency does not practice non-discrimination, decisions often favor incumbents and do not seek to curb anti-competitive practice due to limited regulatory resources. Other times, decisions can be overly biased in favor of new entrants to the unfair detriment of the incumbent. In both cases it is the customer that is harmed.

Many of these problems will be addressed over time as markets in the MENA region mature and regulatory practices correspondingly evolve. *Exhibit 12* provides a snapshot of where countries in the MENA region currently stand in regard to adopting the four key practice values discussed above.

Exhibit 11
Four Key Values For Regulators

VALUE	DESCRIPTION
Transparency	Regulators should conduct business in collaboration with all affected parties (i.e., consulting with stakeholders, integrating their position, and clarifying and substantiating their publicized decisions)
Efficiency	Regulators should perform their duties and responsibilities quickly and efficiently, dependent on the presence of sufficient, relevant expertise, and adequate processes and systems
Independence	Regulators should be able to perform their expected duties without external influences (i.e., political or stakeholder-related); in addition, they should be effectively held accountable for their decisions and behavior
Non-Discrimination	Regulators should operate in an objective, non-discriminatory manner in relation to the different stakeholders while moving from sector-specific regulation to competition law principles

Source: Booz & Company

R2: Adopt Service- and Technology-Neutral Licensing and Regulatory Frameworks
In general, advanced telecom sectors tend to adopt service- and technology-neutral licensing and regulatory frameworks. In 2002, for example, the European Union issued Authorization Directive 2002/20/EC, which created a common legal framework for the provision of telecommunications services. The directive removed barriers to entering the market—licensing of services has been eliminated in favor of a registration process—and allowed for an easier convergence of services. Of course, the use of scarce resources such as frequency spectrum is still subject to regulation.

Jordan has also adopted a neutral licensing regime. Two types of licenses are available (Class and Individual licenses); new entrants apply for one or the other, depending on their need for scarce resources, and there is no limit on the number of class licenses that are granted or on the type and range of non-public mobile wireless services that can be provided. A wide variety of technologies and services can now be deployed immediately in Jordan by licensed operators, without obtaining further approval—WiFi, WiMax, OnePhone, VoIP (both fixed and mobile), Triple Play, Mobile TV, IPTV, and Blackberry. Deploying these technologies in other countries would require further regulatory authorization, approval, and in some cases, legal amendments.
The benefits of neutrality are numerous. Neutrality removes regulatory preference from

competitive technology choices and allows operators to:

- Increase service variety
- Increase revenue streams
- Reduce inefficiencies.

The ultimate beneficiaries are consumers, who are able to enjoy a wider range of services and technologies, and operators, who are able to enjoy the resulting increase in service penetration and technology uptake.

Moreover, neutrality allows operators to innovate and keep up with dynamic international technology and service developments, especially those related to network and service convergence. This is particularly important because telecom revenues are expected to evolve toward converged technology and away from traditional revenue streams in coming years.

Neutrality also gives regulators more room to liberalize VoIP. Countries in Europe and Asia that have done so have been able to attract an increased number of entrepreneurs and investors to the sector, and have also increased the

Exhibit 12
Regulatory Practices In Arab Countries Are Still Evolving Toward a "Best Practices" State (2006)

PRINCIPLE	PROXY INDICATORS	ALGERIA	BAHRAIN	EGYPT	JORDAN	MOROCCO	OMAN	SAUDI ARABIA	UAE
Transparency	Frequency of recourse to public consultations to inform major decisions (ideally, a legal obligation)	x	●	x	●	●	●	●	x
	Time given to stakeholders to reply to such consultations (ideally 3 to 6 weeks)	x	●	x	●	x	●	●	x
Efficiency	Time required to obtain reservation of number ranges (less than 20 days)	x	●	●	●	●	●	●	x
	Time required to negotiate new interconnection agreements (less than 100 days)	●	●	●	●	●	●	●	x
Independence	Management's term (ideally limited to four or more years)	x	●	x	●	●	x	●	●
	Grounds of removal of management (ideally fraud or serious fault)	x	●	●	●	●	x	x	●
	Limited state ownership or control over regulator or its resources	x	●	x	●	x	x	x	x
Non-Discrimination	Reference Interconnection Offer available	●	●	x	●	●	●	●	x
	Symmetric retail tariff regulation	●	●	x	●	●	●	●	●
	Sector-specific dispute management process								
	- Interconnection dispute resolution	●	●	x	●	●	●	●	●
	- Consumer complaint process	x	●	●	●	x	x	●	x

Note: Limited state ownership or control over regulator and resources includes length of terms, number of terms, and financial control of regulator.
Sources: WorldBank; ITU; Arab Advisors Group; Regulator websites; Operator websites; Booz & Company

attractiveness of broadband, helping drive its penetration and enabling the adoption of multi-play services.

