

Report

**On Telecommunications services indicators
in the Kingdom of Bahrain**

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in the Kingdom of Bahrain**

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The Telecommunications Regulatory Authority**

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Report
On Telecommunications services indicators
in the Kingdom of Bahrain

Table of Contents

Introduction	3
1 Overall Market data.....	5
1.1 Services offered by Licensees	5
1.2 Telecommunications indicators.....	6
1.3 Telecommunications markets revenue	7
1.4 Number of employees working in the Telecom sector.....	9
2 Fixed line services	10
2.1 Number of fixed lines	10
2.2 National fixed lines minutes volume	11
2.3 Fixed lines revenue.....	12
3 Mobile services.....	14
3.1 Mobile subscribers.....	14
3.2 Mobile outgoing minutes.....	15
3.3 Roaming traffic.....	16
3.4 Mobile services revenues.....	17
3.5 Mobile data subscribers	18
4. Internet services.....	19
4.1 Internet subscribers.....	19
4.2 Internet revenue	22
5 International calls services.....	24
5.1 International outgoing minutes.....	24
5.2 International calls revenue.....	26
6 Leased lines and data services	28
6.1 Domestic leased lines	28
6.2 International leased lines	29
6.3 Data services.....	30

Report
On Telecommunications services indicators
in the Kingdom of Bahrain

Introduction

The collection, analysis and dissemination of accurate and timely market information significantly enhances the design of effective, proportional and efficient market regulation. Consequently the Telecommunications Regulatory Authority (TRA) has commenced a process of collecting market information from licensed operators on a twice yearly basis – in January and July. It is expected that the publication of market information will also prove beneficial to all stakeholders including licensed operators, consumer and business user groups as well as other interested parties, by tracking the developments in the sector over time.

In July 2007, TRA sent its initial questionnaire to all licensed operators. TRA has subsequently to the submission of responses aggregated and analyzed the data collected. It is a legal requirement Under section 54 of the Telecommunications Law, for TRA to publish, as it considers appropriate, information collected in accordance with the provisions of the Telecommunications Law.

When publishing such information TRA must have regard to the need to exclude any information which relates to the private affairs of a Person¹ and information the publication of which would or might in the opinion of the TRA seriously and prejudicially affect the interests of any Person.

TRA has taken the necessary steps to ensure that it complies with the requirements of section 54, including not publishing information which may be considered confidential information.²

Unless specified, the information contained in this report is based on licensed operators' responses to the data questionnaire as well as historical data held by TRA.

This report covers a large range of telecommunications services indicators such as subscribers number, penetration rates, calls usage and telecommunications revenues.

Disclaimer

The information in this document is indicative of the state of the telecommunications industry in the Kingdom of Bahrain up to and as at Q2 2007 only.

The TRA has gathered the information in this document from sources outside the TRA, including licensed operators.

¹ Note that Person is defined in the Telecommunications Law to mean any natural or artificial person or public authority.

² Please see the TRA's position paper on its treatment of confidential and non-confidential information at http://www.tra.org.bh/en/pdf/Confidentiality_Guidelines_Final.pdf

Report

On Telecommunications services indicators in the Kingdom of Bahrain

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Report

On Telecommunications services indicators in the Kingdom of Bahrain

1 Overall Market data

1.1 Services offered by Licensees

As of June 2007 TRA has issued 134 licenses to 63 companies. Out of these 63 companies 17 operators currently provide telecommunications services. Table 1 shows the services provided by each operator based the responses received.

Table 1: Services offered by Licensees

	Operator Name	National Fixed	International Calls	Mobile	Internet	Leased line	Other data services ³
1	2Connect	√	√		√	√	√
2	ANIS		√				
3	Batelco	√	√	√	√	√	√
4	BT Solutions LTD						√
5	Business Communication Networks		√				
6	Etisalcom		√			√	
7	Fakhro IT Services		√				
8	Fastelco (TeleGulf)		√				
9	Kalaam Telecom		√		√	√	
10	Light Speed						√
11	Mena Telecom		√		√		
12	Northstar		√				
13	Nuetel Communications	√	√		√		
14	Orbit		√		√		
15	Swiftel International		√				
16	Viacloud		√				
17	Zain (Bahrain)		√	√	√		
	Total	3	15	2	7	4	4

³ For example, LAN Connect services , Global Managed Private Line and Global IP-VPN.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

1.2 Telecommunications indicators

The major telecommunications indicators in the Kingdom of Bahrain are set out in the table below.

The recent adjustment made to population headcount makes historical analysis of penetration rates difficult. In December 2007, the Central Informatics Organization revised its estimate for the 2007 population head count from 760,168 to 1,046,814. Penetration rates have mechanically dropped in Q1 2007. This does not apply to penetration rates at the household level as the Central Informatics Organization has not yet revised its estimate of the number of households in 2007 in Bahrain.

TRA has decided not to perform any adjustment to historical time series for the time being.

Table 2: Telecommunications indicators

Indicator	2005 ⁴	2006	Q1 2007	Q2 2007
Population ⁵	724,645	742,562	1,046,814	1,046,814
Number of households ⁶	113,441	116,533	119,712	119,712
Fixed line services				
Number of fixed lines	193,520	194,196	198,112	201,238
Fixed line penetration	27%	26%	19%	19%
Number of residential fixed lines	121,918	122,343	114,891	116,714
Percentage of households which have a fixed line	n/a	n/a	96%	98%
Domestic calls originated from a fixed line (in million minutes)	788	894	237	247
Mobile services				
Prepaid subscribers	635,277	756,268	784,600	733,781
Postpaid subscribers	131,826	151,165	156,127	166,150
Total mobile subscribers	767,103	907,433	940,727	899,931 ⁷
Mobile penetration as a % of total population	105%	122%	90%	86%
Mobile originated traffic (in million minutes) ⁸			440	474
Internet services				
Dial up subscribers	28,867	21,466	9,356	8,171
Broadband subscribers ⁹	21,432	38,628	53,754	62,734

⁴ The numbers of the subscribers were at the end of the year and the number of minutes represent the cumulative minutes during the year.

⁵ Population head count is sourced from the Central Informatics Organization.

⁶ The number of households is sourced from Central Informatics Organization.

⁷ The drop in the number of mobile subscribers observed in Q2 2007 is due to Zain aligning its definition of active prepaid subscribers to the ITU definition (code 271p) and the definition used by Batelco. After three months of inactivity, prepaid subscribers are not disregarded.

⁸ Mobile originated traffic including domestic calls and international direct dial calls only.

⁹ Broadband subscribers including: wired broadband, wireless broadband and mobile broadband.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Total Internet subscribers	50,299	60,094	63,110	70,905
Internet penetration	7%	8%	6%	7%
Broadband penetration	3%	5%	5%	6%
Number of residential fixed broadband subscribers	18,764	34,858	49,174	54,056
Percentage of households that have fixed broadband	17%	30%	41%	45%
International Traffic (in million minutes)¹⁰	241	361	139	161

1.3 Telecommunications markets revenue

From a base of BD152 million in 2003, the telecommunications industry generated over BD253 million in 2006 (See figure below).¹¹ This is equivalent to annual average growth of about 20%.

Figure 1: Growth in the telecommunications markets revenues

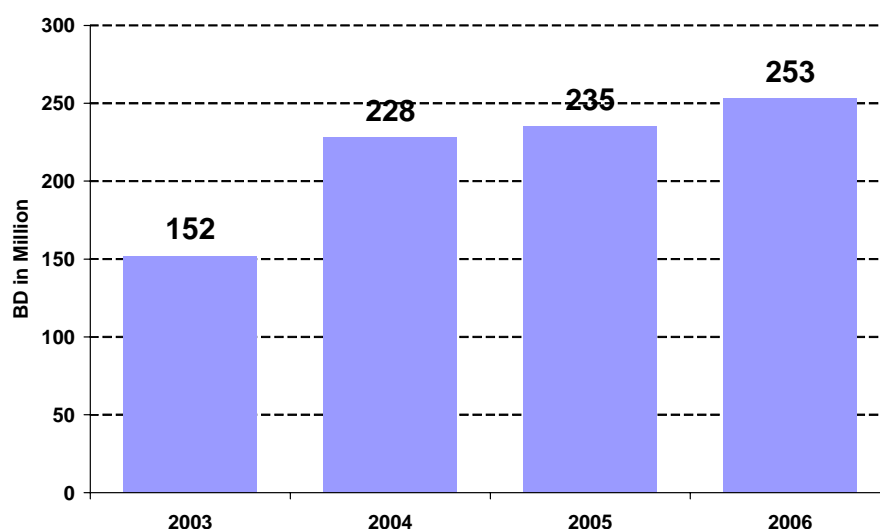


Table 3 shows that during the six months to 30 June 2007, the telecommunications sector in Bahrain generated about BD 125 million in revenues.¹²

¹⁰ The international calls market includes international calls originated from international direct dial (fixed lines and mobile (IDD)), Carrier Pre-Selection (CPS) services, and pre-pay calling cards (PPCC).

