

National Broadband Policies and Market Development

The Need for Broadband Policies

An increasing number of countries across Middle East and North Africa (MENA) have adopted a national broadband plan to foster broadband access. Today 15 countries out of 19 in the region have adopted such a strategy or policy document and one other country is about to do so (see table 2.1).

The adoption of a national broadband plan means that a country is making specific efforts to stimulate broadband market development in a systematic and holistic way with all key stakeholders. Indeed, all the countries in MENA with high penetration rates first adopted a broadband policy. At the core of such a plan are national targets for broadband penetration or coverage (see the Arab Republic of Egypt's National Broadband Plan summarized in box 2.1 as an example). These targets may differ across the region owing to existing broadband infrastructure, degree of competition in the telecommunications market, income levels of the population, and the state of government finances, especially when public funding is explored. Considering the diverse situation across broadband markets in MENA, there is indeed no "one size fits all" approach to national broadband strategies as there cannot be a single set of policy recommendations for the region as a whole. Therefore, it is crucial that national broadband policies should be well formulated according to the stage of broadband market development of each individual country with emphasis on those areas that are the most relevant for that stage. This enables the government to introduce adequate and, just as importantly, timely regulatory and policy measures which may effectively contribute to further market development while taking into account the specific situation of each country.

Few examples of harmonized regional broadband strategies exist. The Digital Agenda for Europe (DAE) is one of the rare examples aiming to harmonize national broadband policies across the 27 European Union (EU) member states forming a unified economic zone. Quantitative targets in terms of implementation time, broadband coverage, and speed vary across different EU member states (box 2.2). But a harmonized approach for broadband development is

Table 2.1 National Broadband Policies Within MENA, 2013

<i>Region</i>	<i>Economy</i>	<i>Broadband policy</i>	<i>Link</i>
North Africa	Algeria	Yes/2008	Not available
	Tunisia	Yes/2012	Tunisia Broadband Strategy 2012: http://www.itu.int/ITU-D/arb/ARO/2012/RDF/.../Doc6-BroadBand.pptx%E2%80%8E
	Libya	No/Planned	Not available
	Egypt, Arab Rep.	Yes/2011	eMisr National Broadband Plan: http://www.tra.gov.eg/emisr/Summary_En.pdf
	Morocco	Yes/2012	Digital Morocco 2013: http://www.egov.ma/SiteCollectionDocuments/Morocco Digital.pdf%E2%80%8E
Mashreq	Lebanon	Yes/2008	National E-Government Framework: http://www.undp.org.lb/programme/governance/ict4dev/eStrategy.cfm
	West Bank and Gaza	Yes/2011	National ICT Strategy 2011–2013: http://www.pmtit.ps/ar/cp/plugins/spaw/uploads/files/Trans_National_Strategy_ICT-Post_Palestine2011-2013.pdf
	Iran, Islamic Rep.	Yes/N/A	National ICT Plan: http://www.scict.ir/portal/File/ShowFile.aspx?ID=f179cbbc-a580-4285-8105-9ca0e60599e1
	Iraq	No/2013	Not available
	Jordan	Yes/2013	National ICT Strategy 2013–2017: http://www.moict.gov.jo/Portals/0/PDF/NewFolder/ADS/Tender2/Final%20Draft%20Jordan%20NIS%20June%202013.pdf
Syrian Arab Republic	Yes/2004	National ICT Strategy 2004: http://www.arab-hdr.org/publications/other/undp/hdr/2004/syria-ict-04e-strategy.pdf	
Gulf	Bahrain	Yes/2012	E-Government Strategy 2012–2016: http://www.ega.gov.bh/wps/wcm/connect/1f75f0004af9c3b2b84cb978e38c6a11/eGov%2BStrategy_Brochure_Eng.pdf?MOD=AJPERES
	Kuwait	Yes/2004	Not available
	Oman	Yes/2012	E-Oman Strategy 2010: http://www.unescap.org/idd/events/2010_ESCAP_DESA_Roundtable_ITC/6-OMAN.pdf
	Qatar	Yes/2011	ICT Strategy 2015: http://qbn.qa/about-us/ict-strategy-2015/
	Saudi Arabia	Yes/2010	E-Government Action Plan 2012–2016: https://www.yesser.gov.sa/en/MechanismsandRegulations/strategy/Documents/the_2nd_egovernment_action_plan_ENG.pdf
	United Arab Emirates	Planned	Not available
	Djibouti	Yes/2004	Not available
	Yemen, Rep.	No/2013	Not available

Sources: Bilbao-Osorio, Dutta, and Lanvin 2013; Broadband Commission 2013.

Note: Yes—country has adopted broadband policy document; Planned—country is planning to start or has started preparation of broadband policy document, status for 2013; No—country does not have a broadband policy document. — = not available.

made possible by a common regulatory framework, consistent competition law principles, and enforcement institutions for all member states. This factor has stimulated investment and encouraged the rollout of regional broadband networks, thereby reducing the digital divide. This is an important example for the MENA region, characterized by different regulatory frameworks, absence of a common body of competition law, and different approaches to broadband development.

Alongside fostering the approval and regular update of national broadband policies, the EU experience can serve as an example of successful adoption of

Box 2.1 Egypt's National Broadband Plan

The Arab Republic of Egypt's "eMisr National Broadband Plan" is a two-stage plan: the first phase lists strategic options and recommendations to achieve set targets; the second phase (2Q 2012) details a list of action items with timelines and responsibilities needed for the execution of the plan.

Coverage targets:

Fixed: 75 percent of households (HH) have access to 2 megabits per second (Mbps) by 2015; 90 percent of HH have access to 25 Mbps by 2012;

Mobile: 98 percent of population coverage of third generation of mobile telecommunications technology (3G) by 2015; 90 percent of population coverage with fourth generation of mobile telecommunications technology/long-term evolution (4G/LTE) by 2021.

Penetration targets:

Fixed: ~22 percent of HH subscribed to broadband by 2015; ~40 percent of HH subscribed to broadband by 2021;

Mobile: ~10 percent of citizens subscribed by 2015; ~15 percent of citizens subscribed by 2021.

Social targets:

By 2015: 50 percent of Egyptian communities connected to 25 Mbps; 50 percent of third-level Egyptian administrative localities (Sheyakha and Village) served with at least one Public Access Point with 25 Mbps.

By 2021: 100 percent of Egyptian communities connected to 25 Mbps; each third-level Egyptian administrative locality (Sheyakha and Village) served with at least one Public Access Point with 25 Mbps. It is estimated that by achieving short-term targets alone, broadband will create 6,650–17,500 direct jobs on average per year and will result in an incremental cumulative contribution to gross domestic product of US\$4.17 billion.

The estimated investment required over the four-year forecast period—to achieve the set availability, penetration, and social targets—is projected to be in the range of US\$2.40 billion to US\$3.95 billion.

To encourage investment in areas where deploying broadband services may not be economically viable, government stimulation of up to 20 percent of the total needed investment would be required.

In order to stimulate the demand needed for a successful broadband diffusion, an investment in the range of US\$350 million will be needed, as per the Ministry of Communications and Information Technology, over four years.

Source: eMisr National Broadband Plan, 2011, http://www.tra.gov.eg/emisr/Summary_En.pdf.

a common regulatory framework to MENA, in particular in any sub-regional economic zone (e.g., Gulf Cooperation Council, Arab Maghreb Union). This is particularly important for investment, as investors increasingly view the region as a single market, but they need to adapt to multiple regulatory frameworks, local laws, regulations, and institutions for each of their investments in the region.

Box 2.2 Broadband Policy: Objectives and Implementation of the Digital Agenda for Europe

The Digital Agenda for Europe (DAE) includes the objective to bring “basic” broadband to all citizens of the European Union (EU) by 2013. Eight EU member states (Denmark, Finland, France, Latvia, Luxembourg, Malta, the Netherlands, and the United Kingdom) have already achieved full coverage for “basic” broadband services and a further 17 have set a corresponding quantitative target, or are about to do so. In many cases the timing is more ambitious than the DAE deadline of 2013. There is a range of definitions of “basic” download speeds from 512 kilobits per second (kbps) to 4 megabits (Mbps) adopted across the EU countries, while the definition of “basic” broadband on the EU level refers to always-on service with a speed exceeding 144 kbps.

Beyond the “basic” broadband target, the DAE includes an additional objective to ensure that by 2020 all Europeans have access to much higher Internet speeds of above 30 Mbps and 50 percent or more of European households (HH) subscribe to Internet connections above 100 Mbps. When it comes to ultra fast broadband (UFB), the level of ambition of EU countries in terms of coverage targets varies greatly (See table B2.2.1). Some have not yet adopted any coverage targets, whereas a group of more advanced countries is pursuing objectives well beyond the coverage target specified in the DAE (up to 1,000/500 Mbps for download/upload by 2020 in Luxembourg). So far, 21 member states have defined quantitative coverage objectives for UFB with download targets ranging from 25 Mbps to 1 gigabit per second (Gbps) and with coverage footprints between 75 and 100 percent of households or population.