VoIP is expected to cannibalize international voice revenues in the short-term, which may partially explain its slow legalization in the MENA region (*see Exhibit 13*). However, it is expected to drive greater sector growth in the long-term, as it is proving to be a key application for fast-tracking Broadband penetration. Broadband penetration, in turn, is important to the development of e-commerce and any other industry that leverages information services.

R3: Identify and Sanction Anti-Competitive Practices
In addition to embracing the four "best practice" values of telecom regulation, regulatory authorities must have the capacity to identify anti-competitive practices and the power to sanction them when they occur.

Anti-competitive practices come in a variety of forms (*see Exhibit 14*).

To guard against these practices, regulators should begin by implementing and publishing regulations outlining fair competitive practices and pricing frameworks. This should be done in consultation with key stakeholders to encourage buy-in from all parties affected by the regulations. Regulators should also clearly define the key telecom markets in which competitive regulation will be implemented, define and identify the holders of significant market power in those key markets, and define anti-competitive practices.

As further protection, regulators can:

- Apply price squeeze tests and review alleged discriminatory prices for access to wholesale products
- Develop clear price control mechanisms
- Create accounting separation and cost accounting guidelines and obligations
- Create guidelines for cost-oriented interconnection and other access charges
- Create access provisioning guidelines that require services to be enabled in short, reasonable time frames
- Put dispute resolution capabilities and systems in place
- Use their enforcement and sanctioning power capabilities to ensure compliance with decisions
- Review potential mergers and acquisitions.

In the end, review, guidelines, and regulations mean little if regulators are not given the legal mandate to enforce them—to penalize operators who they identify as practicing anti-competitive behaviors. *Exhibit 15* provides a snapshot of the current sanctioning powers of regulators in selected MENA countries.
R4: Ensure Access to Resources
The final key role for regulators is to ensure that all operators in the telecom marketplace have adequate access to necessary resources—both infrastructure and customers.

Access to Infrastructure. Regulators need to assess their current environment and decide upon the right approach to managing the country's telecom infrastructure. Infrastructure models generally fall into one of two camps: *a virtual separation model*, in which the incumbent retains control of its infrastructure, and a *full structural separation model*, in which the incumbent's infrastructure is managed by a structurally and operationally separate company. The latter model may gain increasing relevance in the future (*see Exhibit 16, page 17*).

- *Virtual separation* is an easy-to-implement model that allows new market entrants quick access to infrastructure and ensures a fast rate of unbundling. It does require careful regulatory oversight to ensure that incumbents manage infrastructure sharing appropriately.

  However, it has been used successfully worldwide—France, for example, adopted this framework in 2003 as a way of helping new entrants compete fairly with the incumbent. As a result, France now enjoys one of the highest unbundling rates in Europe.

- *Full structural separation* is adopted when an incumbent's infrastructure-sharing system is found to be inefficient or unfair. Full structural separation is considerably more complex to implement than virtual separation, and incumbents often resist its adoption. Moreover, the benefits of this type of system cannot be fully realized until after the complete liberalization of the telecom market. In the long run, however, adopting a full structural separation will attract investment in the sector and encourage the infrastructure company to keep infrastructure modernize, so as to best attract clients.

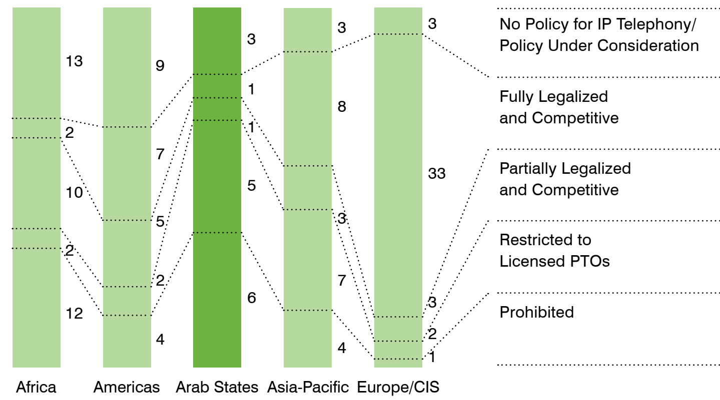
  Full structural separation was adopted in the UK as its regulator, Ofcom, believed that despite its own best efforts in interconnection and accounting separation, new entrants did not have fair access to the incumbent's local loops. Openreach now manages the last

Exhibit 13
VoIP Is Embraced in Some MENA Countries, Prohibited In Others

STATE OF VOIP IN A SELECTION OF MENA COUNTRIES (2006)

