

by

Hana Habayeb
habayeb_hana@bah.com

Karim Sabbagh
sabbagh_karim@bah.com

The ICT E-volution

Bringing Information to Communications

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In the past decade, countries in the Middle East and North Africa (MENA) region have come a long way toward developing their telecommunications sectors. The explosion of participation in the telecommunications market and the unprecedented growth of local players had scarcely been predicted by the most optimistic analysts even as late as 2002. Today, the countries of the MENA region are becoming active communications societies, or at least are well on their way toward doing so. Their appetite for communications services and technologies seems to know no limit.

Although success on the voice communications front has been phenomenal, efforts by countries to become active information societies as well, using communications tools to exchange knowledge, have not yielded the same results: The region's appreciation of the Internet's value remains limited, with relatively few active users. Countries' many efforts to introduce e-applications (such as e-commerce, e-government, and e-banking) and to improve access to such applications have been impressive, yet uptake remains relatively low. As stakeholders assess the region's accomplishments, they must view the challenges ahead through new lenses. The region's communications societies must extend their goal to become active information societies as well.

Regional Progress: Communications

The first step in reaching that goal is to formulate an explicit information and communications technology (ICT) strategy, with a clearly articulated implementation plan. Virtually all MENA countries have set such

strategies, and the vast majority of these countries are implementing at a good pace.

In addition to specific ICT policies, the region has worked tirelessly to improve the associated economic, business, and social environments. The MENA region's telecommunications sectors are well on their way toward full liberalization, challenging local telecommunications operators and allowing them to expand regionally and internationally. The investment in telecommunications has been exceptional, and the region has seen its local operators grow and expand into other parts of Africa and Asia. Considering the market capitalization of top operators, it will be no surprise to see regional telcos in the global top 10 list in a few short years (see Exhibit 1).

Aside from liberalizing their telecommunications markets, most countries are working quickly toward facilitating trade in ICT through bilateral trade agreements, investment treaties, and other arrangements. The six MENA countries that have not yet acceded to the World Trade Organization are in accession negotiations.¹

The region has made great strides in developing ICT infrastructure. Broadband infrastructure is widely available in most countries. International bandwidth continues to increase. Most mobile licensees provide coverage to more than 95 percent of the population,² and the recent wave of fixed wireless licensing will further facilitate rural connectivity. To a large extent, this development has been enabled by the rapid liberalization of telecommunications sectors and the licensing of new operators. Regulators have been vigilant to ensure that winners not only contribute financially, but that their bids are accompanied by strict technical commitments to ensure that the necessary quality infrastructure is put in place.

¹ Algeria, Iraq, Lebanon, Libya, Sudan, and Yemen.

² Review of individual mobile licenses.

Exhibit 1**Market Capitalization of Global Top Telcos (US Dollars in Billions)**

Global Telcos: February 5, 2008

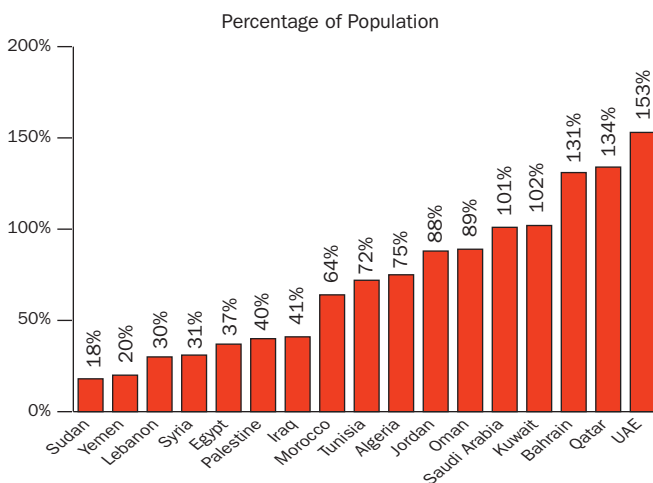
Telco	Market Capitalization
China Mobile	\$316.2
AT&T	\$222.8
Vodafone Group PLC	\$181.0
Telefónica S.A.	\$132.1
Verizon Communications Inc.	\$106.5
America Movil	\$100.9
France Telecom	\$88.0
Deutsche Telekom	\$83.8
Nippon Telegraph & Telephone Corporation	\$75.6
NTT DoCoMo Inc.	\$71.3
China Telecom-H	\$62.3
Telecom Italia	\$51.7
Telstra Corporation	\$48.9
Bharti Airtel Ltd.	\$44.9
SingTel	\$43.7