Table B2.2.1 National Broadband Plans’ Coverage Targets in Selected EU Countries

	<i>Basic coverage^a</i>			<i>UFB coverage</i>			<i>Additional information</i>
	<i>Speed (Mbps, dl)</i>	<i>Coverage (%)</i>	<i>(planned) completion</i>	<i>Speed (Mbps, dl)</i>	<i>Coverage (% ,hh)</i>	<i>(Planned) Completion</i>	
Germany	1	100	2011	50	75	2014	*(HH)
France	0.5 (us)	100	Achieved	100 (min 50)	100*	2025	*Intermediate target of 70% by 2020
Sweden	1	100	NA	100	90*	2020**	*Applies to (HH)+(bs); **intermediate target of 40% coverage by 2015 achieved
United Kingdom	144 kbps	100	Achieved	25	90*	2015	*90% of (HH) in all local authority areas, 2 Mbps for remaining 10%
Italy*	144 kbps	100	2013	100	50	2020	*Broadband targets are harmonized with Digital Agenda for Europe targets

Source: European Commission, Digital Agenda, <http://ec.europa.eu/digital-agenda>.

Note: Coverage/penetration refers to population unless stated otherwise. bs = businesses; dl = downloads; HH = households; kbps = kilobits per second; mbps = Megabits per second; min = minute; us = universal service.

Three Core Objectives of Broadband Policy and Three Stages of Market Development

Traditionally, the building blocks of any broadband policy are grouped around three core objectives:

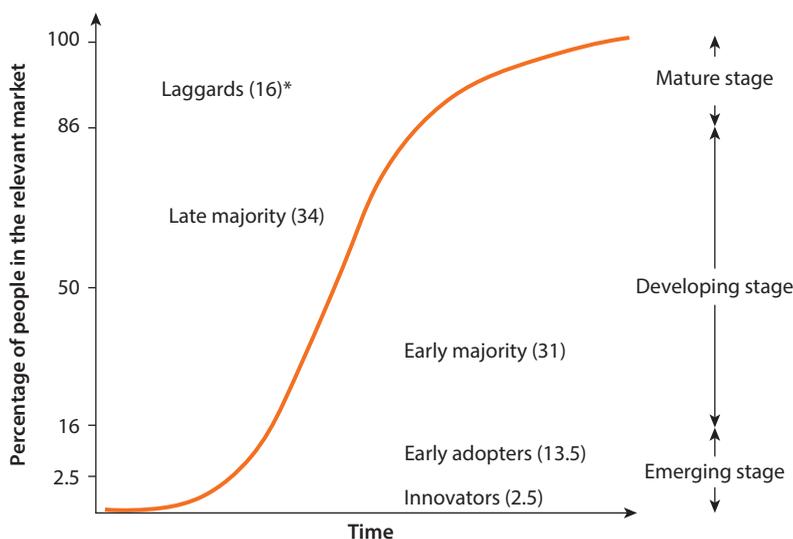
- Access (sometimes also referred to as Supply or Connectivity), with the objective to bring networks everywhere and to improve availability of broadband;
- Adoption (sometimes also referred to as Demand or Usage), with the objective to stimulate and to make usage of networks deployed more effective; and
- Competition, with the objective to maintain a competitive environment able to sustain growth of broadband penetration, and drive innovation and deliver consumer benefits.

The priority of these objectives will vary according to the phase of market development. Development of broadband, like any innovation, tends to follow an s-shaped curve (see box 2.3). The s-curve reflects the three stages or phases in the evolution of a market: Emerging (or Introductory) Developing, and Mature.

Box 2.3 Broadband Diffusion Curve

The s-curve reflects the three stages in the evolution of a market: emerging (or introductory), developing, and mature (see figure B2.3.1). The emerging stage is prior to the first inflection; the developing stage is between the first and second inflections; and the mature stage is after the second inflection. Adoption is slow initially but accelerates rapidly before stabilizing as it reaches maturity.

Figure B2.3.1 The S-Curve

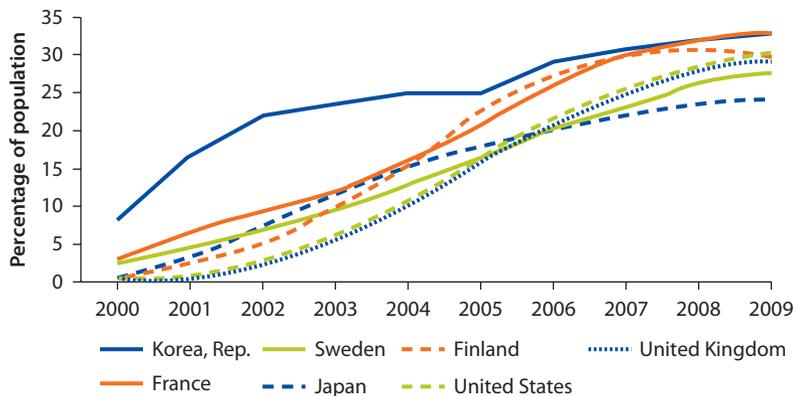


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Box 2.3 Broadband Diffusion Curve *(continued)*

The particular shape of the curve (namely its slope and the points of inflection) will differ between countries as a result of differences in policy and regulatory framework, income per capita, the availability and penetration of substitute and complementary products, and the diffusion of precursor innovations and products. Figure B2.3.2 provides some examples of s-curves representing broadband market development. For instance, in the case of the Republic of Korea, a good combination of supply and demand policies has stimulated the diffusion of broadband in its early stages affecting the shape of the s-curve.

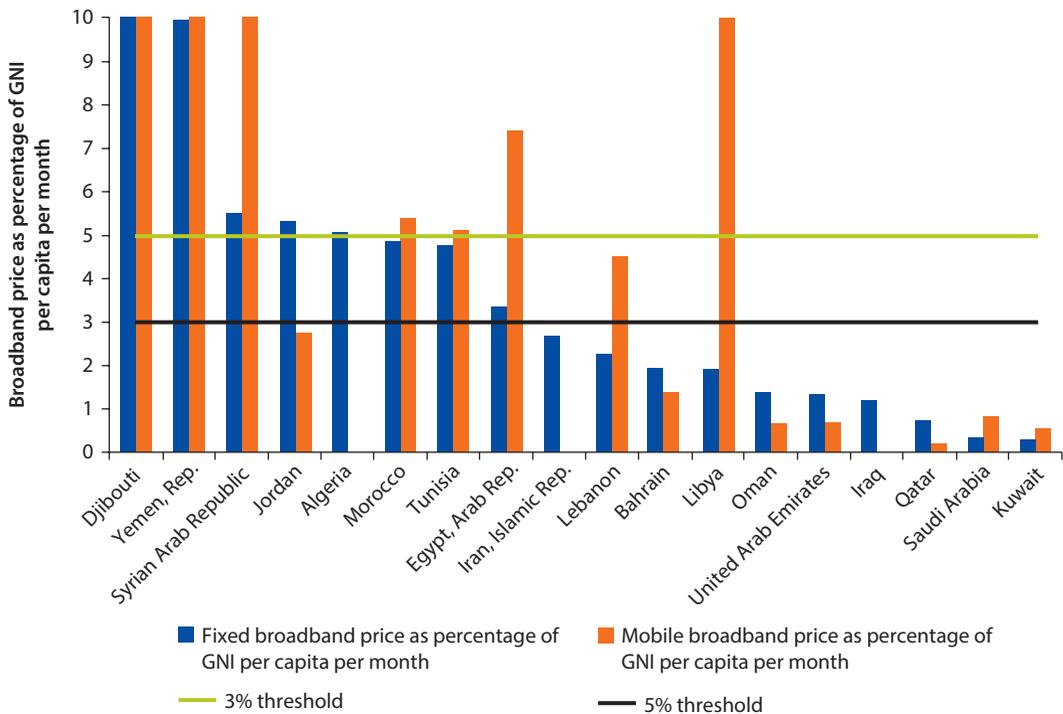
Figure B2.3.2 Penetration of Wireline Broadband Services in Various Countries



Sources: Based on International Telecommunication Union 2012; Rogers 2003; Kim, Kelly, and Raja 2010.
 *Number represents the percentage of total amount of people in the relevant market.

The price of broadband service plays a critical role in terms of broadband diffusion. According to the International Telecommunication Union (ITU), broadband penetration grows rapidly after the level of retail broadband price falls below 3–5 percent of average monthly income. In the MENA region, fixed broadband price constitutes ~3.6 percent of the average monthly income per capita, while mobile broadband prices stands at ~7.7 percent. While Djibouti, Syria, and the Republic of Yemen are significantly above the 5 percent threshold, a number of countries (i.e., Algeria, Egypt, Jordan, Libya, Morocco, and Tunisia) have just reached the level that makes rapid broadband takeoff possible (see figure 2.1).