¹¹ Source: Annual gross turnover arising from the licensees in the case of an Individual License.

¹² Revenues include only retails revenues.

Report

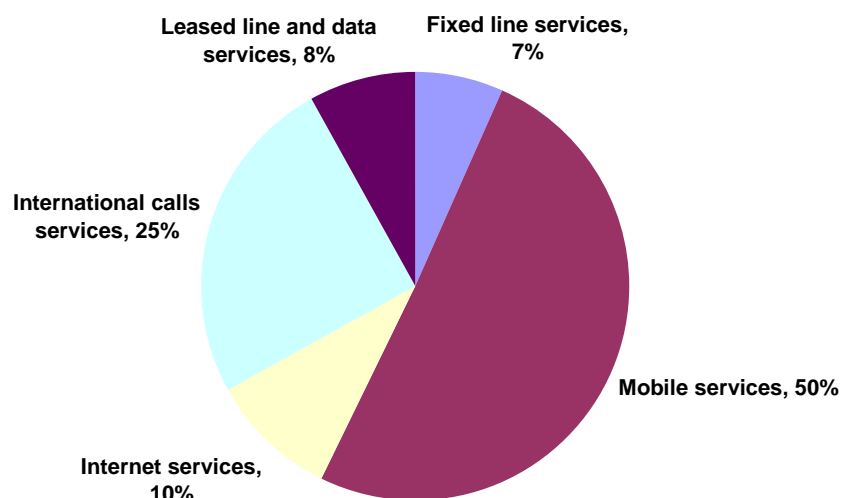
On Telecommunications services indicators in the Kingdom of Bahrain

Table 3: Telecommunications revenues in Q1 and Q2 2007¹³

Retail services (BD in million)	Q1 07	Q2 07	Q1 + Q2
Fixed line services	4.1	4.3	8.4
Mobile services	30.7	32.2	62.9
Internet services	5.9	6.3	12.2
International calls services	14.9	16	30.9
Leased line and data services	4.9	5.3	10.2
Total	60.5	64.1	124.6

Mobile services revenues represent the majority of revenues whilst international calls services represent about a quarter of revenues (see Figure 2).

Figure 2: Distribution of telecommunications revenues at June 2007



¹³ Only revenues from fixed, mobile, Internet, international calls and leased line services are included in this table

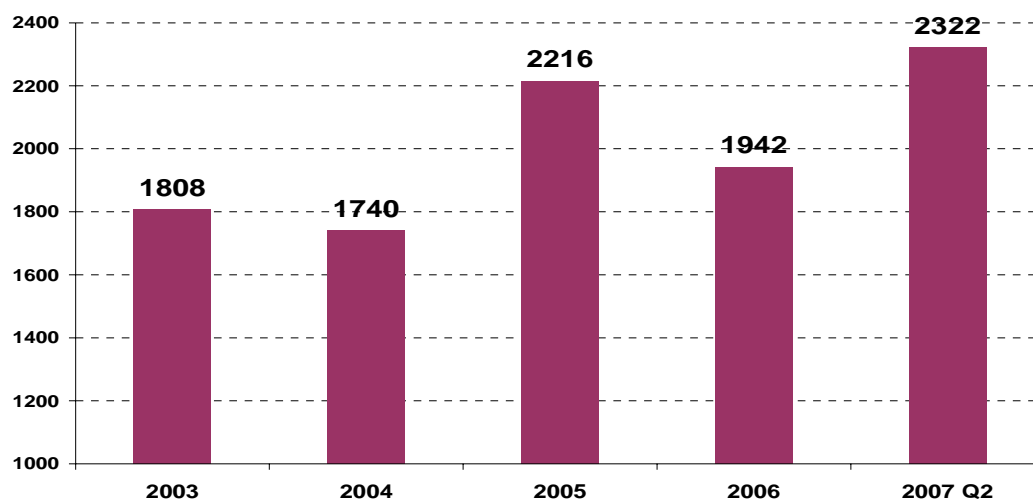
Report

On Telecommunications services indicators in the Kingdom of Bahrain

1.4 Number of employees working in the Telecom sector

Employment figures rose from 1,808 in 2003 to 2,322 in the second quarter of 2007.

Figure 3: Number of employees in telecommunications market¹⁴



¹⁴ Batelco and OLO's excludes staff of the services companies working in the Telecom sector

Report

On Telecommunications services indicators in the Kingdom of Bahrain

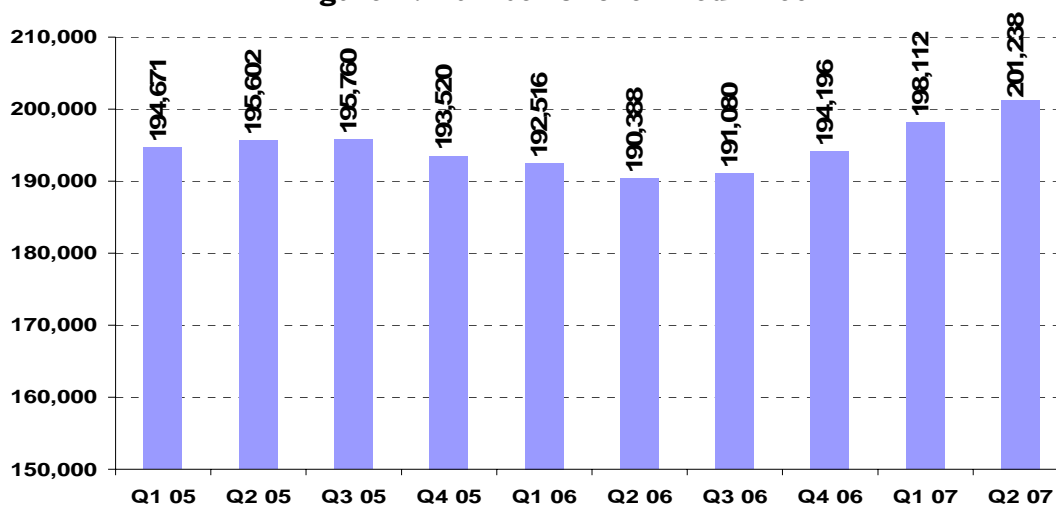
2 Fixed line services

As at July 2007, three operators provided national fixed line services in Bahrain Batelco, 2Connect and Nuetel.

2.1 Number of fixed lines

Figure 4 indicates that the number of fixed lines grew by 6% between Q2 2006 and Q2 2007.

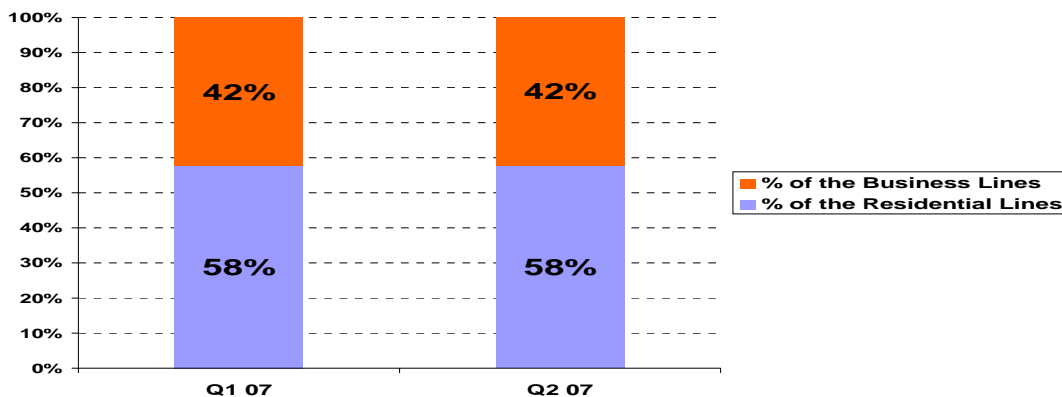
Figure 4: Number of the fixed lines



2.1.1 Proportion of residential and business lines

About 40% of fixed lines are business lines. The relative proportion of business and residential fixed lines remained unchanged in the first and second quarters of 2007.