Algeria	- Legal for licensed operators - Blocking of VoIP applications by some operators
Bahrain	- Legal - No blocking
Egypt	- Legal for licensed operators - Blocking of VoIP applications by some operators
Jordan	- Legal - No blocking
Morocco	- Legal for licensed operators
Oman	- Legal for licensed operators
Saudi Arabia	- Policy for VoIP is under review
UAE	- Allowed for existing licensed operators - Blocking of VoIP applications

ITU MEMBER COUNTRIES AND VOIP REGULATION (2005)



Note: VoIP is allowed in the UAE only for the two existing licensed operators (Etisalat and du)
Sources: ITU; BroadbandTrends; Booz & Company

Exhibit 14
Anti-Competitive Practices Hurt Telecom Sector Growth

PRACTICE	DESCRIPTION
Unjust Discrimination (Price or Other Terms)	Discriminating between operators within access and other agreements
Vertical Price Squeezing	Attempting to harm a competitor by charging high wholesale prices
Service Bundling	Attempting to force users or competitors to buy service bundles
Predatory Pricing	Pricing below cost in order to harm a competitor
Cross-Subsidization	Subsidizing one service with revenues from another
Lack of Technical Specifications or Lack of Interoperability	Not providing proper specifications to competitors that the operator is sharing infrastructure or interconnecting with
Misuse of Competitor Information	Illegally obtaining and using competitor information
Arrangements that Restrict or Distort Competition	Entering into exclusivity, boycott, or other agreements in order to distort competition
Refusal to Deal or Delay in Supply of Essential Facilities	Preventing competitors from getting essential services or facilities in order to harm their market position

Source: Booz & Company

Exhibit 15
Successful Regulation Depends on the Sanctioning Power of the Regulatory Authority

PROXY INDICATORS	ALGERIA	BAHRAIN	EGYPT	JORDAN	MOROCCO	OMAN	SAUDI ARABIA	UAE
Regulator's powers are defined by law	●	●	●	●	●	●	●	●
Regulator has the ability to impose fines with deterrent effects	x	●	x	●	x	●	●	●
Regulator has exercised ability to impose financial penalties	●	●	●	●	x	x	x	●

Sources: Regulator websites; WorldBank; ITU; Booz & Company mile of British Telecom's (BT) infrastructure. Although the business unit is still a part of BT, it operates separately and provides equal access to all operators.

Access to Customers. For new entrants in the telecom market to succeed, they must be able to access not only infrastructure, but also customers. Effective customer access regulation is subject to four key principles: fair and timely interconnection, number portability, unbundling, and carrier selection (*see Exhibit 17*).

Exhibit 18 illustrates the extent to which MENA countries practice these four key principles, in comparison with other countries around the world.

Regulators: Key Priorities, Key Considerations
In sum, regulators must implement tailored regulatory frameworks and adopt effective management practices to maintain a competitive marketplace and foster long-term sector development.

Regulators should focus on the following key priorities to enable effective market regulation:

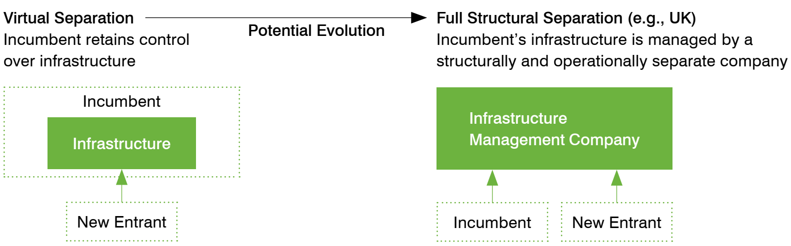
- Demonstrate independence, transparency, efficiency, and non-discrimination in regulatory practices
- Develop appropriate resources and skills
- Communicate a clear set of regulatory policy objectives and targets
- Implement consistent and transparent regulatory policies and conduct regular consultation with stakeholders
- Encourage local and foreign investment in telecom infrastructure and services
- Ensure fair competition among telecom sector players
- Ensure the provision of innovative, reliable, and affordable telecom services

Regulators should consider the following key questions as they begin developing regulations for their markets:

- How could safeguarding competition and promoting innovation be balanced?
- How could an optimal infrastructure-sharing model be achieved?
- Should content be regulated? If so, by what entities?
- How are markets defined in this era of convergence?
- Should Next Generation Networks be subject to access regulation?
- How could the liberalization of VoIP help achieve greater sector growth?
- How effective is spectrum management in allocating new frequencies on demand?
- What are the key elements for effective dispute resolution?