If we look in particular at the countries in the emerging (or Introductory) phase, we can observe that in most cases, there is a lack of competitive market conditions. For instance, in the case of Djibouti the high price of mobile broadband is consistent with the low penetration of third generation of mobile telecommunications technology (3G) in the country, that is, 2.22 percent per 100 inhabitants. In Syria, the Republic of Yemen, and Tunisia, low 3G penetration (4.33 percent, 1.82 percent and 5.10 percent per 100 inhabitants, respectively) is consistent with the high price of mobile broadband as a percentage of

Figure 2.1 Fixed and Mobile Broadband Prices

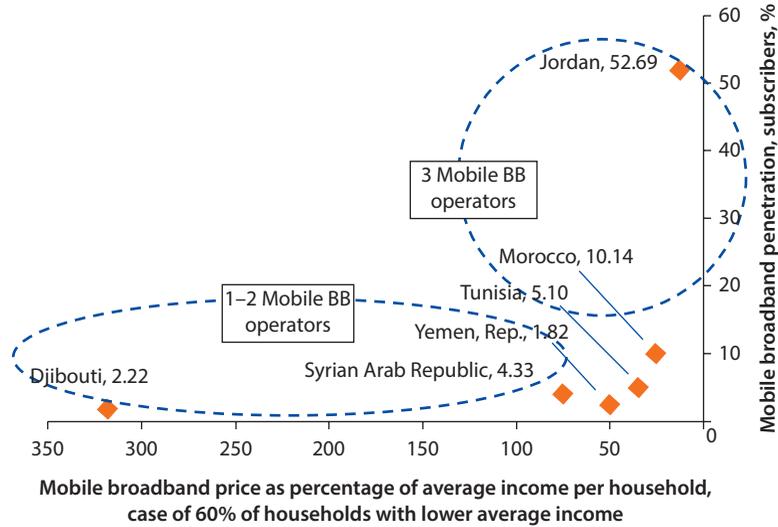
Sources: GNI per capita: World Bank, latest available; Prices: World Bank based on operators' data.

Note: For West Bank and Gaza, data are not available; values for Djibouti: fixed broadband (BB): 22.09%; values for Libya: mobile BB: 32.38%; mobile BB: 77.15%; values for the Republic of Yemen: fixed BB: 9.97%; mobile BB: 12.86%; values for the Syrian Arab Republic: mobile BB: 13.77%. GNI = gross national income.

average income. By contrast in Jordan, a more affordable mobile broadband price constitutes a less significant portion of average income, which supports a much higher penetration rate of 3G (above 50 percent). Figure 2.2 illustrates the correlation between a mobile broadband price basket as a percentage of overall average income of the poorest 60 percent of the population and broadband penetration rates. It also indicates that countries with lower mobile broadband prices tend to have a higher number of mobile broadband providers.

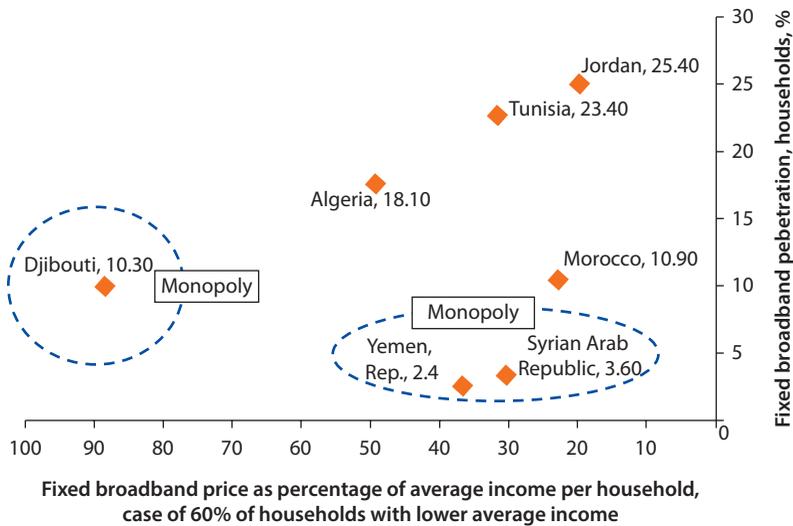
There is a similar correlation for fixed broadband penetration (see figure 2.3). In Algeria and Tunisia, fixed broadband is achieving higher penetration rates at relatively higher prices. In the case of Algeria, this is consistent with the absence of a fixed-to-mobile substitution effect resulting from the absence of mobile broadband in the country. In Tunisia, fixed broadband take-up at higher prices may be explained by the same reason since 3G services in Tunisia were introduced relatively recently (2010) and penetration is still quite low (5.10 percent). For both mobile and fixed broadband, similar penetration rates are achieved at comparable levels of broadband price as a percentage of overall average income, that is, around 25–30 percent. The affordability of broadband for the poorest members of the population is explored further in box 2.4.

Figure 2.2 Mobile Broadband Penetration and Affordability, December 2012



Sources: World Bank analysis; Penetration: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data, retrieved August 2013).
 Note: BB = broadband.

Figure 2.3 Fixed Broadband Penetration and Affordability, December 2012



Sources: World Bank analysis; Penetration: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).
 Note: BB = broadband.

Affordability of broadband services is an important outcome of the implementation of the policy objectives, while each development phase of the broadband market can be characterized by the relative importance of the three core policy objectives described above: access, adoption, and competition. Bearing this in mind, specific regulatory and policy initiatives will be needed to facilitate

Box 2.4 Affordability of Broadband for the Poorest

Let us consider some examples of countries in the emerging stage of market development and look at the percentage of disposable income that the poorest segment of the population would need to spend to afford broadband. For instance, a representative household in the lowest 40 percent income bracket of Morocco would need to pay about one-third of its disposable income to afford mobile broadband (table B2.4.1). That same family would need to spend about 30 percent of its disposable income to afford fixed broadband services. The situation is only slightly better for the bottom 60 percent of the Moroccan population measured by income. Mobile broadband would require about 26 percent of their disposable income, and fixed broadband would require 23 percent of disposable income. In spite of important reforms undertaken by Morocco, a leader in many respects, broadband services are still unaffordable for the majority of the population. Even so, Morocco is the best performer in this group.

The situation is worse for other MENA countries in the emerging broadband development phase. In Tunisia, the poorest 40 percent of the population would need to spend over 40 percent of their disposable income to afford mobile or fixed broadband. In the Republic of Yemen, the poorest 40 percent of the population would need to spend over half of their income for mobile broadband and 46 percent of their income to pay for fixed broadband. In Djibouti, a mobile broadband package is a multiple of the disposable income of the poorest 40 percent and 60 percent of the population, and fixed broadband would absorb roughly the whole income of the poorest 60 percent of the population. In countries classified in the “emerging” broadband development phase (Algeria, Djibouti, Morocco, Syria, Tunisia, and the Republic of Yemen), both fixed and mobile broadband services are far from being affordable for at least 60 percent of the population.

Table B2.4.1 Affordability of Broadband in Emerging Markets

Percent

Country	<i>Mobile BB against average income of lowest</i>	<i>Mobile BB against average income of lowest</i>	<i>Fixed BB against average income of lowest</i>	<i>Fixed BB against average income of lowest</i>
	40%	60%	40%	60%
Algeria	–	–	63.31	50.61
Djibouti	407.39	318.34	116.66	91.16
Morocco	32.11	25.94	29.03	23.45
Syrian Arab Republic	90.14	74.59	36.06	29.84
Tunisia	44.18	34.56	41.09	32.14
Yemen, Rep.	59.86	49.18	46.44	38.16

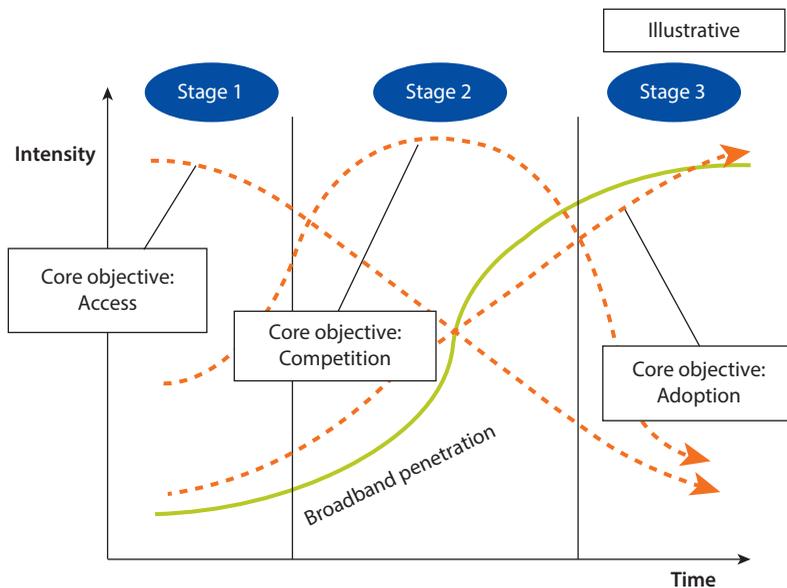
Sources: Prices: World Bank analysis based on operators' data, January 2013; total income: purchasing power parity (PPP) 2005; population: World Bank, 2011, Development Data Platform (DDP); income distribution by quintile: PovcalNet, the online tool for poverty measurement, World Bank, DDP, earliest available information was used.

Note: BB = broadband.

the development of the broadband market from one phase to another. At each phase of market development, the broadband penetration rate is fostered by different drivers. It is important therefore to understand the logic behind the broadband market development and correctly identify the level of market maturity in a given country in order for proposed policy measures to be adequate and capable of accelerating market development.

Countries at the emerging development stage (Stage 1: Emerging) can be characterized by weak (or absence of) competition associated with low levels of broadband penetration rates, low international connectivity, and an underdeveloped national backbone infrastructure. At this stage of market development, policy decisions should be focused on the objectives of access and competition as a first priority (see figure 2.4). Therefore, opening up the market to competition as well as facilitating open access to infrastructure, along with initiatives related to decreasing costs, are crucial to creating a favorable investment climate and boosting infrastructure rollout. In addition, governments should ensure that all the sectors that may contribute to infrastructure deployment are taken into account and appropriately involved, introducing a much-needed alternative and/or complement to the backbone infrastructure provided by incumbent telecommunications operators (e.g., excess capacity on fiber infrastructure of utility companies, railroads, or electricity grids deployed to sustain their own communication networks).