Regional Telcos: February 5 and 6, 2008

Telco	Market Capitalization
Saudi Telecom	\$39.5
Etisalat	\$32.8
Zain	\$29.0
Maroc Telecom	\$19.7
Orascom Telecom	\$15.8
Etihad Etisalat Company	\$9.2
Qtel	\$7.7
Du	\$7.2
Telecom Egypt	\$6.7
Wataniya Telecom	\$4.9
Mobinil	\$4.0
Omantel	\$3.6
Batelco	\$3.2
Jordan Telecom Group	\$2.0

Sources: Bloomberg L.P.; ABQ Zawya Ltd.; Booz Allen Hamilton

The liberalization of telecommunications sectors has driven considerable success in mobile communications services. Mobile penetration is over 100 percent in a number of countries (see Exhibit 2).

Exhibit 2**Mobile Penetration in the MENA Region, 2007**

Note: Rate exceeds 100% when members of the population have more than one mobile phone account

Sources: Globalcom Inc.; Booz Allen Hamilton

The region's mobile penetration rates are phenomenal and have exceeded those in many developed Western markets, thanks to the impressive affordability of these services. This growth serves as a testament to the success of the development of policies and strategies, infrastructure, and an enabling environment for voice communications.

The Communications/Information Gap

Within the framework of ICT infrastructure development, the region has pioneered work to address concerns of affordability and unequal access to the Internet. Notably, Egypt and Jordan have sponsored IT clubhouses, community centers, and initiatives to bring a PC to every home. The community centers bring Internet access to hundreds of rural communities. PC initiatives subsidize PC costs and Internet subscriptions, and offer flexible payment plans that make once-prohibitive costs affordable to large segments of the population.³

The region has rolled out impressive capacity-building projects: public-private partnerships for ICT curriculum development; programs to promote computer skills; initiatives to bring the Internet to all schools; and

³ Ministries of Information and Communication Technologies, Jordan and Egypt.

other training programs. Bahrain, Jordan, Qatar, Kuwait, Tunisia, and the United Arab Emirates (UAE) rank in the top 50 for countries whose children have frequent access to the Internet in schools.⁴ The UAE and Qatar have worked tirelessly to improve the curricula of local universities and have become leading hosts of international universities. The Kingdom of Saudi Arabia (KSA) will soon launch the King Abdullah University for Science and Technology, supporting and promoting graduate-level scientific research with a multibillion-dollar endowment.

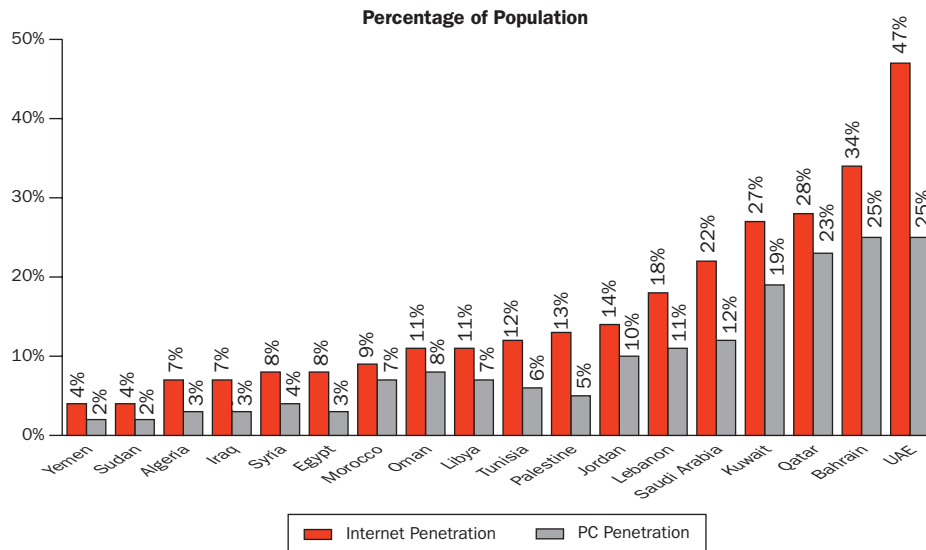
In the area of ICT applications, most countries are adopting concerted e-strategies that are increasingly being regarded as world-class. Most notable are some of the e-government strategies in the Gulf region, which have received international recognition. The UAE's e-government portal, for instance, was ranked by the United Nations Department of Economic and Social Affairs as the world's fifth in terms of transactional services and 12th in terms of Web measurement.^{5,6} Strategies for education are following suit, as almost every MENA country has articulated a plan of action to introduce e-learning to schools and universities.⁷ Jordan's Education Reform for the Knowledge Economy initiative has completed e-curricula for five subjects and will connect every public school to a national