Figure 5: Proportion of residential and business lines



Report

On Telecommunications services indicators in the Kingdom of Bahrain

2.2 National fixed lines minutes volume

Table 4 shows that national fixed line traffic increased by 4.1% between Q1 2007 and Q2 2007.

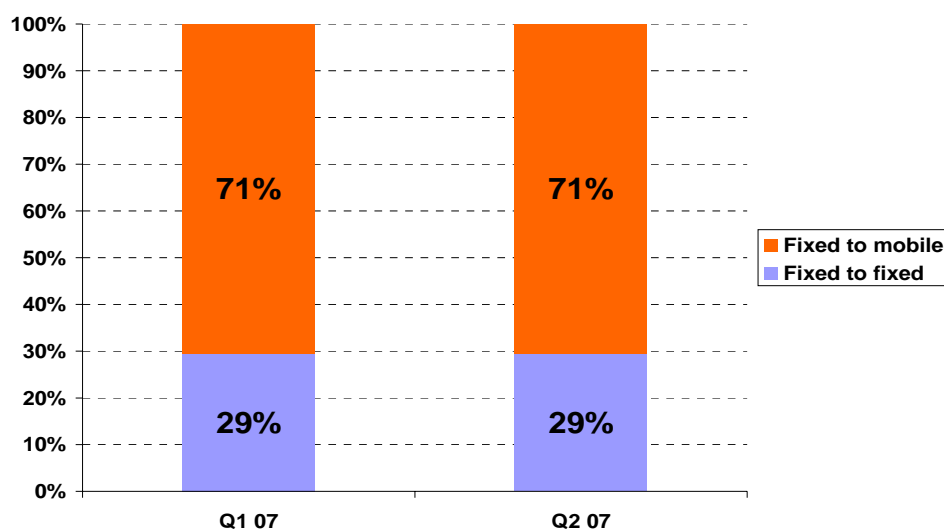
Table 4: National fixed lines minutes volume

National Fixed line traffic (in 000s)	Q1 07	Q2 07	Growth Q2 07 - Q1 07
Outgoing minutes to fixed	70,033	72,926	4.1%
Outgoing minutes to Mobile	167,661	174,446	4.0%
Total outgoing minutes	237,694	247,372	4.1%

2.2.1 Proportion of fixed national calls volume (Minutes)

Over 70% of domestic calls originated from a fixed line are fixed to mobile calls. This proportion has remained unchanged between Q1 2007 and Q2 2007.

Figure 6: Proportion of fixed national calls volume (Minutes)



Report

On Telecommunications services indicators in the Kingdom of Bahrain

2.3 Fixed lines revenue

Table 4 shows that fixed lines revenues grew by 6.1% between Q1 2007 and Q2 2007.

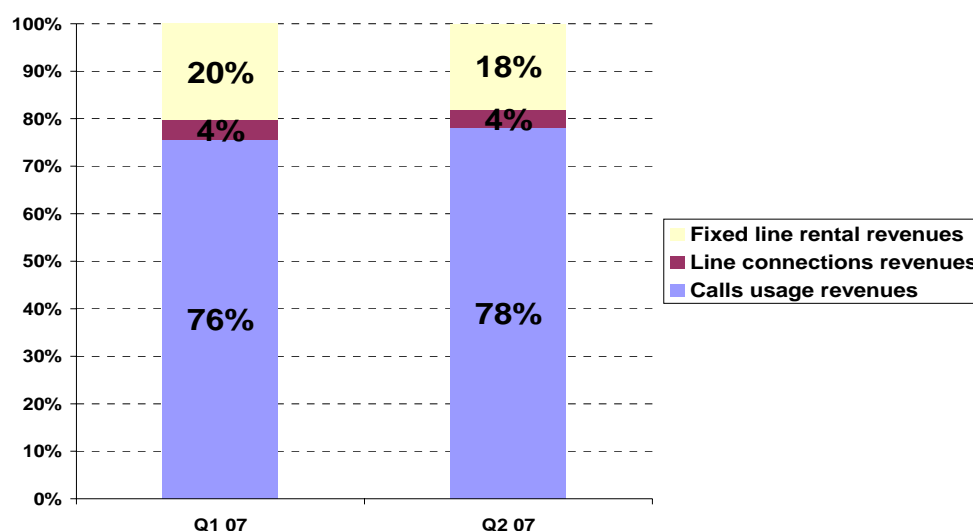
Table 4: Fixed lines revenue

(in BD 000s)	Q1 07	Q2 07	Growth Q2 07 - Q1 07
Fixed line services revenues ¹⁵	4,085	4,337	6.1%

2.3.1 Proportion of fixed line services revenues

At the end of June, fixed lines call usage revenues represented 78% of the total fixed line revenues in Q2 2007.

Figure 7: Proportion of the fixed revenues



2.3.2 Distribution of revenues from fixed lines by users' type

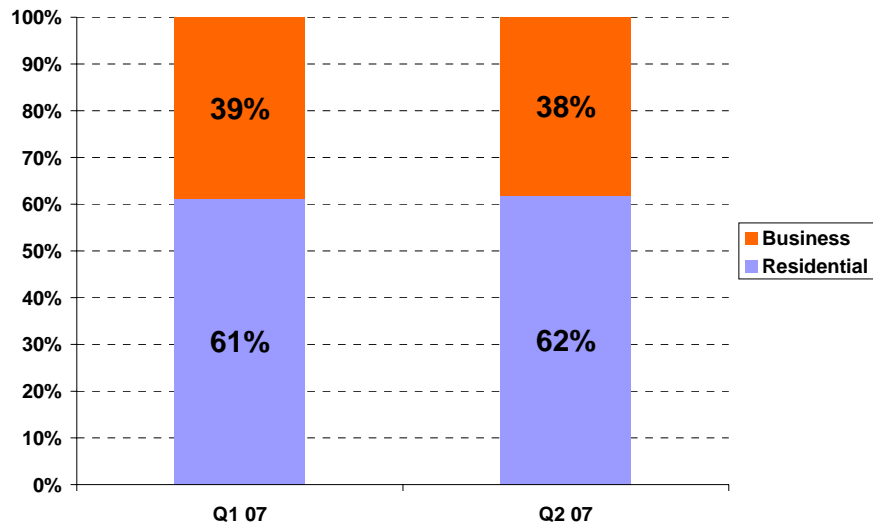
About 60% of revenues from fixed lines are generated by residential users. This percentage remained stable between Q1 and Q2 2007 (see Figure 8 below).

¹⁵ Fixed line revenues include: calls usage, lines connections and lines rental revenues.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Figure 8: Proportion of business and residential fixed lines revenues



Report

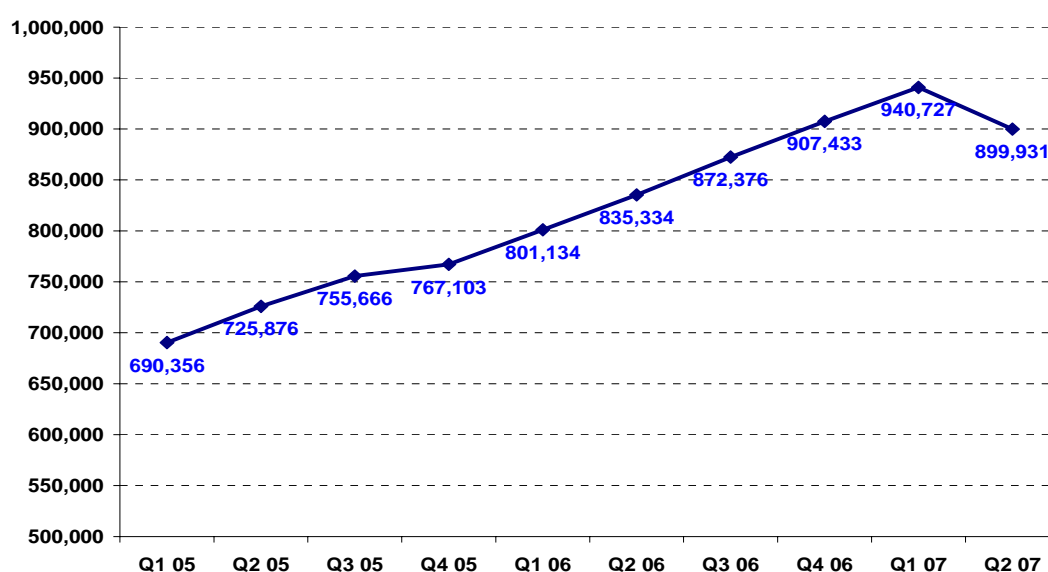
On Telecommunications services indicators in the Kingdom of Bahrain

3 Mobile services

3.1 Mobile subscribers

The number of mobile subscribers has increased steadily since 2005. At the end of June 2007 there were 899,931 mobile subscribers in the Kingdom of Bahrain.¹⁶ This includes both active prepaid and postpaid mobile subscribers.¹⁷

Figure 9: Mobile subscribers in Kingdom of Bahrain



3.1.2 Proportion of prepaid and postpaid subscribers

The mobile market in Bahrain is predominantly prepaid. As indicated in Figure 10, prepaid subscribers represented over 80% of the mobile subscribers' based as at the end of Q2 2007.