Figure 2.4 Importance of Policy Objectives Depends on the Stage of Broadband Market Development



Note: Intensity refers to intensity of policy and regulatory measures that should be dedicated to the core objective.

As the broadband market takes off and the number of market players grows, competitive behavior among the operators will be the main driving force for broadband take-up, driving down prices and competing on value-added services (top-up services, games and entertainment, mobile payments). At this stage of market development (Stage 2: Developing) policy measures should focus on maintaining effective competition in the retail broadband market. Therefore, enhanced *ex-ante* sector-specific regulation at the wholesale level (i.e., effective, nondiscriminatory, transparent open access to existing networks) accompanied by an independent regulatory authority capable of enforcing it will be essential. Box 2.5 describes the thinking behind *ex-ante* regulation in more detail. As broadband-specific regulation gains importance, policy interventions and an up-to-date legal framework giving appropriate powers to the independent national regulatory authority become crucial. At this stage, the retail broadband market is characterized mainly by an increasing number of operators and service providers and decreasing broadband access prices as a result of competitive pressure. The competitive pressures will also naturally stimulate infrastructure deployment in high-income, high-density areas, with less economically attractive areas likely remaining underserved at this stage.

Box 2.5 *Ex-ante* Sector-Specific Regulation in Telecommunications

Ex-ante regulation is anticipatory in nature and directed toward situations where market failures are expected to occur. Therefore, an *ex-ante* regime is of particular importance for less competitive markets. The objective of *ex-ante* regulation in the information and communications technology sector is to adopt measures to prevent socially undesirable outcomes or to direct market activity towards desirable ends in light of the anticipated market failure. Taking that into account, *ex-ante* regulation should be narrowly tailored to address the specific instances of expected market failure.

For instance, it may be expected that an incumbent operator may potentially have an incentive and the means to refuse access (e.g., local loop unbundling, interconnection, and so on) requests from alternative operators. The approach to address such a negative outcome in advance is to impose an *ex-ante* access obligation on the incumbent operator. In this case, the obligation is adjusted to the specific situation and is applied towards a specific operator.

Over the next decade, *ex-ante* regulation will likely continue to be targeted at the physical network infrastructure and may begin to address challenges in other areas such as services and applications. Consequently, regulations will likely focus to varying degrees on access networks, backbone, backhaul, and international connectivity.

It is widely recognized that the rationale for *ex-ante* regulations no longer holds as markets approach a mature stage of development and become more competitive. At that point, gradual fine-tuning or, in some cases, even full withdrawal of targeted *ex-ante* regulation becomes necessary to better reflect competitive conditions in the market and serve consumer interests. However, this is far from being the case for the vast majority of MENA countries.

Source: Adapted from ICT Regulation Toolkit, infoDev, ITU <http://www.ictregulationtoolkit.org/en/home>.

When market development approaches maturity (Stage 3: Maturity) and economically attractive areas have already been supplied with broadband access, policy decisions should be focused on stimulating and making more effective usage of existing networks. There may nevertheless remain geographic areas where competition forces are unlikely to guarantee broadband availability owing to lack of commercial interest, that is, insufficient social and economic conditions. In addition, broadband may be delivered at prices that make it unaffordable for certain population groups. In those areas, governments should lead the initiative on broadband infrastructure deployment in order to ensure the principle of universal access and to prevent a digital divide.

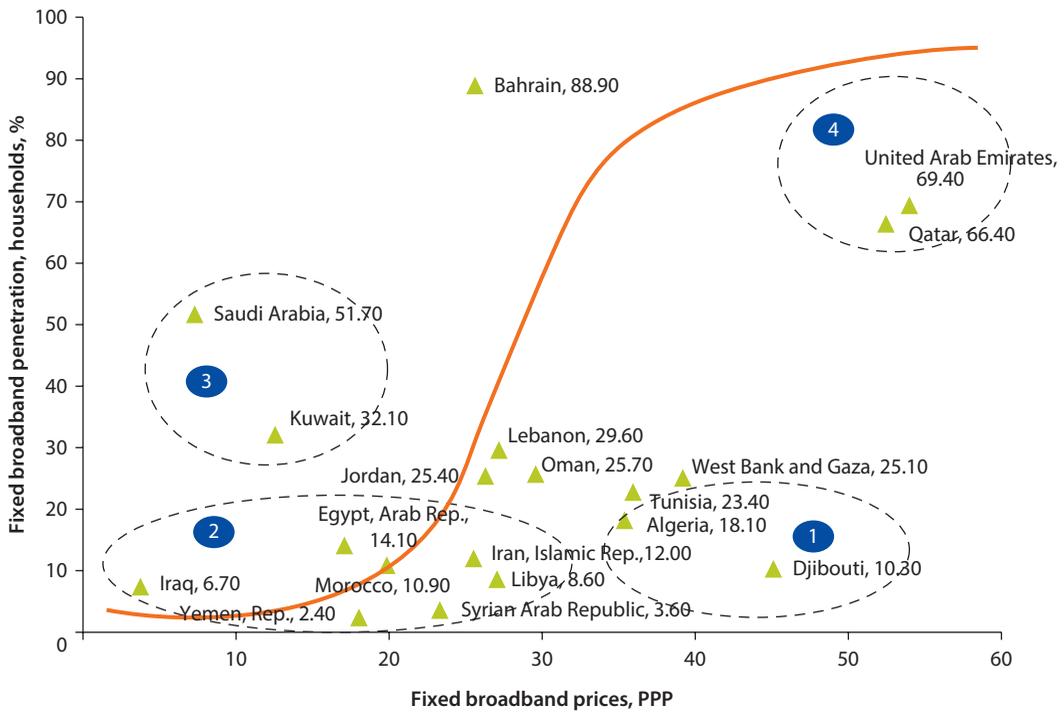
Clustering Countries According to Their Level of Broadband Development

Fixed Broadband Markets in MENA

Fixed broadband markets in MENA are largely underdeveloped with most being in the emerging development phase. At the end of 2012, in above 50 percent of the MENA countries the fixed broadband penetration rate was no higher than 25 percent, and in only one country did it exceed 70 percent (see figure 2.5). The low penetration rate can be attributed to a number of factors, including a lack of infrastructure, weak or no competition, and high prices for services. But most importantly, when the high take-up of 3G and fourth generation of mobile telecommunications technology (4G) services across the MENA region is taken into account, the development of the fixed broadband market cannot be analyzed separately from the mobile broadband market because of a possible fixed-to-mobile substitution effect.

This section clusters MENA countries according to their level of fixed broadband market development and will provide insights into market development circumstances while taking into account technological diversity and development of fixed broadband access networks, fixed broadband and mobile broadband prices (including the fixed-to-mobile substitution effect), level of competition in the fixed broadband market, and finally past policy decisions that could potentially affect present market development.

Figure 2.5 presents the distribution of the MENA countries along the s-curve characterizing the typical development of any product or service market, including the fixed broadband market (see box 2.3). Countries are positioned on the x-axis taking into account respective prices of fixed broadband monthly subscriptions. The level of fixed broadband prices varies greatly across the countries in the emerging market development stage (Algeria, Djibouti, Egypt, the Islamic Republic of Iran, Iraq, Morocco, Syria, Tunisia, and the Republic of Yemen). It would be logical to assume that a low market development should be characterized by higher prices. It is true in the case of Djibouti, Algeria, Libya and Tunisia (circle 1, figure 2.5). However, with the rest of the countries in the emerging phase, the fixed broadband price level varies a lot depending on the country. In some countries, for example, the Republic of Yemen, Iraq, Morocco,

Figure 2.5 Fixed Broadband Penetration and Access Prices, December 2012

Source: Fixed broadband household penetration—TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

Note: PPP = purchase power parity.

Methodology for price calculation: Prices were collected from public sources (operators' websites); ITU definition for broadband (256 kilobits per second [kbps] downstream) was used; data cap of 1 gigabit (Gb) was considered; the price of the operator with the biggest market share was used. However, if their market share was less than 50 percent, the price of the second-biggest operator was also researched, and the arithmetic mean of the two operators was used; the cheapest offer was selected; prices were collected in January 2013; fixed broadband price in the Syrian Arab Republic from TeleGeography, November 2012.

and Egypt, despite having low fixed broadband prices, penetration rates are the lowest in the region (circle 2, figure 2.5).

What could cause this diversification of prices across markets? And why are those countries characterized by both a low penetration rate and low prices?

Emerging-stage countries may be roughly split into two groups: (a) low penetration rate and high price; and (b) low penetration rate and low price.