Exhibit 16
Two Approaches To Managing National Infrastructure

APPROACHES TO MANAGING NATIONAL INFRASTRUCTURE



Source: Booz & Company

Exhibit 17
Four Key Principles Ensure Effective Customer Access

PRINCIPLE	DESCRIPTION
Fair and Timely Interconnection	Users of one communications provider can communicate with users of another. Fair interconnection is provided efficiently, with high service quality and at cost-oriented prices
Number Portability	Users can retain their telephone number when they change their chosen network operator/service provider, location, or service
Unbundling	New entrant is given access to the network components needed to replicate the service offering of the incumbent and serve the subscriber with all requested services
Carrier Selection	Users can select alternative communications providers to complete their calls (with or without dialing additional codes on the telephone)

Source: Booz & Company

Exhibit 18
MENA Countries Are Still to Implement Regulations That Provide Market Entrants Full Customer Access (2006)

COUNTRY	FAIR INTERCONNECTION	NUMBER PORTABILITY	LOCAL LOOP UNBUNDLING	CARRIER SELECTION
Algeria	●	x	○	x
Bahrain	●	○	●	●
Egypt	●	○	x	x
Jordan	●	○	○	●
Morocco	●	○	●	●
Oman	●	●	○	○
Saudi Arabia	●	●	○	○
UAE	●	○	x	○
Austria	●	●	●	●
Belgium	●	●	●	●
France	●	●	●	●
Hungary	●	●	●	●
Ireland	●	●	●	●
Spain	●	●	●	●
UK	●	●	●	●

● Implemented
x Not Implemented
○ Planned

Sources: Regulator websites; Operator websites; ITU; Booz & Company

THE ROLE OF OPERATORS

Operators need not be passive players in the regulatory environment, patiently waiting for guidelines and direction to be "handed down" from regulatory authorities. Rather, they can and should take an active role in the development of their national regulatory frameworks. To this end, they should focus on (1) building effective regulatory management capabilities within their organizations, and (2) communicating proactively and intensively with regulatory authorities.

O1: Build Effective Regulatory Management Capabilities

Six key factors can help operators build effective regulatory management capabilities within their organizations (*see Exhibit 19*).

Exhibit 19
Key Success Factors For Effective Regulatory Management By Operators

FACTOR	DESCRIPTION
Corporate Positioning	- Position regulatory management on the top management agenda - Empower regulatory management and enable agile decision making - Enable overarching view of overall business priorities
Strategic Integration	- Adopt a strategic, integrated, long-term approach to regulatory management - Closely integrate regulatory strategy and business strategy development - Eliminate regulatory barriers that could block execution of business strategies
Robust Analytics	- Proactively compile and analyze intelligence on regulation stakeholders potential direction - Ensure consistency between position on various regulatory topics, in both the short and long term - Systematically assess the economic, social, and strategic impact of regulation to support operator direction - Ensure that adopted regulations are practical and provide sufficient incentives
Proactive Lobbying	- Anticipate and work on influencing regulatory decisions and overcoming incumbent obstacles well in advance - Minimize regulatory risks and enable the effective execution of business strategies - Counterbalance the influence of incumbent and other potential stakeholders with different interests - Contribute to maturing the regulator and incumbent's culture and practices
Aligned Culture and Capabilities	- Effectively organize and staff the regulatory and legal affairs function - Attract and build qualified and experienced resources in business strategy and administration, law and regulations, economics, telecom engineering, and communication and public relations - Develop a mission-oriented, knowledge-based, strategically focused, and cooperative culture
Enabling Operating Model	- Appoint a single point of contact for internal and external communication - Ensure efficiency and effectiveness of internal regulatory management processes and support with KPIs - Ensure complementary contributions between regulatory management and corporate and sector resources

Source: Booz & Company

In addition, as their markets develop, operators should increase the scope and impact of their regulatory function. Although most regulatory functions are concentrated around transactional operations, as markets mature, functions are added on top of the transactional regulatory operation, including strategic planning, regulatory analyses and public affairs. This evolution can be seen in *Exhibit 20*.

O2: Communicate Proactively and Intensively with Regulatory Authorities

To successfully drive the development of a fair regulatory environment and a healthy telecom sector, operators must adopt a proactive, communication-intensive approach to dealing with emerging regulatory challenges and interacting with regulatory authorities.

To this end, they should strive to develop positive, professional relationships with regulatory authorities that are assertive and at the same time receptive to change. Doing so will allow operators to comfortably engage with regulators on a variety of topics, from specific decisions to the overarching strategic vision for the sector (*see Exhibit 21*).

