

# Telecommunications markets indicators in the Kingdom of Bahrain

January 2012

All indicators up to Q4 2010 and some indicators up to Q4 2011



هيئة تنظيم الاتصالات  
Telecommunications Regulatory Authority



# Contents

	Page
Introduction	3
Disclaimer	4
TRA highlights during 2010 & 2011	5
Key market trends and observations in 2011	7
Services offered by active operators	10
Main telecommunications indicators	11
Revenues in the telecommunications sector	12
Employment in the telecommunications sector	13
Fixed telephony services	14
Mobile services	15
International calls services	24
Internet services	34
Leased lines and data services	39
Retail prices time series for baskets of services	41
Consumer satisfaction	44
Benchmarking of penetration rates	45
List of Acronyms	46
Definitions of some key indicators	47



# Introduction

The collection, analysis and dissemination of accurate and timely market information significantly enhances the design of effective, proportionate and efficient market regulation.

The publication of this report is in accordance with Article 54 of the Telecommunications Law of Bahrain.

Unless specified, the analysis presented in this report is based on data collected from licensed operators by TRA. TRA would like to thank licensed operators for the information provided and looks forward to their continued collaboration in the future.

When publishing such information, TRA must have regard to the need to exclude any information which relates to the private affairs of a Person<sup>1</sup> and information which, if published, would or might in the opinion of 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 Article 54, including not publishing information which may be considered confidential information<sup>2</sup>.

This is the sixth Telecommunications Markets Indicators Report and it covers large range of telecommunications services indicators up to Q4 2010 such as the number of subscribers, penetration rates, calls usage and telecommunications and revenues and key indicators such as number of subscribers for the period up to Q4 2011.

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

<sup>2</sup> See 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](http://www.tra.org.bh/en/pdf/Confidentiality_Guidelines_Final.pdf)



# Disclaimer

- ▶ TRA does not make any representations or warranties, either express or implied, that:
  - the information is free from inaccuracies, errors or omissions;
  - the information is exhaustive;
  - the information is of merchantable quality and fitness for a particular purpose.
  
- ▶ TRA, including its officers, board members, employees, agents and contractors, is not liable for:
  - any inaccuracy, error or omission in the information contained in this document; nor
  - any loss, damage, cost or expense whether direct, indirect, consequential or special, incurred by, or arising by reason of, any person using or relying on the information and whether caused by reason of any inaccuracy, error, omission or misrepresentation in the information or otherwise.



# TRA highlights during 2011

## ▶ **Orders**

During 2011, TRA issued the following orders:

- ▶ Order No. 1 of 2011: TRA setting the fair, reasonable and non-discriminatory charges of Batelco's Reference Offer (25 January 2011).
- ▶ Local Loop Unbundling order: To Batelco setting the terms and conditions and the charges for Batelco's LLU and related additional services (05 May 2011).
- ▶ Emergency order No. 1 of 2011: To Moving Gulf Telecom W.L.L. to Cease and Desist All Telecommunications Services (21 April 2011).
- ▶ Emergency order no. 3 2011: Order for Viva Bahrain B.S.C closed to comply with regulation 2 of 2008 on the requirement to register details of prepaid mobile telecommunications services subscribers registration of prepaid telecommunications services (10 July 2011).

## ▶ **Determinations**

During 2011, TRA issued the following determinations and decisions:

- ▶ Determination to Change the Audit Standard Applicable to Batelco's Regulatory Accounts (21 July 2011).

## ▶ **Regulations**

- ▶ TRA issued Regulation on Commercial Bulk Messages (24 February 2011).

## ▶ **Consultations**

During 2011, TRA consulted on the following:

- ▶ 2<sup>nd</sup> Consultation on amending regulation 1 of 2008 (November 2011).
- ▶ Draft Order On Batelco's Reference Offer (November 2011).
- ▶ Individual Global Mobile Personal Communications by Satellite (September 2011).
- ▶ Bottom-up Cost Models (May 2011).
- ▶ Change of Audit Scope Applicable to Batelco's Regulatory Accounts (March 2011)



# TRA highlights during 2010

## ▶ Orders

During 2010, TRA issued the following orders:

- ▶ Emergency Order no 1: To all licensees holding an Individual Licence for National Fixed Services, Individual Licence for International Telecommunications Services and Individual Licence for Mobile Telecommunications Services (10 May 2010).
- ▶ Emergency Order no 2: Against Batelco for the unauthorized commencement of unapproved retail and wholesale broadband tariffs (8 June 2010).
- ▶ Emergency Order no 3: Against Batelco for retail tariffs of international calls to India and Bangladesh (29 July 2010).
- ▶ Emergency Order no 4: To all Internet Service Providers to block Illegal Voice Services (30 September 2010).
- ▶ Emergency Order no 5: To all Internet Service Providers to block call back service (30 September 2010).