A low penetration rate and high prices in Djibouti, Tunisia, and Algeria, could be explained by monopolistic characteristics of the broadband market and an absent or limited fixed-to-mobile substitution effect. For instance, in the case of Djibouti, high fixed broadband prices could be explained by the absence of competition in the market (see table 2.2). The state has a monopoly for provision of both fixed and mobile services. As well as providing all fixed line and Internet access services, the state-owned company Djibouti Telecom (DT) is also the country's sole provider of mobile telephony services. In the case of Tunisia, the fixed broadband price is relatively high, apparently owing to lack of competition and comparable mobile broadband prices. In the case of Algeria, broadband has

Table 2.2 Penetration and Prices of Fixed and Mobile Broadband Access, December 2012

<i>Fixed BB market development stage</i>		<i>Economy</i>	<i>Price</i>	<i>Fixed</i>	<i>Price</i>	<i>Mobile</i>	<i>Number of 3G/4G operators</i>
			<i>fixed BB, PPP</i>	<i>broadband penetration (%)</i>	<i>mobile BB, PPP</i>	<i>broadband penetration (%) (3G + 4G)</i>	
Emerging	Low penetration, high prices	Algeria	35.21	18.10	n/a	0	0
		Tunisia	35.94	23.40	38.65	5.10	3
		Djibouti	45.10	10.30	157.50	2.22	1
	Low penetration, low prices	Iraq	3.76	6.70	n/a	0.49	0
		Egypt, Arab Rep.	17.08	14.10	37.76	56.37	3
		Morocco	19.85	10.90	21.95	10.14	3
		Yemen, Rep.	18.04	2.40	23.25	1.82	1
		Syrian Arab Republic	23.32	3.60	58.30	4.33	2
		Libya	27.06	8.60	453.32	23.35	2
		Iran, Islamic Rep.	25.52	12.00	n/a	0.05	1
Developing	Higher penetration, low prices	Saudi Arabia	7.30	51.70	17.04	55.89	3
		Kuwait	12.56	32.10	25.11	67.78	3
	Lower penetration, higher prices	Jordan	26.29	25.40	13.61	52.69	3
		Oman	29.58	25.70	14.79	56.95	2
		Lebanon	27.18	29.60	54.63	26.65	2
	High penetration, high prices	West Bank and Gaza	39.19	25.10	n/a	0	0
		Qatar	52.46	66.40	15.74	64.44	2
		United Arab Emirates	53.99	69.40	28.28	69.23	2
		Bahrain	34.58	88.90	24.21	74.24	3
		Simple average, MENA	28.11	27.60	65.61	30.09	
Mature	Weighted average MENA	21.52	17.10	43.96	22.2		

Sources: Fixed broadband household penetration, mobile broadband subscriber penetration, number of 3G/4G operators—TeleGeography's GlobalComms Database (<http://www.telegeography.com>, retrieved August 2013). For the Syrian Arab Republic, the source for fixed broadband price—TeleGeography's GlobalComms Database (<http://www.telegeography.com>, retrieved November 2012); in all other cases, prices of fixed and mobile broadband monthly subscriptions—World Bank analysis based on operators' data, January 2013.

Note: 3G = third generation of mobile telecommunications technology; 4G = fourth generation of mobile telecommunications technology; BB = broadband; MENA = Middle East and North Africa; PPP = purchasing power parity.

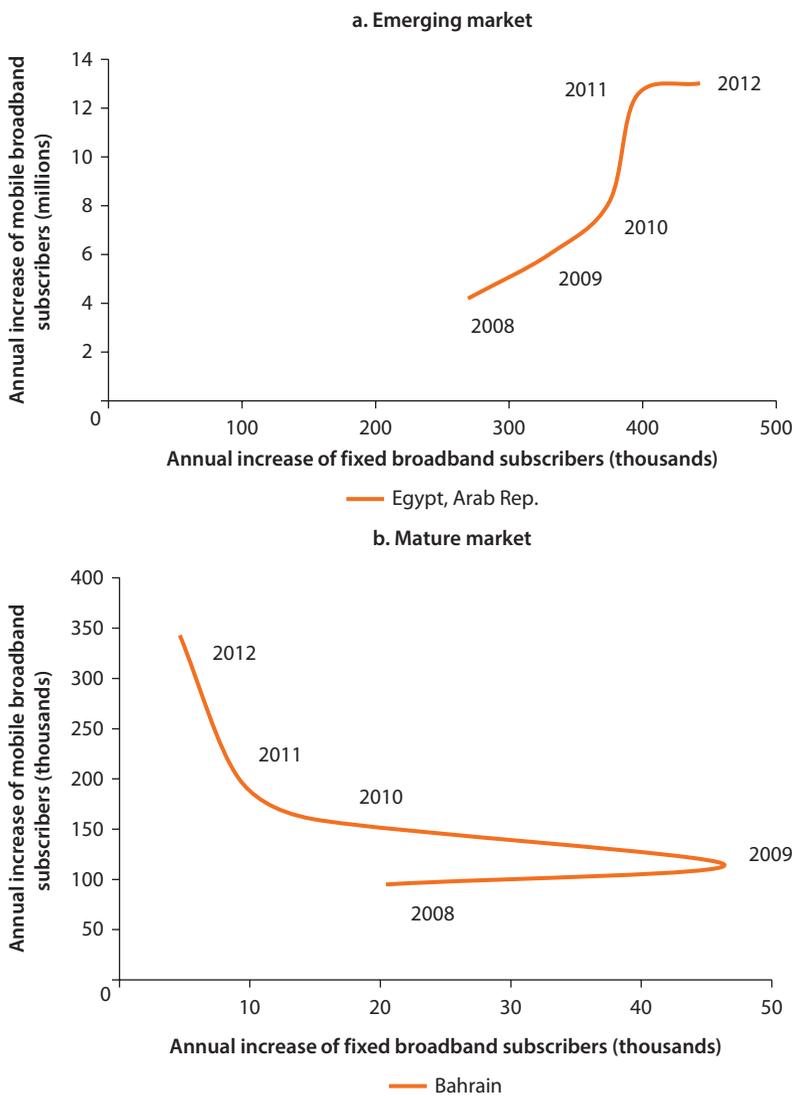
relatively high prices, most likely because of the lack of competitive pressure and absence of mobile broadband.

Low penetration rates and low prices in Egypt and Morocco can be attributed to the strong fixed-to-mobile substitution effect, and by unsatisfactory offers of fixed broadband services. Indeed, in all these countries mobile broadband markets are highly competitive with at least three 3G operators providing services to the vast majority of the population. As a result of fierce competition, mobile broadband prices are comparable to those of fixed broadband. The fixed-to-mobile substitution effect is well observed in the case of Egypt (see figure 2.6) where growth of fixed broadband subscribers is stagnating and mobile broadband

is booming. Fixed broadband in Egypt only started to increase at a faster rate in 2012. In the case of other emerging countries, the fixed and mobile subscriber bases are growing and the substitution effect is not as visible as it is in the case of a mature, saturating fixed broadband market (see figure 2.6, panel b, Bahrain).

At the same time, emerging fixed broadband markets are much less competitive and are dominated by incumbent fixed operators. Fixed broadband networks are underdeveloped in terms of both coverage and technology. For instance, in the cases of Egypt, Morocco, and Syria, nearly all fixed broadband connections are

Figure 2.6 Fixed-to-Mobile Substitution in an Emerging Market (Arab Republic of Egypt) and a Mature Market (Bahrain), December 2012



Source: Based on TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

supplied using digital subscriber line (xDSL) technology over the incumbent operator's network. Fixed broadband subscribers migrate to mobile broadband operators because of the fixed-to-mobile substitution effect, and the resulting competitive pressure keeps fixed broadband prices low. This closed loop could potentially be broken through investments in infrastructure development and an upgrade of fixed broadband networks. This would allow fixed broadband operators to diversify their services in terms of speed and quality from those of mobile operators.

Of those economies where there is no substitution observed between fixed and mobile broadband (Iraq, Algeria, the Republic of Yemen, the Islamic Republic of Iran, and the West Bank and Gaza), Iraq and the Republic of Yemen currently have 3G services.

In Iraq, one 3G license was issued in just one of the regions for one operator and the majority of the population does not have access to mobile broadband services. In both Iraq and the Republic of Yemen, the mobile broadband market is not competitive. In the Republic of Yemen, the only 3G operator is the state-owned company; in the Islamic Republic of Iran, only one operator was awarded a 3G license in 2012 and mobile broadband is not yet available to the majority of the population.

In Algeria, the Islamic Republic of Iran, and the Republic of Yemen, the poor performance of the fixed broadband market could also be explained by specific policy decisions. In 2010, the government of the Republic of Yemen took the decision to make dial-up Internet access service available to the entire population of the country free of charge in order to encourage greater Internet usage. As a result, the number of Internet subscribers grew significantly. However, toward the end of 2012, less than 30 percent of all Internet subscribers were using broadband to access the Internet while for the majority of Internet subscribers the policy was a disincentive for people to switch to the paid Internet service even if it offered higher speeds. This scenario of low prices (or free service) and a low consumer base will likely not sustain the required investments for technological development of fixed broadband infrastructure in the Republic of Yemen.

In Algeria, lower fixed broadband prices resulted from the government's decision in 2008 to halve the price of xDSL while delaying the award of 3G licenses. The decision was applicable to all the Algerian Internet service providers (ISPs) and was aimed at stimulating broadband usage in the country. Indeed, the number of xDSL subscribers grew by over 100 percent in 2008. However, continued growth did not take place. As in the case of the majority of the countries in the emerging development stage, fixed broadband connections in Algeria are mostly supplied over xDSL, and near absent competition (the share of alternative players was about 0.6 percent at end-2012) cannot sustain further market development. In the Islamic Republic of Iran, in October 2006 the government ordered all of the country's service providers to restrict Internet transmission speeds to 128 kilobits per second (kbps). As of May 2012, the 128 kbps restriction still applied to residential subscribers; higher speeds are available for business and corporate customers. These decisions have potentially hindered technological

development toward greater speeds (over 256 kbps); therefore, both connection speeds (mostly supplied over Worldwide Interoperability for Microwave Access [WiMax]) and prices are low.