Exhibit 20
As Markets Mature, Operators Must Be Prepared to Broaden the Scope of Their Engagement Capabilities

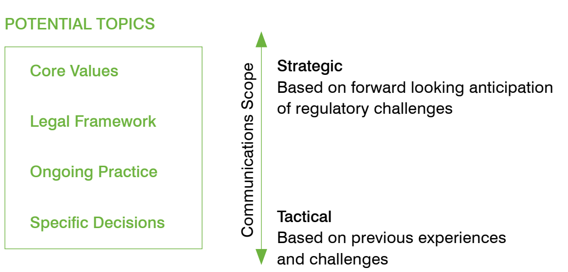
REGULATORY MANAGEMENT FUNCTIONS EVOLUTION

	Pre-Competitive Market				Mature Competitive Market			
KEY FUNCTIONS AND ACTIVITIES	TELUS CANADA 1994	TELEKOM AUSTRIA 1998	FRANCE TELECOM 1998	DEUTSCHE TELECOM 1999	TELUS CANADA 2003	TELEKOM AUSTRIA 2005	FRANCE TELECOM 2005	DEUTSCHE TELECOM 2005
Regulatory Strategic Functions - Regulatory Planning - Regulatory Counseling	◔	◔	◔	◔	●	●	◕	●
Regulatory Transactional Operations - Retail/Wholesale/Technical Regulation - Complaints	◕	◕	◕	●	●	●	◕	●
Regulatory Analyses and Studies - Market Intelligence - International Benchmarks	◔	◔	◔	◔	◕	◕	●	●
Public Affairs - Lobbying for Regulatory Reform - Lobbying for Fair Market Liberalization	◕	◔	◔	◔	●	◕	◑	●

○ Not Covered
◑ Partially Covered
● Fully Covered

Source: Booz & Company

Exhibit 21
Operators Should Engage With Regulators on Topics Ranging From Strategy to Tactics



Source: Booz & Company

In doing so, operators have a variety of communication channels open to them (*see Exhibit 22*). The most successful operators will take advantage of them all.

Of course, operators should not limit their communications effort to regulators alone. Rather, they should develop a strategic communications plan that addresses all of the key stakeholders who play a role, however indirect, in regulatory affairs.

Operators should leverage key shareholders, the board of directors, senior management, regulatory affairs resources, and other employees to effectively implement their strategic communication plan. The audience could include policy makers, regulators, public bodies, opinion leaders, customers, and competitors.

Operators: Key Priorities, Key Considerations

In sum, operators should partner with the government and regulator and play an active role in shaping the regulatory environment and safeguarding business and national interests.

Exhibit 22
Operators Can Use a Variety of Communication Channels

CHANNEL	COMMUNICATIONS GOAL
Proactive Communications With The Regulator	- Push forward cooperative regulatory research - Promote dialogue and a consultative approach
Public Forums and Industry Associations	- Establish a forum for discussion on the regulatory topics - Leverage best practice from other markets and monitor regulatory developments
Public Consultations	- Participate in public consultations and provide insights through format channels - Provide timely and comprehensive analysis, supported by benchmarks when available

Source: Booz & Company

CONCLUSION: SIGNIFICANT OPPORTUNITY EXISTS IN THE MENA REGION

The worldwide telecommunications sector has grown considerably over the past several years, reaching estimated revenues of $1.2 trillion in 2006, or just under 3 percent of the gross world product.[15] Significant potential now exists for fully developing the region's telecom sector, unleashing its full market value and, accordingly, increasing the sector's overall contribution to the regional economy.

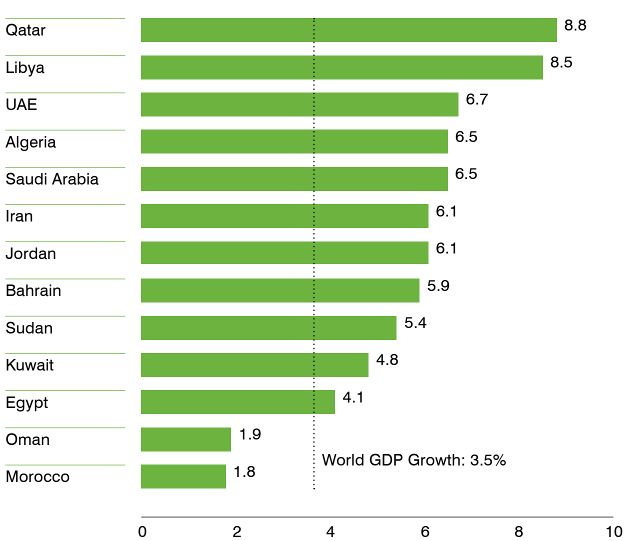
The consumers are there to make this happen. In 2006, real GDP growth in the MENA region surpassed that of the rest of the world by nearly 2 percent. And from 2000 to 2005, average population growth rates in MENA countries consistently exceeded those of the rest of the world (*see Exhibit 23*).