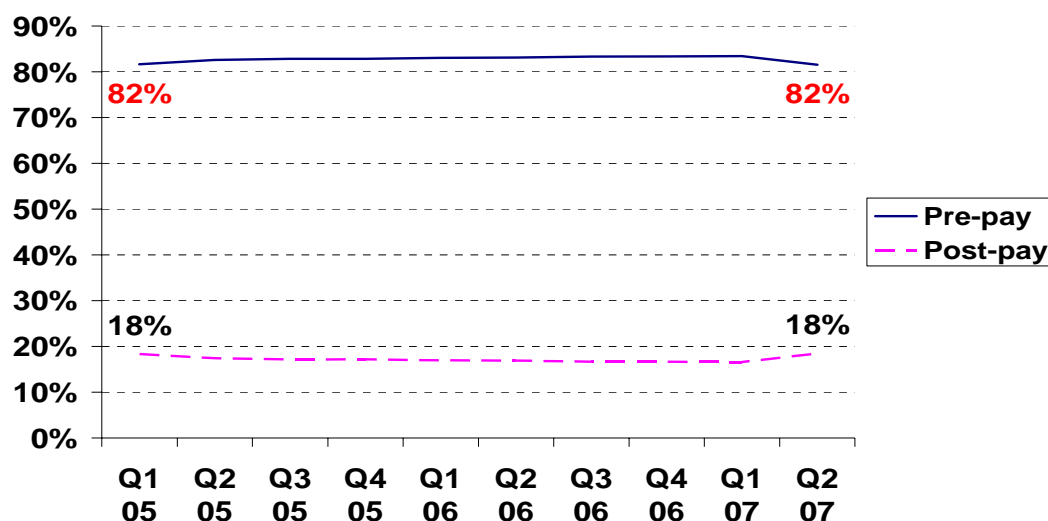
¹⁶ The drop in the number of mobile subscribers observed in the Q2 2007 is due to Zain aligning its definition of active prepaid subscribers to the ITU definition (code 271p). It resulted in a decrease in the number of Zain Bahrain's active pre-paid subscribers and therefore the total number of mobile subscribers in Kingdom of Bahrain.

¹⁷ As per the ITU definition, an active prepaid mobile subscriber is defined as a subscriber who has made a billable action (i.e. receiving or making a call or SMS) within the preceding 3 months.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Figure 10: Proportion of prepaid and postpaid subscribers



3.2 Mobile outgoing minutes

Most of the mobile traffic is originated from prepaid subscribers. Between Q1 and Q2 2007, outgoing minutes originated from prepaid mobiles and prepaid increased by respectively 7% and 10%.

Table 5: Mobile outgoing minutes

Total outgoing Minutes ¹⁸ (in million)	Q1 2007	Q2 2007	Growth Q1 07 – Q2 2007
Prepaid	258	274	6%
Postpaid	182	200	10%
Total	440	474	8%

Figure 11 and Figure 12 show the distribution of traffic for prepaid and postpaid.

¹⁸ Outgoing minutes include calls to prepaid, postpaid, national fixed and to international IDD calls.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Figure 11: Outgoing minutes from prepaid

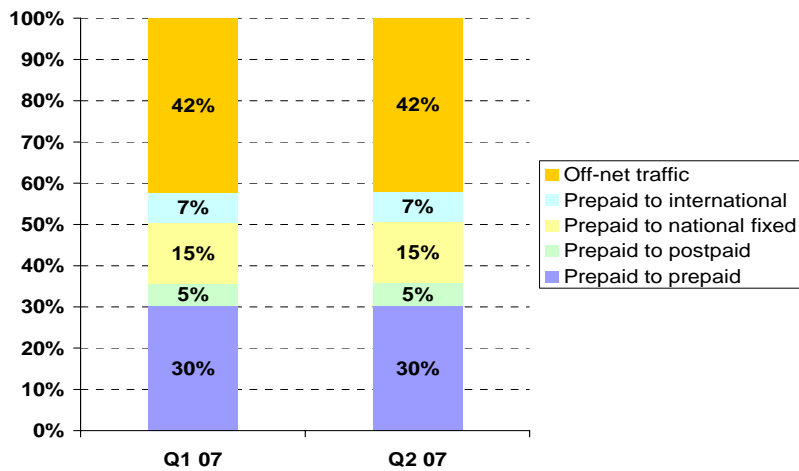
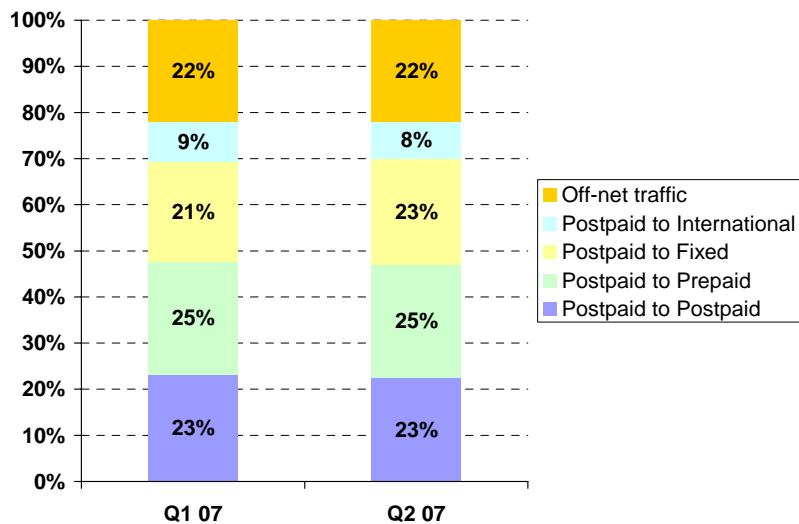


Figure 12: Outgoing minutes from postpaid



3.3 Roaming traffic

Table 1 **Table 6: Roaming traffic** shows the growth in roaming traffic for both Batelco and Zain.

Table 6: Roaming traffic

Roaming traffic	Roamers	Roaming traffic (in million)		Growth Q2 07 - Q1 07
		Q1 07	Q2 07	
Total	Outbound roaming	16.3	21.4	31%
	Inbound roaming	34.5	38.1	10%

Report

On Telecommunications services indicators in the Kingdom of Bahrain

3.4 Mobile services revenues

In Q2 2007, revenues from prepaid and postpaid were almost equal. Between Q1 2007 to Q2 2007, revenues from postpaid grew by 9% whilst revenues from prepaid increased by only 1%. Overall, mobile revenues grew by 5%.

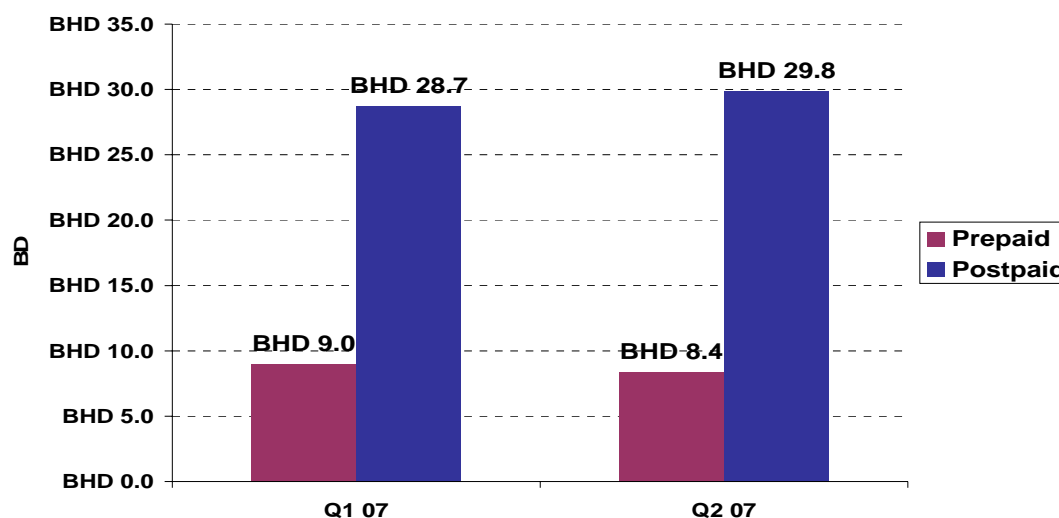
Table 7: Mobile revenues

	Q1 07	Q2 07	Growth Q2 07 - Q1 07
Postpaid	14,794,701	16,104,689	9%
Prepaid	15,922,355	16,137,994	1%
Total	30,717,056	32,242,683	5%

3.4.1 Average spent on mobile services

The average monthly spent per prepaid customer was BD8.4 in Q2 2007 and about BD9.0 for postpaid customers. This gives a weighted average of BD12.2 per month.