broadband network. ictQatar's School Knowledge Net is a similar initiative in Qatar. Bahrain's King Hamad Schools will create the country's first comprehensive e-school. Egypt has developed a Web-based e-learning environment in collaboration with Oracle Corporation to stimulate interactive e-learning. The UAE's Sheikh Mohammed bin Rashid Al Maktoum IT Education Project provides thousands of students access to required infrastructure and up-to-date curricula.

The region has made great strides in trying to develop ICT, and the number of initiatives it has adopted is impressive, but the visible results are not always in line with the indicators of achievement. Although the adoption of communications services (specifically mobile services) has been phenomenal, for numerous reasons discussed below, the appetite for mobile has not been matched by a hunger for the Internet.

What do mobile services offer in terms of providing access to information and knowledge, building capacity, creating ICT applications, and promoting cultural content? To date, very little. The success of creating a communications society must be coupled with effective channeling of that communication for purposes of education, growth, and economic performance. In those areas, the region's low rates of PC and Internet penetration tell a different story (see Exhibit 3).

Exhibit 3
PC and Internet Penetration in the MENA Region, 2006



Sources: Madar Research Group; Booz Allen Hamilton

⁴ World Economic Forum, Executive Opinion Survey 2006.

⁵ Web measurement index rates the online presence of national Web sites and selected ministries, including health, education, welfare, labor, and finance.

⁶ Eye of Dubai Web site, "UAE Ranks 5th in Transactional Services and 12th in Web Measurement in Latest UN eGovernment Survey," www.eyeofdubai.com/v1/news/newsdetail-18296.htm.

⁷ United Nations Economic and Social Commission for Western Asia (ESCWA); individual countries' ministry Web sites.

This gap is often attributed to the high costs of PC and Internet service. Affordability remains a concern as PC subsidies are often insufficient, and IT clubhouses are available only in select areas. Although affordability is a large contributor to this gap, and further policies to help reduce costs and increase the affordability of Internet services are necessary, there are deeper reasons for the slow development of information societies in the region that policymakers need to address:

A Less Traditional Digital Divide. Countries in the region have made great efforts in the domains of training and curriculum development, yet there remains a gap between what the region's educational institutions are supplying and what industry demands. Most of the world, and the work offered globally, requires more than basic computer skills (e.g., simple word processing). Such basic skills do not provide the necessary competitive edge that youth in the region need to become valuable contributors to the knowledge economy. The lack of people with effective ICT knowledge is a major concern for economic development. In a survey of Arab executives, 30 percent stated that the most important challenge for successful innovation in the region is lack of qualified personnel.⁸ The knowledge gap is further widened by the region's limited interest in research, development, and innovation (RDI). By investing 0.2 percent of GDP in RDI, the Arab region falls far behind the world average of 1.7 percent.⁹

The Ever-Present Language Barrier. The lack of Arabic content is a widely recognized issue hindering the development of information societies in the MENA region. The language is common to more than 250 million people across the MENA region, yet attempts to develop content for this very large combined market have not yielded significant results. Major examples of Arabic online content and portals exist (including news sites and portals such as Jeeran.com, Maktoob.com, and Nassej.com), but they have a very small impact in terms of the amount of content an active online community requires. Arabic content is currently estimated at 0.5 percent of global online content.¹⁰ This is of grave concern, particularly because more than half of Arabic-speaking Internet users do not speak English.¹¹ The Internet is its content; without sufficiently attractive, engaging, and informative Arabic

content and applications, it will be difficult to effectively promote its use and adoption.