Moreover, both connectivity and broadband penetration in the region remain very low; particularly in countries outside of the Gulf region (*see Exhibit 24, page 22*). Countries with Total Country Connectivity Measure (TCCM) of less than 200 percent have large gaps in connectivity, which translate into much room for growth. And throughout the MENA region, low internet and broadband penetration rates are observed, which again, translates into significant room for growth. Growth in the broadband sector can also drive the uptake of advanced services and technologies such as VoIP.

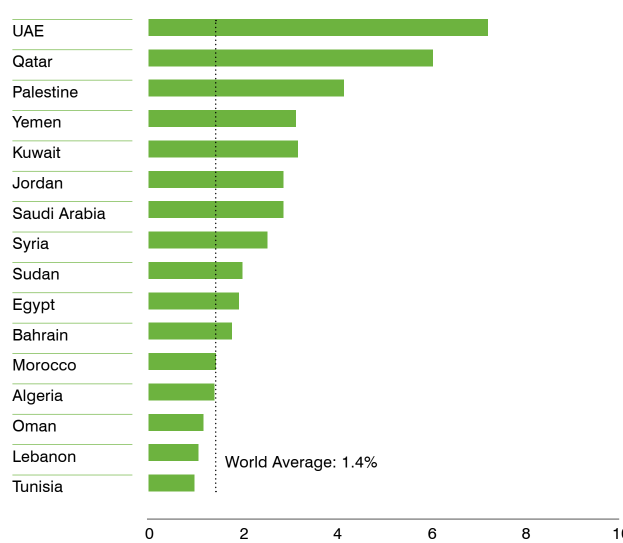
In addition, although many MENA countries, particularly those in the Gulf region, have advanced in

Exhibit 23
Real GDP Growth and Population Growth in the MENA Region Exceed Those in the Rest of The World

SELECTED MENA COUNTRIES REAL GDP GROWTH (2005)



AVERAGE POPULATION GROWTH RATE IN THE MENA REGION BETWEEN 2000 AND 2005 (%)

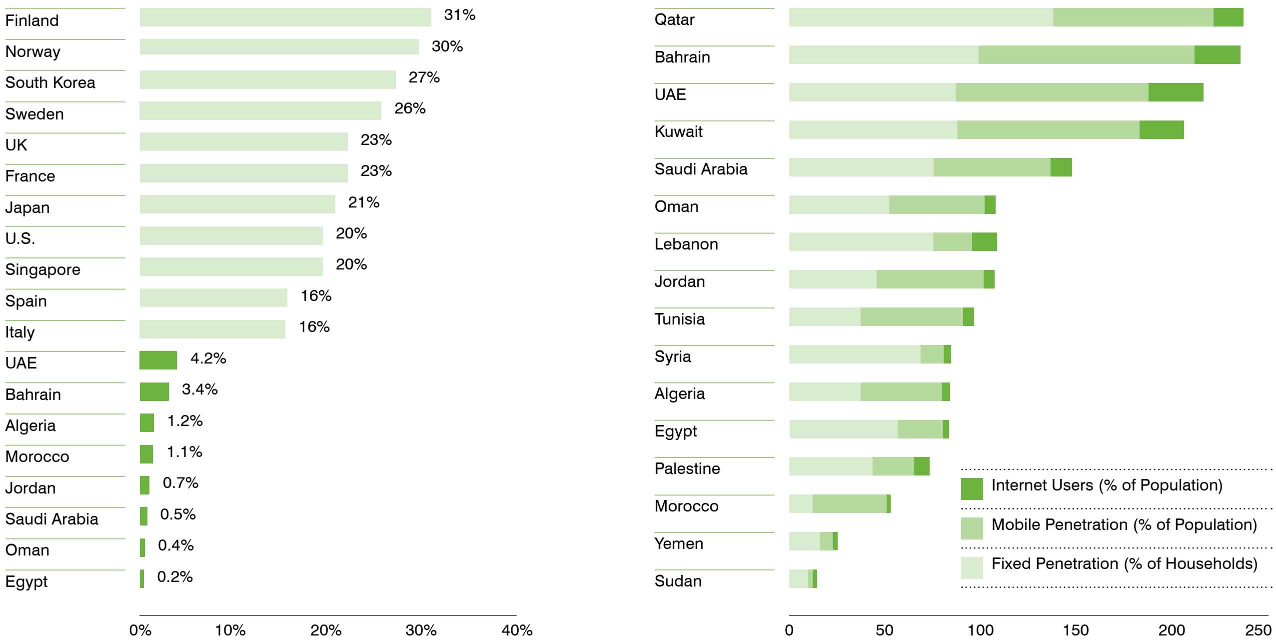


Sources: WorldBank; Economist Intelligence Unit; IMF; Booz & Company

Exhibit 24
Connectivity and Broadband Penetration in MENA Are Very Low, Leaving Tremendous Room for Growth