## ▶ Determinations

During 2010, TRA issued the following determinations and decisions:

- ▶ Dominance determination for mobile termination services (1 February 2010).
- ▶ Determination repealing telecommunications market definition and market power methodologies (18 February 2010).
- ▶ Decision on Amending ISP and VAS Licenses (18 July 2010).
- ▶ Determination related to the terms and conditions of Batelco's International Falcon Connection Service (29 July 2010).

## ▶ Regulations

- ▶ TRA issued a Retail Tariff Notification Regulation (21 February 2010).
- ▶ TRA issued Number Portability Regulation (27 April 2010).

## ▶ Consultations

During 2010, TRA consulted on the following:

- ▶ TRA Work Plan 2010 – 2012 (March 2010).
- ▶ Number Portability Specifications Consultation (January 2010).
- ▶ Regulation on Commercial Bulk Messages (September 2010).



# Key market trends and observations - 1

## ▶ Overall

- ▶ BD360 million annual gross turnover of telecommunications sector in 2010.
- ▶ Mobile services revenues represents ~44% of retail services revenues followed by international calls (~23%), leased lines (15%), internet (~13%) and fixed (~5%).
- ▶ 6.5 % growth in revenues between 2009 and 2010 (against 11.6% between 2008 and 2009) .
- ▶ Telecom revenues represented 4.4% of GDP in 2010.
- ▶ In 2010 approximately 2,600 employees working directly in the telecommunications sector.
- ▶ 43% growth in the number of employees since liberalisation in 2003.
- ▶ Compared to 2007, overall consumer satisfaction increased by between 15% and 33% according to a survey conducted by Nielson on behalf of TRA in 2011.

## ▶ Fixed line service

- ▶ By the end of 2011, there were about 242,000 fixed lines in Bahrain.
- ▶ 60% of fixed lines are for residential use.
- ▶ In 2011 fixed line penetration in Bahrain was 19%.
- ▶ The number of fixed PSTN lines declined by just over 7% between 2010 and 2011.
- ▶ Fixed telephony domestic traffic decreased by 10% between 2009 and 2010 due to the increasing use of mobile.
- ▶ On average, a fixed subscribers made 327 minutes of national calls per month (613 for business and 150 for residential users).
- ▶ Monthly ARPU decreased from BD 6.3 to 5.2 per month.



# Key market trends and observations - 2

- ▶ **Mobile service**
  - ▶ At the end of 2011, there were about 1.7 million mobile subscribers in Bahrain, representing a mobile penetration rate of 133%.
  - ▶ Prepaid subscribers represented 82% of mobile subscribers at the end of 2011.
  - ▶ 3.7 billion minutes of domestic calls generated from mobiles in 2010, an increase of 86% between 2009 and 2010 due to Viva's promotions.
  - ▶ 201 minutes (excluding PPCC traffic) per month and per mobile.
  - ▶ About 1 billion SMS generated from mobile. The number of SMS grew by 175% from 2009 to 2010.
  - ▶ ARPU dropped from BD 10.9 to BD9.6 per month. ARPU for prepaid was BD5.7 per month and BD27.9 per month for postpaid (excluding PPCC traffic).
  - ▶ At the end of 2010, there were 94,000 BlackBerry subscribers, representing 6% of mobile subscribers.
  
- ▶ **International calls**
  - ▶ In 2010 about 2 billion minutes generated from international calls. Between 2009 and 2010, international traffic grew by 35% despite increasing use of (free) Internet calls.
  - ▶ Average revenue per minute continued to drop in 2010. It was BD 0.036 in 2010 compared to BD 0.226 in 2005.
  - ▶ International outgoing minutes originated on mobile represents 88% of total international outgoing minutes in 2010.
  - ▶ During 2010, 80% of total international calls (minutes) were made to South Asian countries, while only 54% of international revenues were generated from calls to South Asian countries.
  - ▶ Proportion of PPCC mobile originated international traffic dropped from 63% to 40% in 2010.