Investment Bias. To some extent, the lack of Arabic content and applications is due to the lack of developers: Local ICT entrepreneurs face considerable difficulty in accessing funds to develop innovative projects. This hurdle is cited as the most important challenge to innovation by 17 percent of surveyed Arab executives.¹² The region is more biased toward traditional investments. A quick look at the top investment funds in the region gives a clearer picture: Of the private equity and venture capital funds in the region, those that focus on real estate have a combined size of more than US\$2.3 billion. Those that focus on technology, communications, and media are of a combined size of a little more than US\$1.6 billion.¹³ Even within the ICT sector, investment in IT is nowhere near as popular as investment in telecommunications, which was evident in the tremendous appetite at the most recent IPOs of telecommunications companies.

It is therefore no wonder that ICT applications development remains challenged in the region. There is very limited private sector activity in ICT applications development. E-commerce activity is generally low. Regional companies are missing out on opportunities to reduce costs, increase business opportunities, and stimulate cooperation among business partners and suppliers. This is exacerbated by the lack of cooperation between governments and business sectors to promote B2B (business-to-business) e-commerce. Although Tejari, an online B2B marketplace that is part of Dubai World,¹⁴ provides a notable exception, its US\$4.5 billion in transactions are a very small percentage of the total intraregional trade.¹⁵

Looking Ahead through New Lenses

Given its experience, achievements, and remaining challenges, the MENA region must now carefully consider its trajectory. Strategies to improve access to communications services have been largely successful; however, the region must reexamine its efforts to include the I and T in ICT.

The region has universally adopted strategies to improve access to information and knowledge. As

⁸ Moutamarat, INSEAD, and PricewaterhouseCoopers, 2006.

⁹ United Nations Educational, Scientific and Cultural Organization (UNESCO), "Arab Science Expenditure 'Disappointing', Forum Hears," http://www.unesco.org/science/psd/focus/focus07/arab_science.shtml, 2007.

¹⁰ Gulf News, "Online Gathering to Get Arabic Touch," August 14, 2007, <http://archive.gulfnews.com/articles/07/08/15/10146634.html>.

¹¹ Madar Research Group, 2006.

¹² Moutamarat, INSEAD, and PricewaterhouseCoopers, 2006.

¹³ ABQ Zawayya Ltd., Private Equity Monitor, 2007.

¹⁴ Franchised in Jordan, Kuwait, Lebanon, Oman, Pakistan, Saudi Arabia, Iraq, Egypt, and China.

¹⁵ The Daily Star, "Dubai Firm to Open Offices in Bangladesh to Offer e-Commerce Services," February 8, 2008, www.thedailystar.net/story.php?nid=22496.

indicators of achievement, policymakers typically adopt measures such as “number of public and community access points” and “number of initiatives for affordable connectivity.” At first glance, regional progress along these lines may seem to be successful, given the hundreds of access points that are being constructed. The region has come a long way toward building communications infrastructure. However, the infrastructure will take countries only part of the way forward.

The MENA region must not lose sight of the goal of ensuring that this infrastructure is effectively leveraged as a means to greater knowledge and information. In drafting policies and strategies, and in implementing the related projects, the challenge is to ensure that community points are effectively leveraged. What percentage of the target communities frequent the access points? How have these access points improved the education or livelihood of their users? What measures, such as awareness campaigns and educational incentives, can be implemented to encourage community members to take advantage of the digital opportunities on offer?