In the cases of Iraq and Libya, the low price can be explained by increasing availability of cheap WiMax subscriptions. However, coverage of those networks remains limited and patchy, and at the same time the connection speeds are relatively low. It may be presumed, therefore, that at some moment in time when operators decide to increase both coverage and speed, prices of retail offers may increase due to the investments needed.

In the case of developing fixed broadband markets, namely West Bank and Gaza, Jordan, Oman, Lebanon, Kuwait, Saudi Arabia, Qatar and the United Arab Emirates, technological diversity is an important factor allowing fixed broadband services to develop. For instance, in Qatar at the end of 2012, over 30 percent of all fixed broadband connections were supplied over fiber-to-the-x (FTTx) technology while in Jordan, over 30 percent of all fixed broadband connections were supplied over WiMax infrastructure with download speeds of up to 5 megabits per second (Mbps). In Saudi Arabia, over 25 percent of all connections are supplied over both FTTx and WiMax. Only in Lebanon, Kuwait, and West Bank and Gaza were nearly 90 percent of all broadband connections supplied through xDSL infrastructure, which is consistent with lower competition in those markets compared to Jordan or Saudi Arabia. Lower prices in Kuwait resulted from the decision of the Ministry of Communications to impose a price cut of up to 40 percent in September 2012 (circle 3, figure 2.5). In the case of Oman, low levels of competition are hindering the development of the fixed broadband (as of December 2012, the market share of incumbent operators measured by number of subscribers was over 60 percent). On top of that, desert terrain and a scattered population present logistical obstacles to deployment of fixed broadband Internet services in Oman. While both fixed and mobile technologies provide services at similar speeds, mobile networks are composed of lighter infrastructure and are therefore easier and less costly to deploy, particularly in areas with difficult terrain. In spite of the creation of a new, open access, national backbone network (Qatar National Broadband Network [QNBN]), limited competition at the access level may explain the high price for fixed broadband access in Qatar (circle 4, figure 2.5). In the United Arab Emirates, prices are higher, which is again most likely the outcome of low levels of competition (the market is dominated by the incumbent operator with a market share above 85 percent, see table B2.4.1 and circle 4, figure 2.5). On the other hand, Saudi Arabia enjoys one of the lowest fixed broadband prices in the region (circle 3, figure 2.5) thanks to facilities-based competition with Saudi Telecom Company (STC) (incumbent operator), which was introduced in August 2004 when alternative operators were granted concessions allowing them to roll out their own network infrastructure (see table 2.3). As of December 2012, the market share of alternative operators measured by number of subscribers was over 60 percent.

In general, countries at the developing stage (with higher household penetration) also demonstrate higher growth, which is consistent with their position on

the s-curve (i.e., between the first and second inflections). Jordan is the exception among the countries in the developing stage. The low penetration growth of fixed broadband could be explained by a strong fixed-to-mobile substitution effect. Indeed, after the launch of commercial 3G services in Jordan in September 2010, the annual growth of fixed broadband penetration (nevertheless already slowing down) dropped to -0.5 percent and between 2011 and 2013 was only 2.5 percent (see figure 2.7).

The mature fixed broadband market of Bahrain, with household penetration rates surpassing 80 percent, is nearing saturation. Similarly, the penetration rate in the United Arab Emirates is close to 70 percent (see table 2.2 for households penetration and figure 2.8 for the shape of the S-curves). However, in Qatar, which also demonstrates high fixed broadband penetration rate (above 65 percent), signs of saturation are yet to be observed. Over 60 percent of all fixed broadband connections in Qatar are still supplied over xDSL, while both Bahrain and the

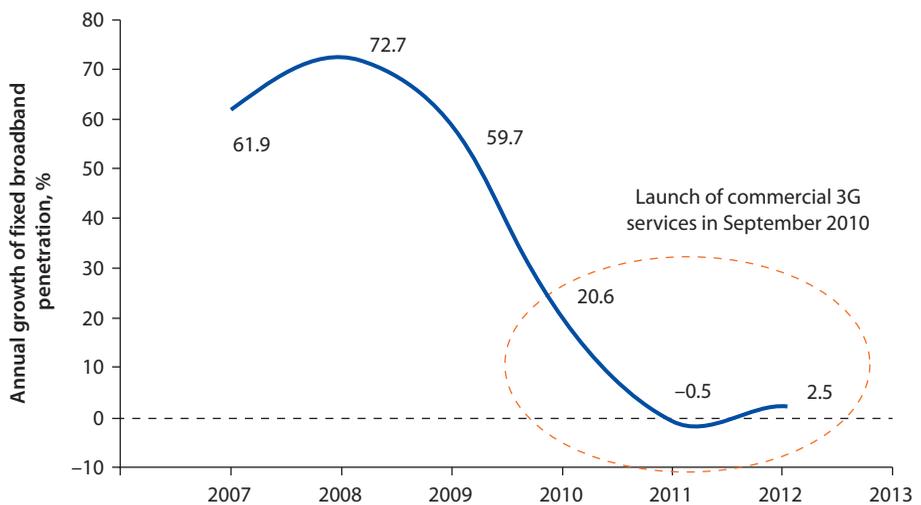
Table 2.3 Market Share of Incumbent Operator in Selected Markets, December 2012

<i>Economy</i>	<i>Market share of incumbent operator (%)</i>
West Bank and Gaza	100*
Qatar	100
Lebanon	88.9
United Arab Emirates	85.2
Oman	62.7
Jordan	60.4
Saudi Arabia	38.6

Source: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

Note: The market share does not account for unauthorized broadband operators in West Bank and Gaza.

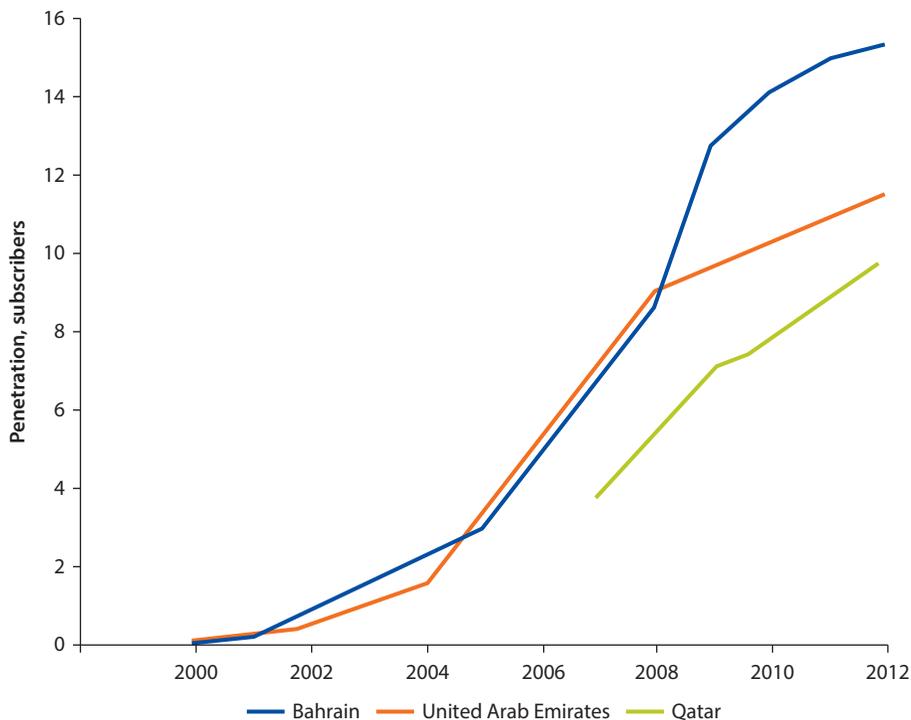
Figure 2.7 Fixed-to-Mobile Substitution in Jordan, December 2012



Source: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

Note: 3G = third generation of mobile telecommunications technology.

Figure 2.8 S-Curves of Fixed Broadband Market Development in Bahrain, the United Arab Emirates, and Qatar



Sources: ITU (2000–2006); TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013) (2007–2012). Information for Qatar is available only from 2007.

Note: Data for household penetration are not available from 2000; subscriber penetration was used for better vitalization of the S-curve.