# Key market trends and observations - 3

- ▶ **Internet service**
  - ▶ At the end of 2011, there were approximately 290,000 internet subscribers in Bahrain, all of whom were broadband subscribers.
  - ▶ In 2011 broadband penetration in Bahrain was 23%.
  - ▶ The number of broadband subscribers with broadband speed in excess of 2Mbps has doubled between 2009 and 2010.
  - ▶ Mobile broadband represents 44% of the broadband customers base in 2011.
  - ▶ Dial up service has been phased out in 2010.
  
- ▶ **Operators**
  - ▶ VIVA became the 3<sup>rd</sup> mobile network operator in Bahrain, launching its services in March 2010.
  
- ▶ **Number portability**
  - ▶ Since the introduction of number portability in mid July 2011 about 22 thousands numbers have been ported.



# Services offered by active operators

Operator Name	National Fixed	International Calls	Mobile	Internet	Leased line	Other data service <sup>1</sup>
2Connect	✓	✓		✓	✓	✓
Ascentech Telecom		✓				
Batelco	✓	✓	✓	✓	✓	✓
BT Solutions LTD					✓	✓
Business Communication Networks		✓				
Elephant Talk		✓				
EQUANT EGN BV					✓	✓
Etisalcom	✓	✓		✓	✓	✓
Kalaam Telecom	✓	✓		✓	✓	
Kulacom Communications S.P.C.		✓		✓		
Light Speed	✓	✓		✓	✓	
Mena Telecom	✓	✓		✓	✓	✓
Northstar		✓		✓	✓	
Nuetel Communications	✓	✓		✓	✓	
Orbit				✓		
Rawabi Telecommunications & Software	✓	✓		✓	✓	
Viacloud		✓				
VIVA		✓	✓	✓		
Zain (Bahrain)	✓	✓	✓	✓		

<sup>1</sup> For example, national frame relay service, international managed leased line services and international MPLS/IPVPN service.



# Main telecommunications indicators

Indicator	2005	2006	2007	2008	2009	2010	2011	Compound Annual Growth Rate - CAGR 2005-2011
Population	888,824	960,425	1,039,297	1,106,509	1,178,415	1,234,571	1,271,608	
<b>Fixed line services</b>								
Number of fixed lines	193,520	194,196	203,541	220,386	237,621	227,353	242,407	4%
Fixed line penetration	22%	20%	20%	20%	20%	18%	19%	
Number of residential fixed lines	121,918	122,343	116,951	130,121	146,384	139,543	n/a	
<b>Mobile services</b>								
Prepaid subscribers	635,277	756,268	923,702	1,210,163	1,156,196	1,289,274	1,379,820	14%
Postpaid subscribers	131,826	151,165	192,277	230,619	245,778	278,471	313,830	16%
Total mobile subscribers	767,103	907,433	1,115,979	1,440,782	1,401,974	1,567,745	1,693,650	14%
Mobile penetration as a % of total population	86%	94%	107%	130%	119%	127%	133%	
<b>Internet services</b>								
Dial-up subscribers	28,867	21,466	6,425	4,508	3,480	0	0	-100%
Broadband subscribers	21,432	38,628	73,563	109,994	158,335	204,197	290,371	54%
Total Internet subscribers	50,299	60,094	79,988	114,502	161,815	204,197	290,371	34%
Internet penetration	6%	6%	8%	10%	14%	17%	23%	
Broadband penetration	2%	4%	7%	10%	13%	17%	23%	
Number of residential fixed broadband subscribers	18,764	34,858	62,699	85,419	130,721	144,929	n/a	
<b>Telecommunications revenues (BD in million)</b>	235	253	285	303	338	360	n/a	
<b>Number of employees in the telecommunications sector</b>	2,216	1,942	2,381	2,469	2,504	2,584	n/a	

## Notes:

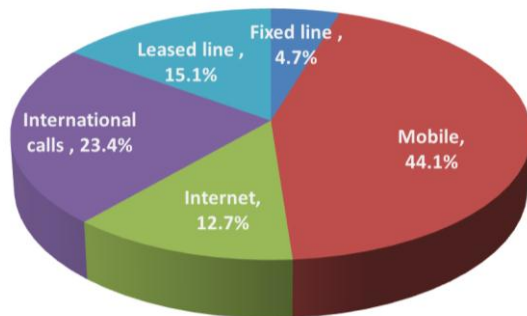
- 1- The population head count is sourced from the Central Informatics Organization. 2011 population is estimated based on 2010 population +3%.
- 2- The number of subscribers refers to the end of the period.
- 3- Number of broadband subscribers include mobile broadband subscribers and wireless broadband subscribers.
- 4-Note: The drop in the number of mobile subscribers in 2009 is due to the prepaid SIM card registration campaign and compliance by Batelco with the ITU active prepaid subscribers' definition.