Similarly, in the area of capacity building, countries must remain vigilant to ensure that the introduction of curricula and training programs and the connectivity of schools and universities do not remain simple academic exercises. Connecting all schools to the Internet can be a relatively simple operation, requiring no more than funding and technical ability. Ensuring that the students profit from using the Internet at schools is an entirely different challenge, one that makes the desired leap from communications to information. Promoting the use of the Internet in ways that expand students’ imaginations and deepen intellectual curiosity is not simply a matter of megabytes. Ensuring alignment between skills acquired in the schools and skills demanded in the marketplace is a greater challenge; it goes further and covers the curricula, the teaching methods, and the direction, freedom, and security with which the region’s youth can explore this new medium.

Perhaps the most challenging task ahead is to promote the development of a culture of entrepreneurship within the private sector. For although governments, regulators, and nongovernmental organizations

(NGOs) can continue to push the development of ICT applications and programs, a true information society must develop more organically. The magic of the Internet is its grassroots, bottom-up development, and there are measures countries in the region can take to encourage the information society’s organic growth.

If Arabic content and applications are to be developed on a large scale, the region must look to local entrepreneurs and small and medium-sized enterprises (SMEs), and it must support them in the areas of finance, administration, and innovation:

- Much financing in the region is skewed toward more traditional and stable investments. With that in mind, the region should support and encourage funds targeting ICT innovation. It should consider providing soft loans to ICT startups and creating innovation funds and competitions that continuously encourage SMEs to produce—rather than governments to provide—applications. The UAE has started down this path by launching an ICT Development Fund to provide grants, scholarships, and advisory services to support ICT innovation.
- In the realm of facilitating business and trade, many SMEs still suffer from an abundance of red tape. In the MENA region, the process for an entrepreneur to start a business requires an average of 32 days; in Australia, it requires just two.¹⁶ The region must take immediate action to modernize legislation and streamline registration processes in order to reduce this startup time and encourage entrepreneurs to continue innovating.
- Public-private partnerships are an excellent medium by which governments have supported the development of local SMEs. Jordan’s Education Initiative, for example, is a great success story of public-private partnerships. The Ministry of ICT brought together more than 35 partners to develop infrastructure, curricula, and other applications. The program brought together Jordanian enterprises such as Rubicon, Fastlink, Estarta Solutions Inc., and others, and international ICT companies such as Microsoft Corporation, Cisco Systems Inc., and IBM Corporation. The result was not only the development of world-class applications but also the injection of capital, the transfer of technology, and the sharing of ideas.

¹⁶ Figure excludes Palestine and Iraq; The World Bank, “Doing Business 2007.”

Regional progress to date has made it abundantly clear that developing ICT requires holistic programs that stretch beyond physical infrastructure to the arenas of education, private sector, and government. The rationale is straightforward: Physical infrastructure is useless unless citizens and businesses have the access and incentives to utilize it. User adoption, education, regulation, legal frameworks, and business environments are key requirements for success. As governments consider ICT, they must have a clear and compelling economic prize in sight and be aware that ICT is more than copper, fiber, and download speeds.

Vision of the Future

In terms of ICT development, the region has come a very long way in a remarkably short period of time. This alacrity is largely due to government involvement and regulatory perseverance, particularly in sector liberalization and policy initiatives. While these actions have spurred the growth of communications technology, information technology is developing at a slower pace. The region's next moves must further the goal of leaping from communications to information. Evidenced by its success on the communications front, the region has tremendous potential, and there is no telling what it can achieve once it has attained the goal of becoming a sustainable information society.

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Karim Sabbagh is a vice president with Booz Allen Hamilton based in Riyadh and Dubai. He focuses on information and communication technologies and leads the firm's related engagements in the Middle East. He advises multinational and local clients on industry-level policies, regulations, business strategies, partnership and alliances, and operating and governance models. He can be reached at +971-4-390-0260 or by email at sabbagh_karim@bah.com.

Hana Habayeb is a senior consultant with Booz Allen Hamilton based in Dubai. She specializes in telecommunications policy, regulation, and strategy, with a background in market liberalization, policy setting, regulatory reform, regulatory strategy, and governance. She can be reached at +971-50-445-7058 or by email at habayeb_hana@bah.com.

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