Figure 13: Monthly average spent per user



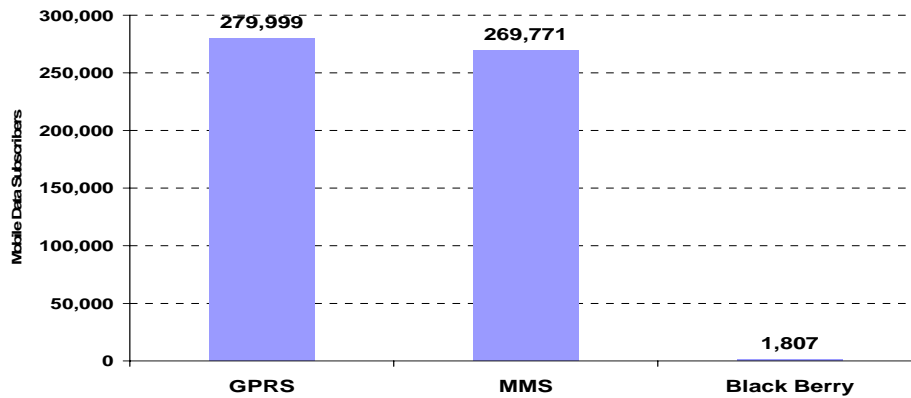
Report

On Telecommunications services indicators in the Kingdom of Bahrain

3.5 Mobile data subscribers

As can be seen from the figure below, there is a large number of subscribers to mobile data services.

Figure 14: Mobile data subscribers



Report

On Telecommunications services indicators in the Kingdom of Bahrain

4. Internet services

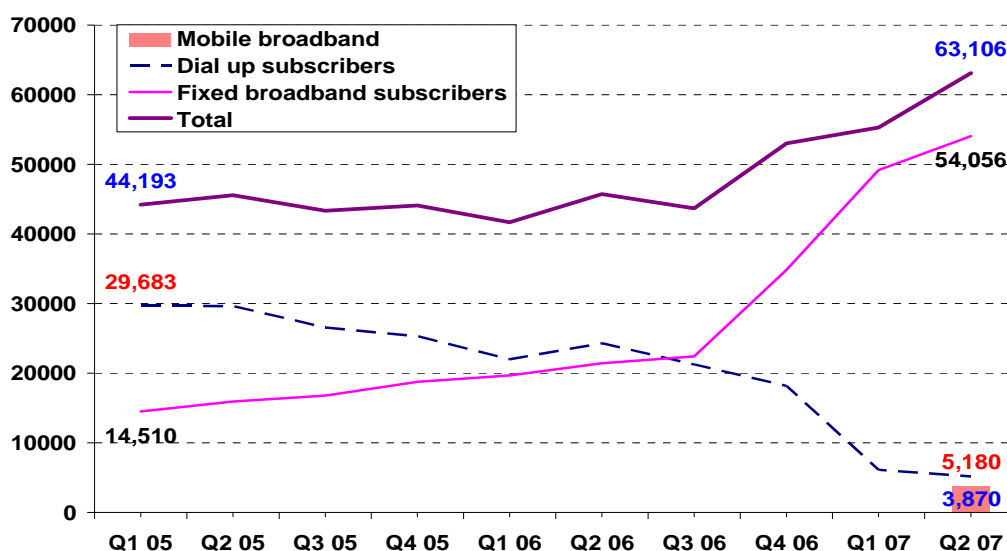
At the end of June 2007 seven operators provided internet services: Batelco, Mena, 2Connect, Kalaam, Zain, Nuetel and Orbit. They offered four types of services: dial up, wired broadband, wireless broadband and mobile broadband.

4.1 Internet subscribers

4.1.1 Residential subscribers

At the end of Q2 2007 there were 63,106 residential subscribers, of which 5,180 were dial up subscribers, 54,056 were fixed broadband subscribers and 3,870 were mobile broadband subscribers. The growth of residential internet subscribers has accelerated since Q3 2006 (see Figure 15). The drop of dial up subscribers is more than compensated by the rapid growth of fixed broadband subscribers.

Figure 15: Residential fixed internet subscribers



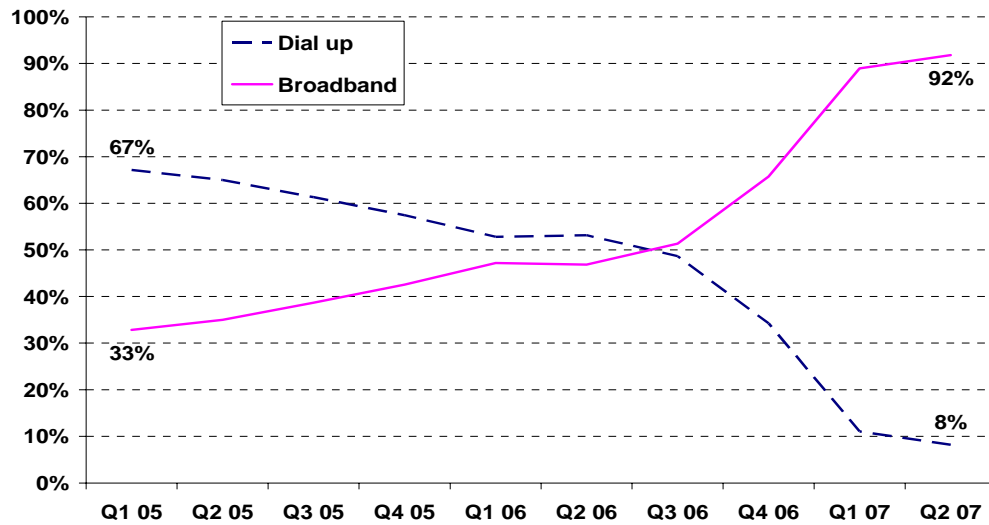
4.1.1.1 Proportion of residential Broadband and Dial up subscribers

The cross-over between broadband and dial-up subscribers occurred in Q3 2006. By the end of Q2 2007, more than 90% of internet subscribers were broadband subscribers (Figure 16).

Report

On Telecommunications services indicators in the Kingdom of Bahrain

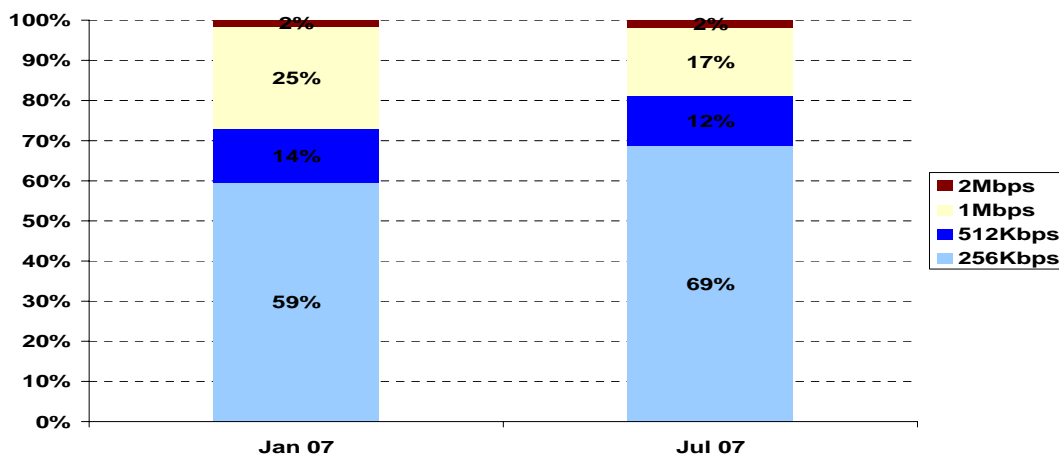
Figure 16: Proportion of residential Broadband and Dial up subscribers



4.1.1.2 Proportion of residential broadband subscribers by access speed

Most of broadband subscribers are on low speed package. As can be seen from Figure 17 about 70% of all residential broadband subscribers are on packages which have a maximum speed 256 Kbps.