# Revenues in the telecommunications sector

- 6.5 % growth in revenues between 2009 and 2010.
- 9% compound annual growth rate between 2005 and 2010.
- Mobile services revenues represent the majority of the telecommunications retail services revenue.
- Telecommunications revenues contribute 4.4% To GDP.

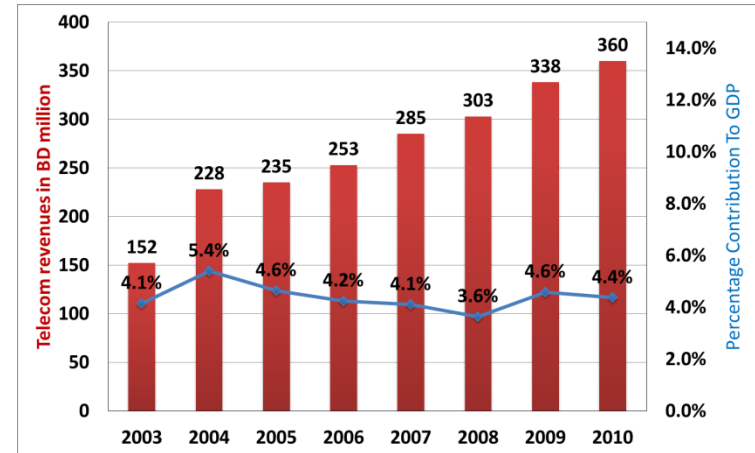
## Contribution of retail services revenue in the total retail services revenue in 2010



Source: TRA analysis

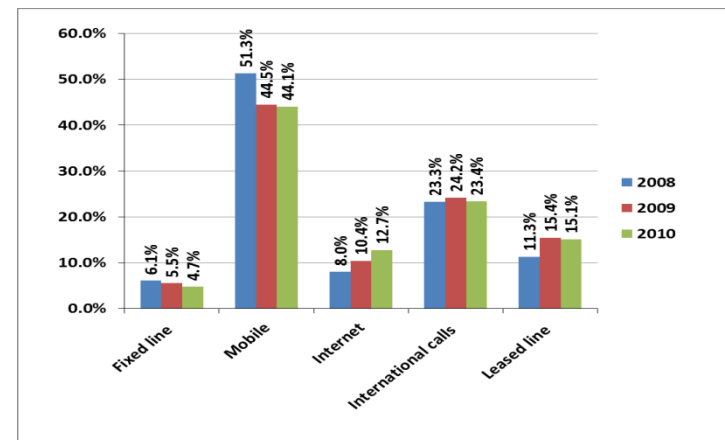
Note: Mobile and fixed services revenues do not include international calls revenue.

## Growth in telecommunications sector revenue (2003 – 2010)



Source: CIO, Annual gross turnover of licensees and TRA analysis.