BROADBAND PENETRATION IN A SELECTION OF COUNTRIES (AS A % OF POPULATION) (2006)

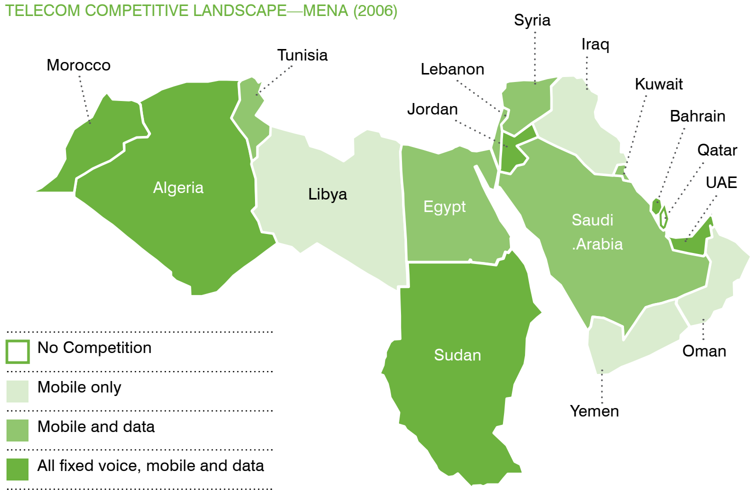
TOTAL COUNTRY CONNECTIVITY MEASURE (TCCM) SELECTED MENA COUNTRIES (2005)



Note: Based on June 2006 data
Sources: ITU; Arab Advisors Group; Forrester Research; Booz & Company

Exhibit 25
Competition in the Telecom Landscape Is Still in Progress

TELECOM COMPETITIVE LANDSCAPE—MENA (2006)



Source: Economist Intelligence Unit; ITU; Arab Advisors Group; World Bank; PPIAF; Booz & Company liberalizing their telecom markets, there is still room for improvement (*see Exhibit 25*). Algeria, Bahrain, Jordan, Morocco, Sudan, and the UAE have all licensed new fixed operators, Saudi Arabia is planning to license new fixed operators in 2007. With the exception of Qatar, all MENA countries have at least two mobile operators. However, full competition has not been established throughout the region. Jordan and Bahrain remain the only two countries fully open to competition.

On the other hand, overall, private participation in infrastructure in the region is increasing. Investment increased dramatically between 2002 and 2005, jumping from around US$1.6 billion in 2002 to US$6.7 billion in 2005. Investment in infrastructure not only brings economic benefit to the region, but also positively influences the availability and quality of telecom services by ensuring the availability of infrastructure, spurring innovation.

Encouraging this trend toward private participation and market liberalization will require careful action on the part of governments, regulators, and operators.

All three players in the telecom sector—government, regulators, and operators—can help accelerate market growth in the MENA region by working together to institutionalize effective regulatory frameworks and practices. These frameworks and practices will help increase investments, increase innovation, and drive higher adoption and usage rates. The end result will be a higher contribution to the region's overall economic and social development.

Operators should focus on the following key priorities to contribute to effective regulatory management:

- Position regulatory management on the top management agenda of their organizations
- Closely integrate the development of regulatory strategies and corporate/business strategies
- Proactively compile and analyze intelligence on regulation stakeholders' potential direction
- Anticipate and proactively work on influencing regulatory decisions and overcoming incumbent obstacles
- Effectively organize and staff the regulatory function
- Develop a mission-oriented, alert, strategically focused, cooperative culture
- Appoint a single point of contact for internal and external communication and ensure efficiency and effectiveness of internal regulatory management processes and interactions

Operators should consider the following key questions as they begin developing their regulatory management capabilities:

- How could the positioning and visibility of the regulatory affairs function be increased?
- How to develop strategic regulatory and legal management capabilities?
- How could a balanced and effective relationship be maintained with the regulator?
- What policies and regulatory frameworks should be recommended (e.g., licensing framework, competition regulation, market access conditions)?
- What VoIP business strategies are favorable and applicable?
- How to ensure fair and enabling infrastructure management models?
- How could incumbents minimize the impact of asymmetric regulation (e.g., retail regulation, incumbent regulation, and so forth)?

Significant potential now exists for fully developing the region's telecom sector and unleashing its full market value.