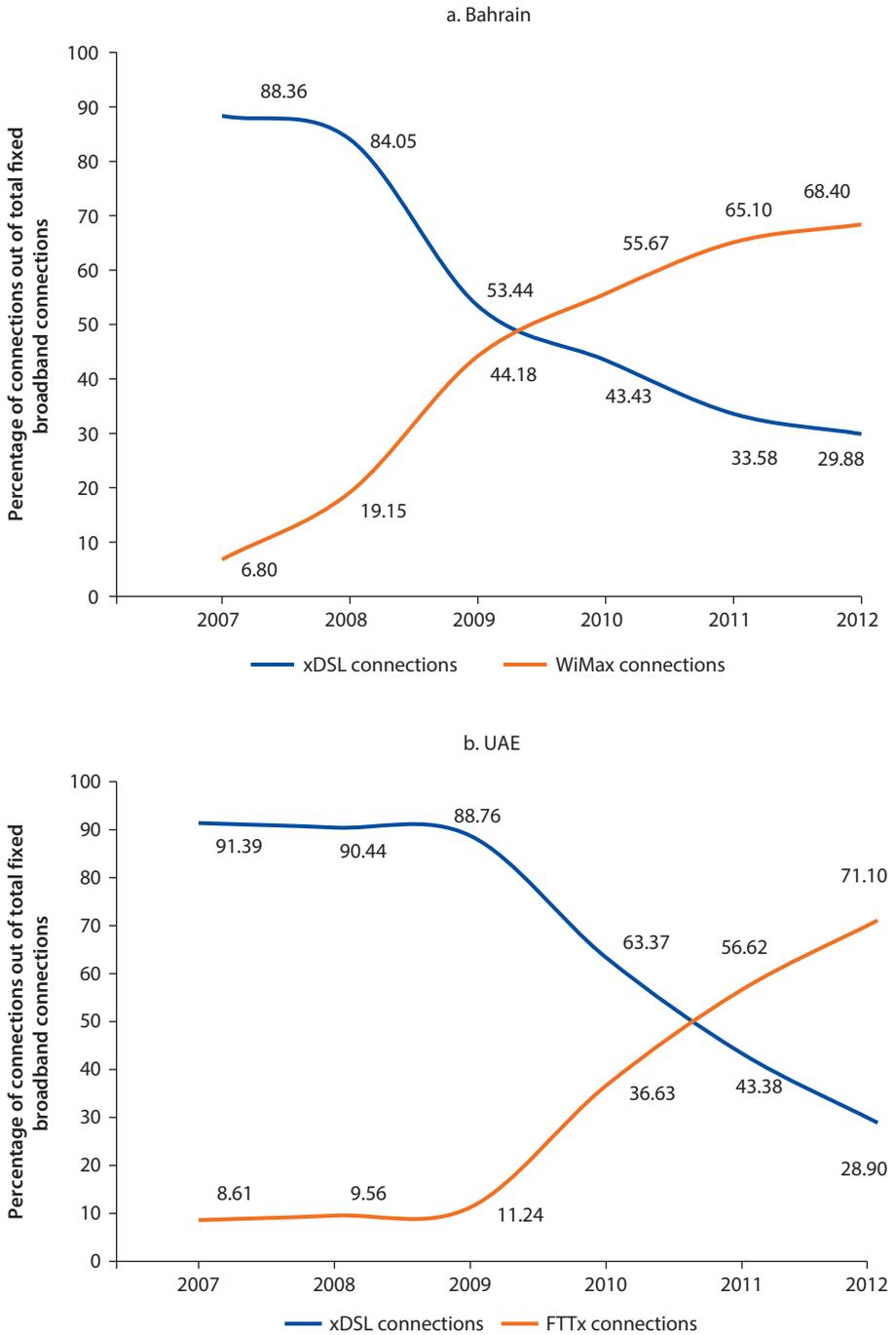
United Arab Emirates have the lowest levels of xDSL connections in the region. In the case of Bahrain, the competitive market environment has lessened the dominance of the incumbent operator, Batelco, which provides less than 30 percent of all fixed broadband connections and faces infrastructure-based competition from two alternative operators providing services over their own WiMax infrastructures. The number of fixed broadband connections supplied over xDSL was surpassed by WiMax connections in 2009.

In the case of the United Arab Emirates, the decrease of xDSL connections is caused by a network upgrade and deployment of FTTx infrastructure. In 2010, the number of FTTx connections in the United Arab Emirates surpassed the number of xDSL connections (see figure 2.9). In terms of fixed broadband prices, Bahrain has a more competitive market and also has lower prices.

Conclusions

The majority (10 countries out of 19) of the fixed broadband markets in MENA are in the emerging development phase with a household penetration rate below 25 percent. Five markets are in the developing stage and only one is considered mature.

Figure 2.9 Trends in Fixed Broadband Access Technologies in Bahrain and the United Arab Emirates, December 2012



Source: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

Note: FTTx = fiber-to-the-x; WiMax = Worldwide Interoperability for Microwave Access; xDSL = digital subscriber line.

The main reasons for this weak development are low or absent competition and the fixed-to-mobile substitution effect. As a result of weak competition, fixed broadband markets in MENA suffer from low investment and underdeveloped infrastructure in terms of both technology and coverage. Slow fixed broadband connections do not allow the operators to compete with 3G/4G broadband in terms of speed and quality. In some instances, slower take-up of higher speed connections may be a consequence of certain policy decisions.

In a number of countries, the fixed-to-mobile substitution effect is causing slower or even negative growth of fixed broadband penetration. In countries with strong competition in the mobile broadband market (two or three 3G/4G operators), the fixed broadband price is lower (comparable to mobile broadband) than in those where mobile broadband markets are not competitive.

More developed markets demonstrate higher technological diversity and stronger growth. Markets with stronger competition in the fixed broadband market also experience lower prices.

Mobile Broadband Markets in MENA

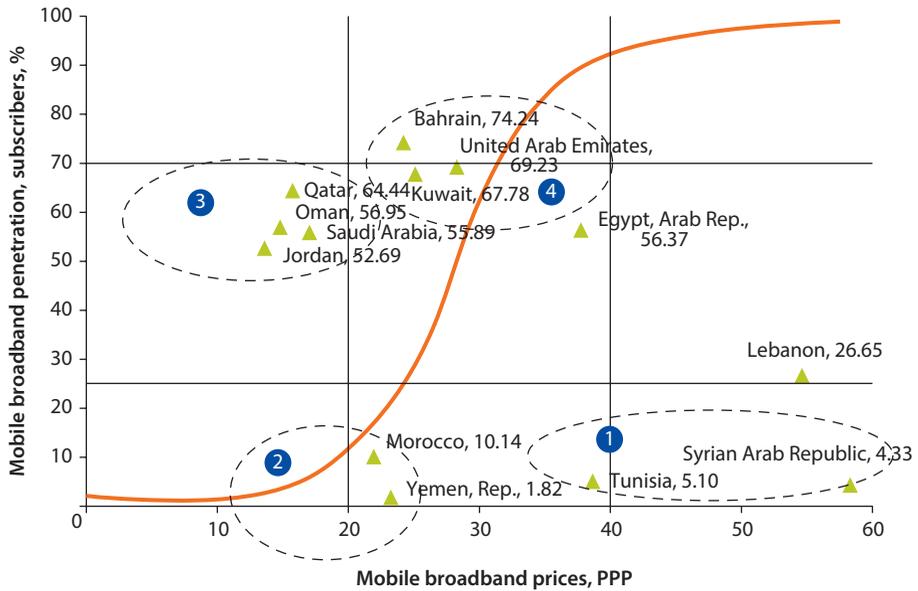
Mobile broadband markets in MENA are much more developed when compared to their respective fixed broadband markets. Most of the mobile broadband markets are in the developing phase. In most of the MENA countries at the end of 2012, penetration of mobile broadband exceeded 25 percent of the population; in eight it exceeded 50 percent; and in Bahrain the penetration rate exceeded 70 percent (see figure 2.10). Mobile broadband is still not available in Algeria and the West Bank and Gaza. Although 3G is officially operational in Iraq, the only 3G operator is currently restricted to the Kurdistan region, and the majority of Iraqis do not have access to 3G services. 3G services are also not available to, majority of the population in the Islamic Republic of Iran. In both countries, penetration of mobile broadband is below 1 percent of the population (see table 2.5 later in this chapter).

A higher penetration rate is caused by a number of factors, but most importantly by a vibrant competitive market environment. Weaker mobile broadband market development is caused by insufficient competition. Delayed spectrum auctions are the cause of the lack of mobile broadband in Algeria, while obtaining the necessary radio spectrum frequencies from the government of Israel is the reason behind the lack of mobile broadband in the West Bank and Gaza.

This section clusters MENA countries according to their level of mobile broadband market maturity and provides insights into market development circumstances taking into account mobile broadband prices, level of competition in the mobile broadband market, and policy decisions related to spectrum auctioning.

Figure 2.10 presents the distribution of the MENA countries along the s-curve characterizing typical development of any product or service market, including the mobile broadband market. Countries are positioned on the x-axis taking into account respective prices of mobile broadband access. As may be seen from figure 2.10, most of the countries (8 out of 19) have a subscriber penetration rate above 25 percent and below 70 percent, which puts them in the

Figure 2.10 Mobile Broadband Penetration and Access Prices, December 2012



Source: Mobile broadband penetration subscribers: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved March–May 2013).

Note: PPP = purchasing power parity. Mobile broadband prices in Libya (US\$453.32 PPP) and Djibouti (US\$157.50 PPP) are not presented owing to the high values. In table 2.5: circle 1—Low penetration, high prices; circle 2—Low penetration, lower prices; circle 3—Higher penetration, low prices; circle 4—High penetration, higher prices.

Methodology for price calculation: Prices were collected from public sources (operators' websites); ITU definition for broadband (256 kbps downstream); data cap of 1 gigabit (Gb) was considered when available; the price of the operator with the biggest market share was used. However, if their market share was less than 50 percent, the price of the second-biggest operator was also researched, and the arithmetic mean of the two operators was used; the cheapest offer was selected; prices were collected in January 2013.

Table 2.4 Distribution of MENA Countries Among Three Development Stages

<i>Mobile broadband market development stage</i>	<i>Economies</i>
Not existent	Algeria; Iran; Islamic Rep.; Iraq; West Bank and Gaza
Emerging	Djibouti; Libya; Morocco; Syrian Arab Republic; Tunisia; Yemen; Rep.
Developing	Egypt; Arab Rep.; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; United Arab Emirates
Mature	Bahrain

developing stage (see table 2.4). Bahrain is the only country with a penetration rate above 70 percent. The remaining countries are in the emerging market development phase.