Figure 17: Proportion of residential broadband subscribers by access speed



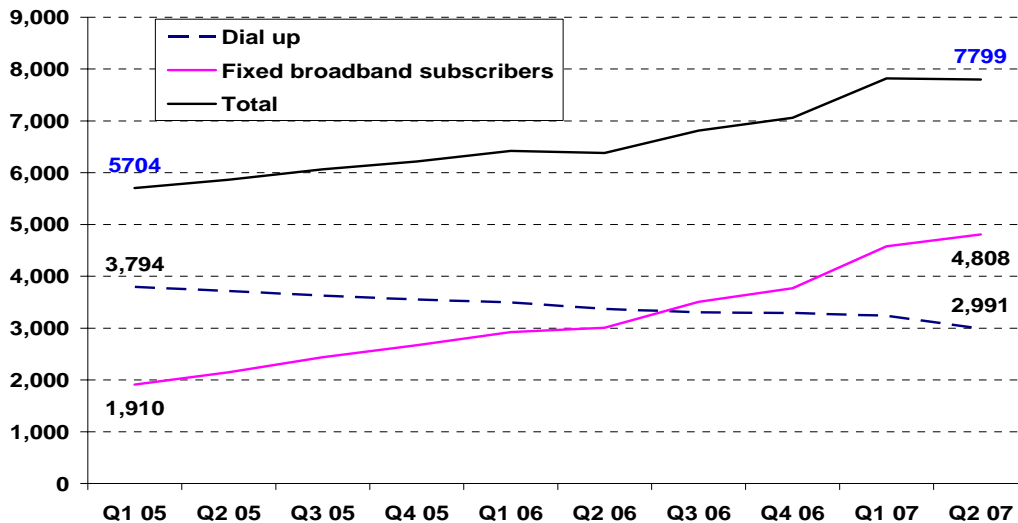
Report

On Telecommunications services indicators in the Kingdom of Bahrain

4.1.2 Business subscribers

At the end of Q2 2007 there were 7,799 business subscribers, of which 2,991 were on dial up and 4,808 on fixed broadband.

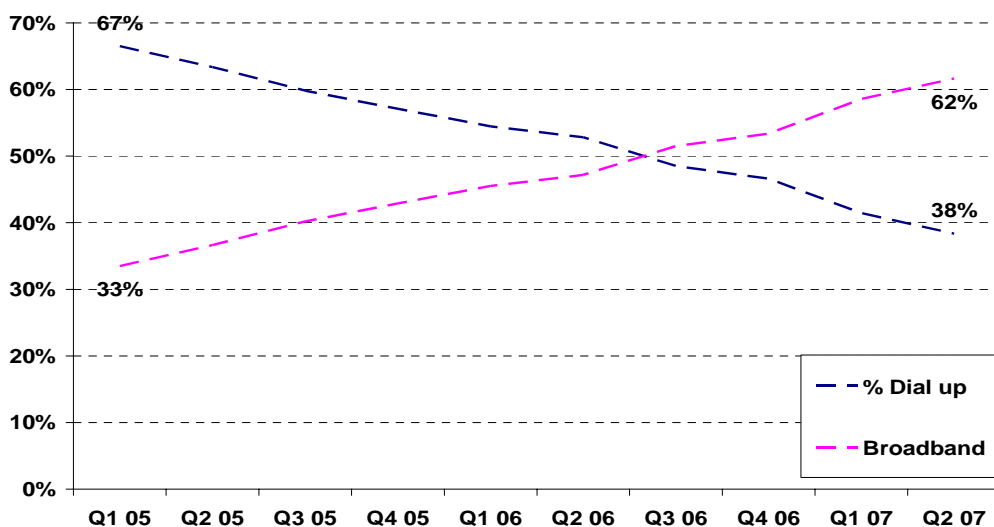
Figure 18: Business internet subscribers



4.1.2.1 Proportion of business Broadband and Dial up subscribers

The proportion of business broadband subscribers increased from 59% in Q1 2007 to 62% in Q2 2007 whilst the proportion of business dial-up providers fell slightly over the same period.

Figure 19: Proportion of business Broadband and Dial up subscribers



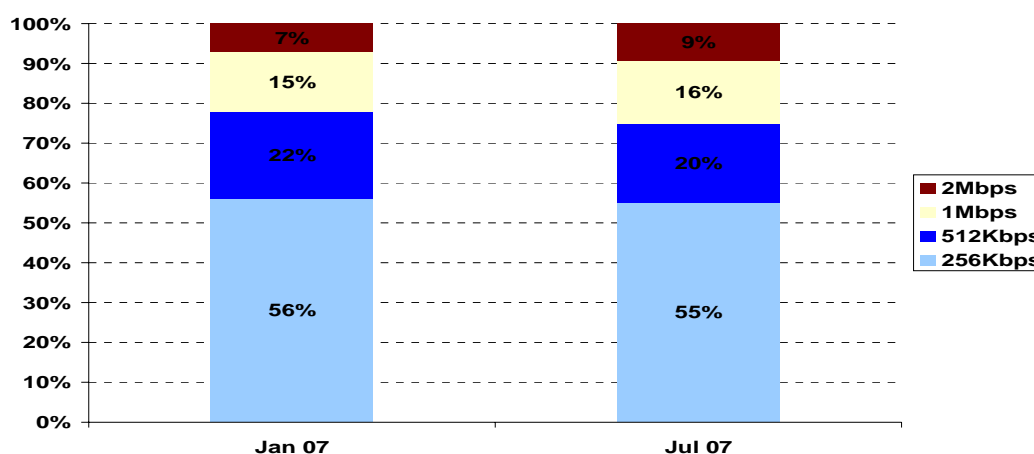
Report

On Telecommunications services indicators in the Kingdom of Bahrain

4.1.2.2 Proportion of business Broadband subscribers by access speed

The majority of business broadband subscribers are on entry level broadband packages, i.e. packages which have a maximum speed of 256 Kbps.

Figure 20: Proportion of business Broadband subscribers by access speed



4.2 Internet revenue

Total internet revenues increased by 6% between Q1 2007 and Q2 2007 and by about 55% between Q2 07 and Q2 06.

Table 8: Internet revenues

Revenues (in million)	Q2 06	Q1 07	Q2 07
Internet revenues	4	5.9	6.2

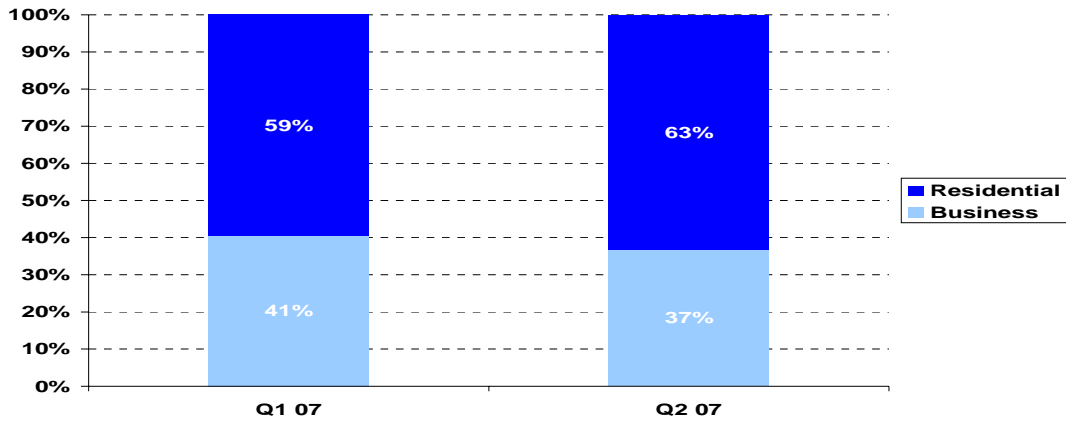
4.2.1 Proportion of business and residential internet revenues

Residential users generate over 60% of Internet revenues. The proportion of revenue generated by business users declined by 4 percentage points between Q1 and Q2 2007.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Figure 21: Proportion of business and residential internet revenues