Endnotes

[1] See, e.g., Fink, Carsten, Aaditya Mattoo and Cristina Ileana Neagu, "Assessing the Role of Communication Costs in International Trade," 16 World Bank Economic Review 81, World Bank Working Paper #2929 (Washington, D.C. (2002) (a 10 percent drop in telecom costs can increase trade 8 percent).

[2] See, e.g., R. Gholami, Sang-Yong L., and A. Heshmati, *The Causal Relationship between Information and Communication Technology and Foreign Direct Investment,* WORLD INSTITUTE FOR DEVELOPMENT ECONOMICS RESEARCH, Discussion Paper No. 2003/30, at 1, 11 (April 2003) (and authorities cited); Addison T. and A. Heshmati, *Democratization and New Communication Technologies As Determinants of Foreign Direct Investment In Developing Countries,* New Economy in Development Conference, Helsinki (2002).

[3] The key aspects of telecom are its distance insensitivity, ability to facilitate "knowledge sharing" of all types, and tendency to self-generate demand for more information ("network effects"). As a result, modern, affordable, and ubiquitous telecom services promote economic growth by expanding addressable markets, spreading production processes across national or sub-national boundaries, and creating new models for turning inputs into products and/or services. Telecom generates more efficient production technologies that increase labor productivity and lowers the cost of coordinating economic activities within and between organizations and even in downstream industry sectors. See J. Dedrick, V. Gurbaxani, and K.L. Kraemer, *Information Technology and Economic Performance: A Critical Review and Empirical Evidence (Working Paper), Center for Research on Information Technology and Organizations, University of California at Irvine (2003)*. See also C. Morrison and D. Siegel, *External Capital Factors and Increasing Returns In U.S. Manufacturing,* Review of Economics and Statistics, v. 79, n. 4, at 647–54 (1997) and J. Grace, C. Kenny and C. Qiang, et al., *Information and Communication Technologies and Broad-Based Development: A Partial Review of the Evidence* (Draft), at 4 (February 2001).

[4] See Varoudakis, A., & Rossotto, C. M., *Regulatory Reform and Performance In Telecommunications: Unrealized Potential In The MENA Countries,* 8 Telecommunications Policy 59-78 (2004); and Vershinskaya, O. (2002).

[5] See Pohler, Matthias and Urban, Roman, *An International Analysis of Key Regulatory Decisions and Their Impact on the Stock Exchange,* Technische Universitaet Dresden (2005).

[6] ECTA regulatory scorecards, 2005. ECTA score is a measure of regulatory effectiveness across various regulatory levers.

[7] See Gentzoglanis, Sundberg and Schorr, *Effective Regulation, ITU Case Study: Morocco (2001)*. See also, Meschi and Fuss, *The Impact of Telecoms on Economic Growth in Developing Countries,* The Vodafone Policy Paper Series 2 (2005).

[8] For example, mobile telephony investment in 5 countries of the Organization of Eastern Caribbean States went from $40 million in 2001 to more than $80 million in 2003 and over $90 million by 2004 following the end of monopoly. (Source: World Bank and ITU 2004.) On the other hand, a study by the GSM Association (GSMA) finds that unpredictable and short-term approach to regulation can impede mobile penetration growth and development. See, GSMA, *Regulation and the Digital Divide: How Best-Practice Mobile Regulation Can Drive Investment and Penetration In Emerging Markets (2006)*.

[9] Regulation and the digital divide: *How best practice mobile regulation can drive investment and penetration in emerging markets, GSMA 2006;* Waverman, Meschi and Fuss: *The Impact of Telecoms on Economic Growth in Developing Countries. The Vodafone Policy Paper Series 2* (2005); Booz & Company.

[10] Authors' analysis based on data from the World Bank PPI Project Database and the WDI Database (2004 update).

[11] Kirkpatrick, Parker, and Zhang 2004.

[12] In many countries, the legislature retains control over budget appropriations for the independent regulator. Government is usually charged with privatization policy for state-owned enterprises. In most countries, the work of the regulator is subject to review and audit on at least an annual basis by a national government body. The executive in multi-branch governments or the ruler in unitary governments usually has specific statutory authority for policy concerns. For telecom issues that implicate broader national issues, i.e., universal service, multiple ministerial level input is often sought through the creation of a joint board.

[13] Countries include Denmark, Italy, South Korea, Spain, UK, Portugal, Australia, Morocco, Bahrain, Greece, Germany, Jordan, and France.

[14] Saudi Arabia's financial obligations are based on Saudi Telecom's obligations in 2006, in the form of 15 percent revenue share obligations for service provisioning, and *zakat* – charitable alms of 2.5 percent of turnover under Shari'a law.

[15] "Telecom Industry Revenue to Reach $1.2 trillion in 2006", VoIP Magazine, 2005.

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