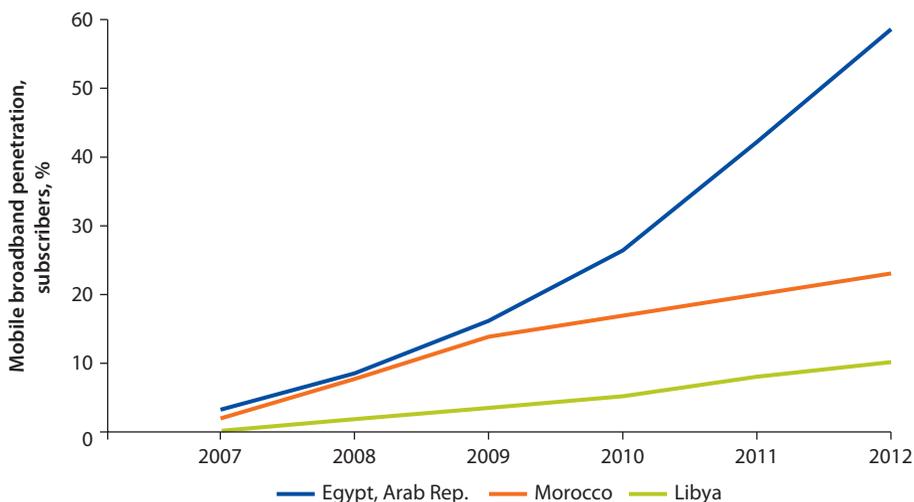
In general, the Gulf countries appear to be the early adopters. Bahrain, Kuwait and the United Arab Emirates launched 3G services as early as 2004, and Qatar and Saudi Arabia followed in 2006. Outside the Gulf subregion, Libya launched

3G services in 2006, Egypt and Morocco in 2007. Five countries launched commercial 4G services before December 2012 (analyzed period). Lebanon and Qatar launched 4G services in 2013. However, in terms of take-up, the results are very different. For instance, despite the fact that all three countries launched 3G services in a similar period of time (Libya in November 2006, Morocco in February 2007, and Egypt in May 2007), Egypt demonstrates the sharpest growth, while the penetration rate in Libya and Morocco is growing slowly (see figure 2.11).

In terms of prices, mobile broadband markets are more homogeneous when compared to fixed broadband (see table 2.5), and the overall price level is higher. This price level could be mainly attributed to the intensity of competition in the respective markets. Competition is driven by many factors, including the number of operators, date of entry in the market, and quality of the regulatory framework. Lower penetration rates are also explained by a later date of commercial launch of 3G services.

High prices and low penetration in Libya and Djibouti could be explained by weak or nonexistent competition in the market. In Libya, for instance, the market is divided between two 3G operators which are state-owned companies (Libyana started offering 3G services in September 2006, Al-Madar in March 2007). Also in Libya, mobile networks suffered severe damage during the civil war but were fully restored by November 2012, with an understandable impact on penetration. In Djibouti, the state-owned Djibouti Telecom is the only 3G operator in the country. The low penetration rates (2.22 percent) can be also attributed to the relatively recent launch of 3G services in 2011.

Figure 2.11 Take-up of Mobile Broadband in the Arab Republic of Egypt, Morocco, and Libya, December 2012



Source: TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013).

Table 2.5 Penetration Rates and Prices of Mobile Broadband Access, December 2012

<i>Mobile BB market development stage</i>		<i>Economy</i>	<i>Price mobile BB, PPP</i>	<i>Penetration mobile BB, Sub, (%)</i>	<i>3G/4G operators</i>	<i>Launch of 3G/4G services</i>
Nonexistent (below 1%)		Algeria	Not applicable	0.00	0	Not applicable
		West Bank and Gaza	Not applicable	0.00	0	Not applicable
		Iran, Islamic Rep.	Not applicable	0.05	1	2012
Emerging	Low penetration, very high price	Iraq	Not applicable	0.49	1	2012
		Djibouti	157.50	2.22	1	2011
	Low penetration, high price	Libya	453.32	23.35	2	2006
		Syrian Arab Republic	58.30	4.33	2	2008
	Low penetration, lower prices	Tunisia	38.65	5.10	3	2010
		Yemen, Rep.	23.25	1.82	1	2009
Developing	Low penetration, lower prices	Morocco	21.29	10.14	3	2007
		Jordan	13.61	52.69	3	2010
	Higher penetration, low prices	Oman	14.79	56.95	2/2	2007/2012
		Qatar	15.74	64.44	2	2006
	High penetration, higher price	Saudi Arabia	17.04	55.89	3/3	2006/2011
		Kuwait	25.11	67.78	3/3	2004/2011
		United Arab Emirates	28.28	69.23	2/1	2004/2011
	Lower penetration, high price	Egypt, Arab Rep.	37.76	56.37	3	2007
Lebanon		54.63	26.65	2	2011	
Mature	High penetration, higher price	Bahrain	24.21	74.24	3/3	2004

Sources: Mobile broadband subscriber penetration—TeleGeography's GlobalComms Database (<http://www.telegeography.com>, data retrieved August 2013); prices of mobile broadband—World Bank analysis based on operator data, January, 2013; number of 3G/4G operators and launch of 3G/4G services—GSMA Intelligence (data retrieved August 2013).

Note: In Morocco, the third 3G operator (Maroc Telecom [Vivendi]) launched 3G services in 2008. In 2013, 4G services were launched in Bahrain, Lebanon, and Qatar. 3G = third generation of mobile telecommunications technology; 4G = fourth generation of mobile telecommunications technology; BB = broadband; n.a. = not applicable; PPP = purchase power parity; Sub = .

Higher prices and low penetration rates in Syria (despite the relatively early launch of 3G services) could be explained by weaker competition in the market divided by two operators, whereas in Tunisia, similar development of penetration and prices could be attributed to a relatively recent launch of 3G services (2010). In the Republic of Yemen, there is low take-up of both fixed and mobile broadband services. Despite this, the prices for mobile broadband are relatively low—one of the factors may be the competitive pressure from free dial-up services. The lack of competition in the mobile broadband market in the Republic of Yemen (there is only one 3G operator),

and the provision of free dial-up Internet service by the incumbent operator is most likely hampering new investment in network expansion. Currently, 3G coverage in the Republic of Yemen is limited to Sana'a, Aden, and the oil fields.

Eight out of 16 existing MENA mobile broadband markets are in the development stage and seven of them have a subscriber penetration rate of more than 50 percent. Three countries are approaching the mature stage—Qatar (64.66 percent), Kuwait (67.78 percent) and the United Arab Emirates (69.23 percent). All the markets in the development phase are highly competitive with mainly privately owned operators. The only exception is Lebanon where both mobile networks are owned by the state and there are two management contracts. In February 2013, Lebanon prepared a second tender for bids to manage its two mobile network operators, Touch and Alfa, under contracts of up to five years (Byblos Bank 2013). Since 2009, Touch and Alfa have been operated by Zain and Orascom Telecom Media and Technology (OTMT), respectively. In 2012, mobile broadband prices in Lebanon were relatively high compared to other developing markets. Recently the Government of Lebanon took the decision to lower mobile tariffs, including mobile broadband tariffs.

Conclusions

Eight countries out of the 19 mobile broadband markets in MENA are in the developing phase with the subscriber penetration rate exceeding 25 percent (see table 2.5). Six markets are in the emerging stage, with just one in the mature stage. In four countries, mobile broadband services are not available at all or are not available to the majority of the population.

The main reason for the rapid development of mobile broadband markets is the presence of effective competition. While fixed broadband markets in MENA suffer from low investment and underdeveloped infrastructure, in terms of both technology and coverage owing to weak competition, mobile broadband markets are developing increasingly well in terms of both penetration and coverage. Therefore, higher take-up in some instances could be observed at a higher price level when compared to the fixed broadband market.

Further development of mobile broadband will require additional spectrum allocations. As of December 2012, only four countries in MENA had launched commercial 4G services. Before the fourth quarter of 2013, three more countries will have launched commercial 4G networks.

More developed markets also have stronger growth. Markets with stronger competition in the mobile broadband market also have lower prices.

Aggregate Broadband Development Clustering of MENA Countries

Taking an overall view of both fixed and mobile broadband markets, 10 out of 19 MENA countries are in the emerging phase (see table 2.6). *Infrastructure deployment and development of competition* are the main challenges for those countries in both fixed and mobile broadband markets.

Table 2.6 Clustering of MENA Countries in Terms of Broadband Market Development

<i>Economy</i>	<i>Fixed broadband market development stage</i>	<i>Mobile broadband market development stage</i>
Algeria	Emerging	Not applicable
Iran, Islamic Rep.	Emerging	Not applicable
Iraq	Emerging	Not applicable
Djibouti	Emerging	Emerging
Libya	Emerging	Emerging
Yemen, Rep.	Emerging	Emerging
Syrian Arab Republic	Emerging	Emerging
Tunisia	Emerging	Emerging
Morocco	Emerging	Emerging
Egypt, Arab Rep.	Emerging	Developing
West Bank and Gaza	Developing	Not applicable
Oman	Developing	Developing
Kuwait	Developing	Developing
Lebanon	Developing	Developing
Jordan	Developing	Developing
Saudi Arabia	Developing	Developing
Qatar	Developing	Developing
United Arab Emirates	Developing	Developing
Bahrain	Mature	Mature

Note: MENA = Middle East and North Africa; n.a. = not applicable.

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