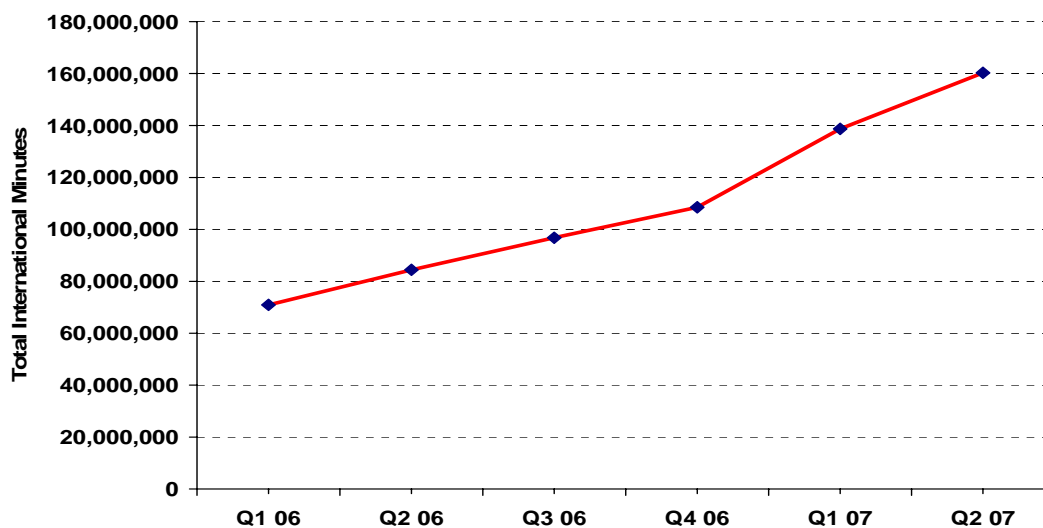
5 International calls services

The international calls market includes international calls originated from international direct dial (fixed lines and mobile (IDD)), Carrier Pre-Selection (CPS) services, and pre-pay calling cards (PPCC). There are currently 15 operators providing international calling services using one or more of these methods.

5.1 International outgoing minutes

International traffic is still growing rapidly. Between Q2 2006 and Q2 2007, it grew by 84%.

Figure 22: Growth in the international calls traffic



Traffic to South Asian countries is the fastest growing (+166%), followed by traffic to Zone 3 countries and to GCC countries.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

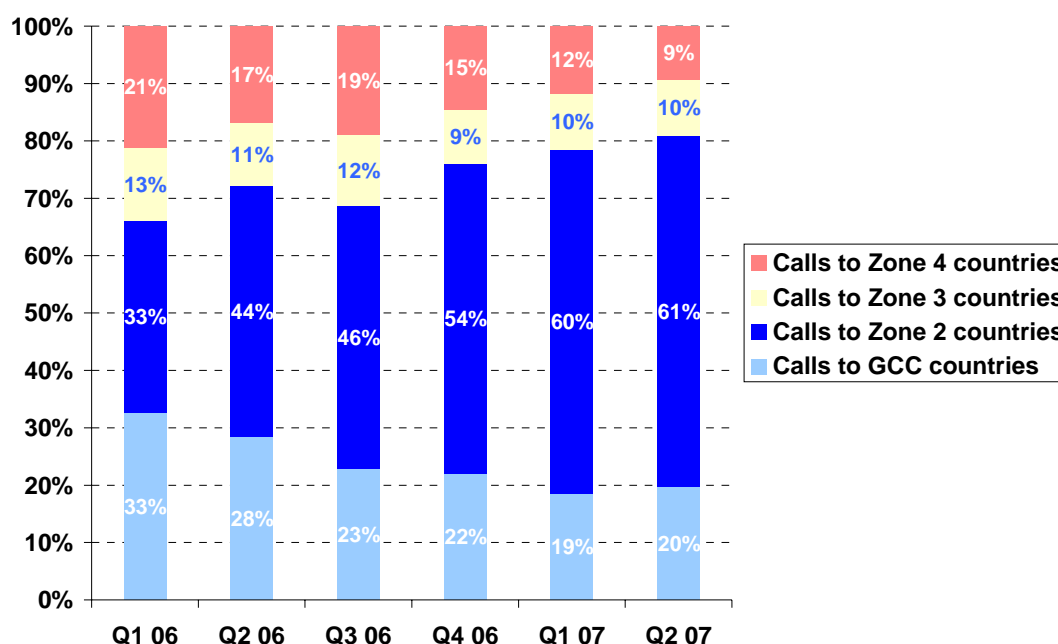
Table 9: International outgoing minutes

Destination ¹⁹	Q2 06	Q1 07	Q2 07	Quarterly Growth Q2 07-Q1 07	Year-on-Year growth Q2 07 -Q2 06
	Minutes (in millions)				
Calls to GCC countries	24	26	32	23%	32%
Calls to Zone 2 countries	37	83	98	18%	166%
Calls to Zone 3 countries	9	14	16	13%	69%
Calls to Zone 4 countries	14	16	15	-8%	5%
Total	84	139	161	16%	90%

5.1.1 International calls traffic distribution

More than 60% of international calls are made to South Asian countries (Zone 2). Calls to Zone 3 and Zone 4 represent about 9% each whilst calls to GCC countries represent about 20% of the total volume.

Figure 23: International calls traffic distribution



¹⁹ GCC countries (Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates)

Zone 2: Calls to South Asian countries (Bangladesh, India, Pakistan, the Philippines and Sri Lanka).

Zone 3: Calls to other major destinations (Australia, Canada, France, Germany, Greece, Italy, Iran, New Zealand, Thailand, UK, USA and Yemen).

Zone 4: Calls to all other international destinations.

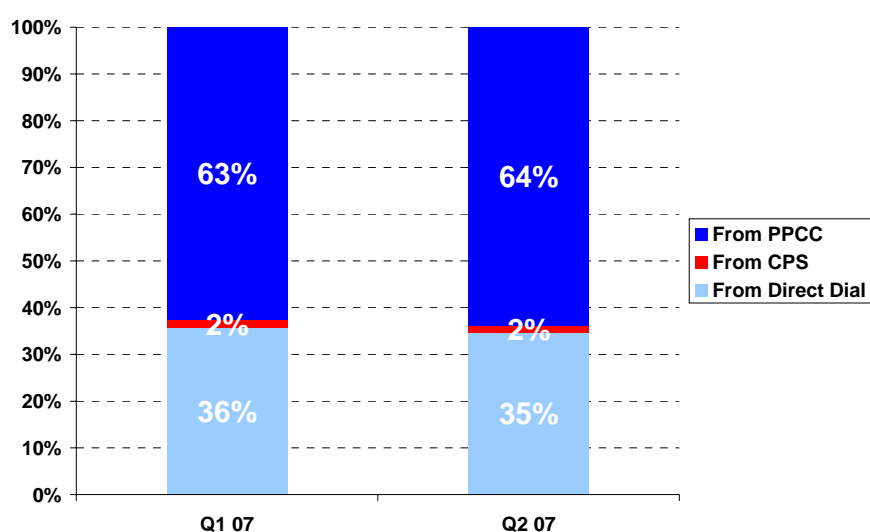
Report

On Telecommunications services indicators in the Kingdom of Bahrain

5.1.2 Distribution of international calls by access type

Figure 24 shows that about 64% of the international calls minutes were originated using international PPCCs followed by direct dial from fixed and mobile (35%).

Figure 24: Distribution of international calls by access type



5.2 International calls revenue

Table 10 shows the quarterly and year-on-year growth in international call revenues between Q2 2006 and Q2 2007. Although calls to GCC represent 20% of total traffic, they represent in excess of 30% of revenues.

Table 10: International calls revenue

Total revenue (in millions)	Q2 06	Q1 07	Q2 07	Quarterly Growth Q2 07 - Q1 07	Year-on-Year Growth Q2 07 - Q2 06
Calls to GCC countries	3.9	4.6	5.2	13%	33%
Calls to Zone 2 countries	4.9	5.1	6.7	31%	37%
Calls to Zone 3 countries	1.8	2.2	2	-9%	11%
Calls to Zone 4 countries	3.3	3	2.1	-30%	-36%
Total	13.9	14.9	16	7%	15%

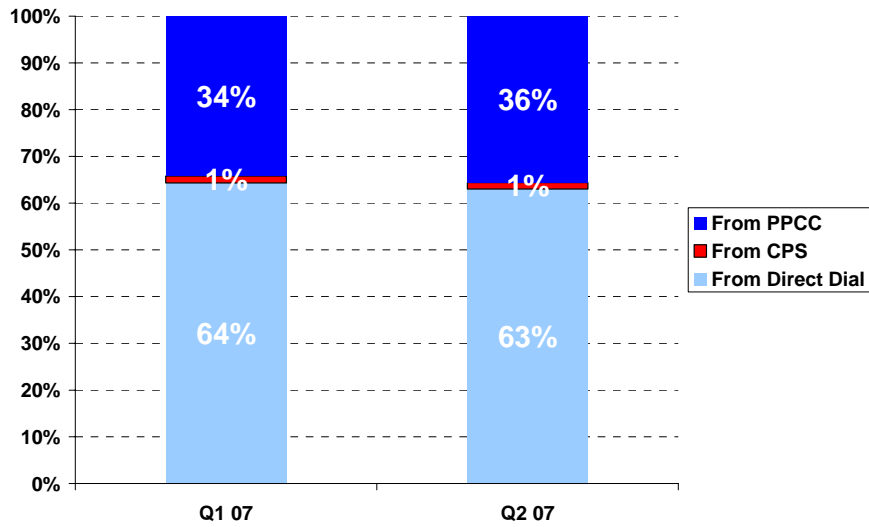
Report

On Telecommunications services indicators in the Kingdom of Bahrain

5.2.1 Distribution of revenues from international calls by access type

Figure 25 shows that revenue produced from direct dial represent about 60% of total international revenue while revenues produced from prepaid calling cards represent about 39%.

Figure 25: distribution of revenues from international calls by access type



Report

On Telecommunications services indicators in the Kingdom of Bahrain

6 Leased lines and data services

This section of the report summarizes the domestic and international leased line markets in Bahrain as well as the other data services.

6.1 Domestic leased lines

6.1.1 Number of domestic leased lines

There are three operators that offer domestic leased lines services: Batelco, 2Connect and Kalaam. 2Connect and Kalaam provide leased lines services based on Batelco's wholesale products. Table 11 shows the number of domestic circuits rented in Q1 and Q2 of 2007.

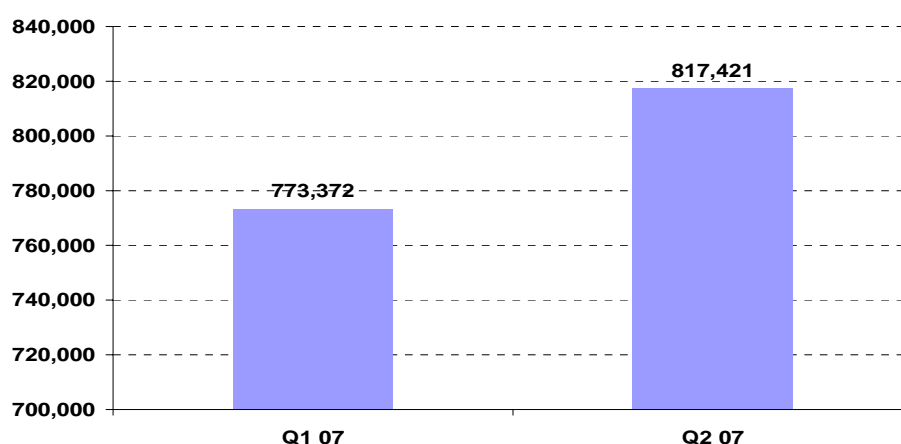
Table 11: Number of domestic leased lines

Leased line speed	Q1 07	Q2 07
64 kbps and less	509	490
128 kbps to 768 kbps	355	379
1024 kbps and above	154	167

6.1.2 Domestic leased lines revenues

Between Q1 and Q2 2007, domestic leased line revenues grew by 6%.

Figure 26: Domestic leased lines revenues



Report

On Telecommunications services indicators in the Kingdom of Bahrain

6.2 International leased lines

International leased line half circuits are currently offered to three international zones:

- *Zone 1: GCC countries*
- *Zone 2: rest of the Middle East, Turkey, Cyprus, Greece, India, Pakistan, South Africa; and*
- *Zone 3: Continental USA, Canada, Europe, South East Asia.*

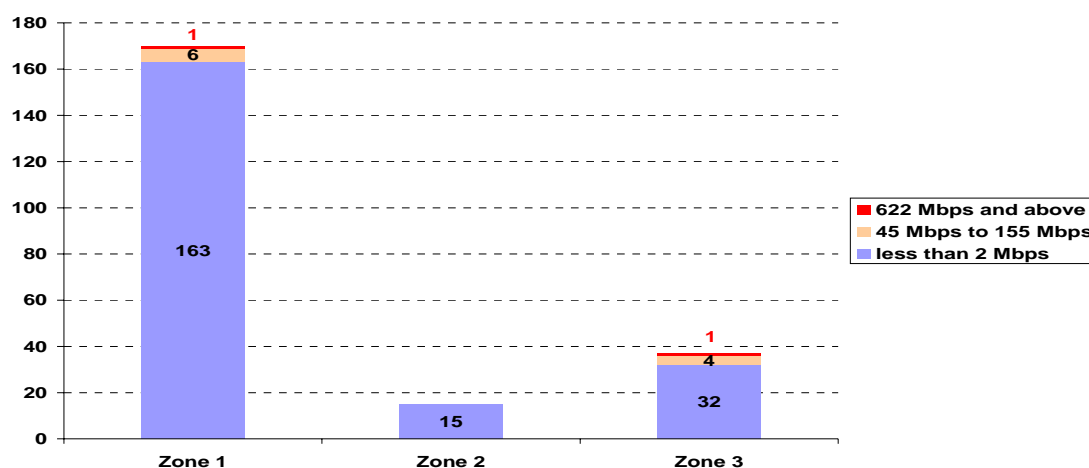
In addition to Batelco, there are two other licensed operators that offer international leased lines services based Batelco's wholesale products:

- Etisalcom, which provides international private leased line 45 Mbps²⁰; and
- 2Connect, which provides an MPLS international leased circuit services DS3²¹.

6.2.1 Number of international leased line circuits

As can be seen from the Figure below, the bulk of circuits are to Zone 1 countries.

Figure 27: International leased line circuits in Q2 2007



6.2.2 International leased line revenues

Figure 30 indicates that international leased line revenues increased by 2.6% between Q1 2007 and Q2 2007.

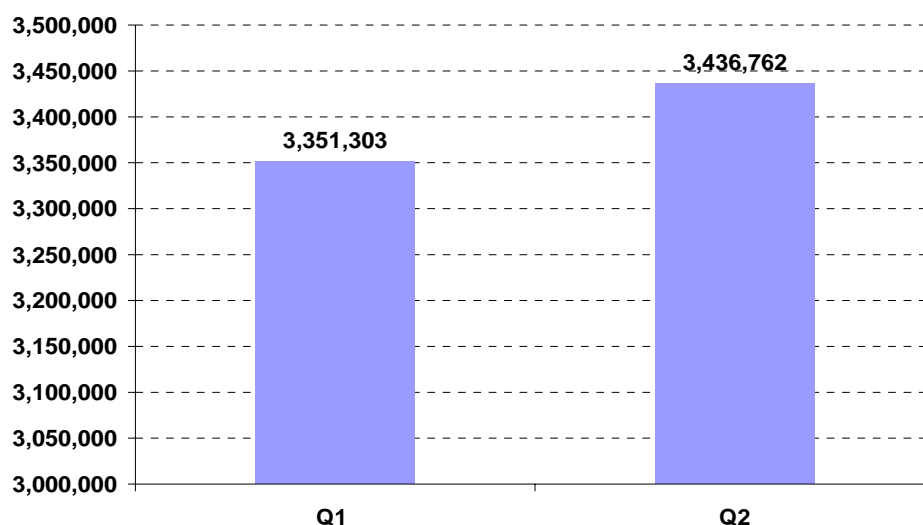
Figure 28: International leased lines revenues

²⁰ Source: http://www.etisalcom.com/business_MPLS.htm

²¹ Source: <http://www.2connectbahrain.com/mpls.html>

Report

On Telecommunications services indicators in the Kingdom of Bahrain



6.3 Data services

Table 14 shows the number of circuits for other data services in Q1 and Q2 2007.

Table 12: Number of circuits for other data services

Data services	Q1 07	Q2 07
LAN Connect service	529	530
MPLS based IP-VPN	174	199
Global Managed Private Line	6	6
Global frame relay	20	13
Global ATM	5	5
Global IP-VPN	7	9
Leased line over Ethernet	7	6
ADSL over Ethernet	5	5
Total	753	773

Other data services providers in the market include:

- BT, which provides MPLS based IP-VPN
- 2Connect, which provides Global IP-VPN; and
- Lightspeed provides Leased line over Ethernet and ADSL over Ethernet.

6.3.1 Data services revenues

Figure 31 indicates that data services revenues increased by 11% between Q1 2007 and Q2 2007.

Report

On Telecommunications services indicators in the Kingdom of Bahrain

Figure 29: Data services revenues