## Trend of contribution of retail services revenue in the total retail services revenue 2008-2010



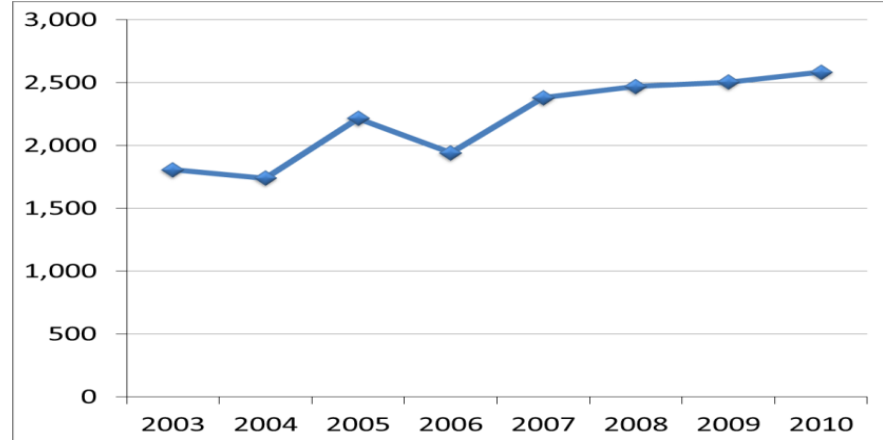
Source: TRA analysis



# Employment in the telecommunications sector

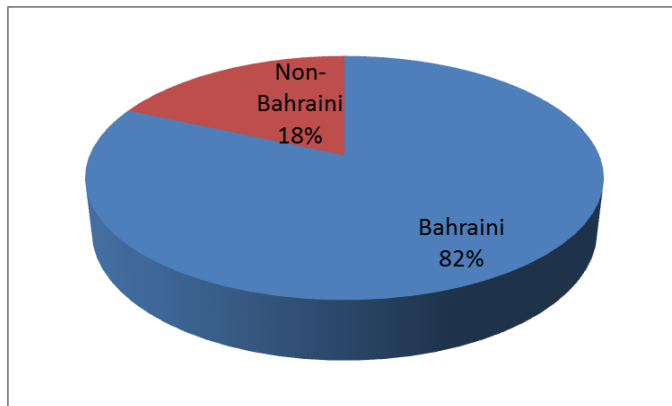
- About 2,600 employees are working in the telecommunication sector.
- 43% growth in the number of employees since liberalisation.
- The sector achieves a high degree of Bahrainisation (82%).
- 27% of employees are female.

**Growth in the number of employees in the telecommunication sector**



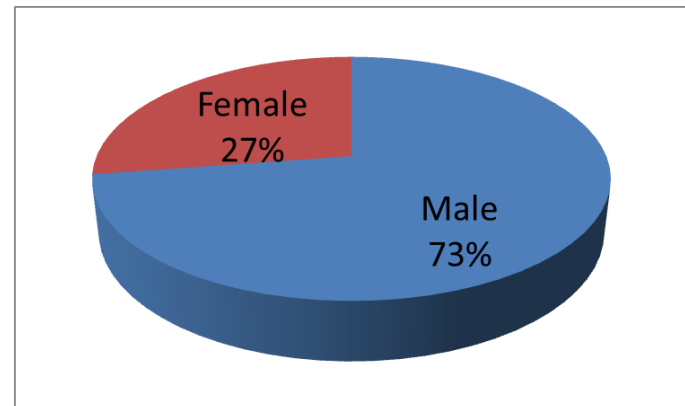
Source: TRA analysis

**Distribution of employees by nationality**



Source: TRA analysis

**Distribution of employees by gender**



Source: TRA analysis



# Fixed telephony services

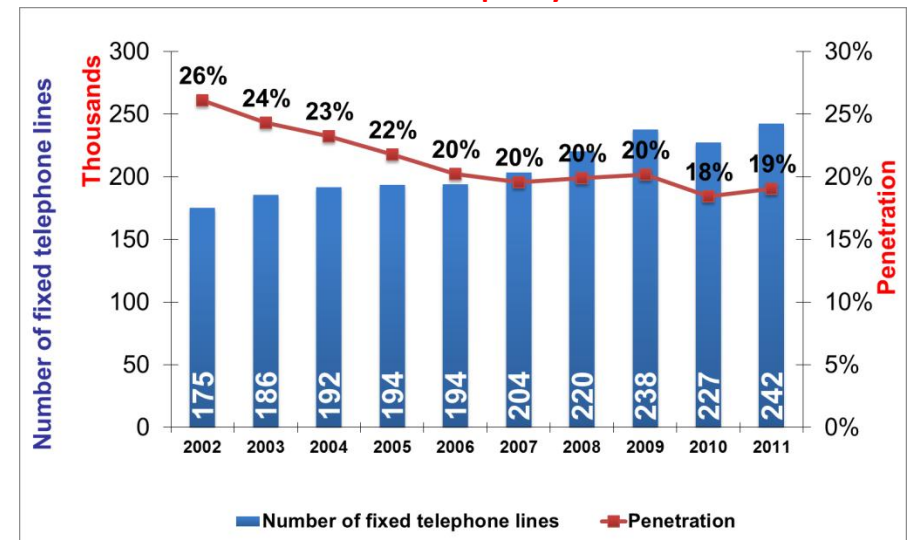
## Number of fixed telephony lines

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fixed PSTN	175,446	185,756	191,553	193,520	194,196	202,469	206,301	202,444	187,838	174,441
Fixed Wireless						1,072	14,085	35,177	39,515	67,966
<b>Total</b>	<b>175,446</b>	<b>185,756</b>	<b>191,553</b>	<b>193,520</b>	<b>194,196</b>	<b>203,541</b>	<b>220,386</b>	<b>237,621</b>	<b>227,353</b>	<b>242,407</b>

Source: TRA analysis

- By the end of 2011, there were about 242,000 fixed lines.
- Fixed wireless service as a proportion of total fixed lines has increased from less than 1% in 2007 to about 28% in 2011 due to the offers of Menatelecom and Zain.

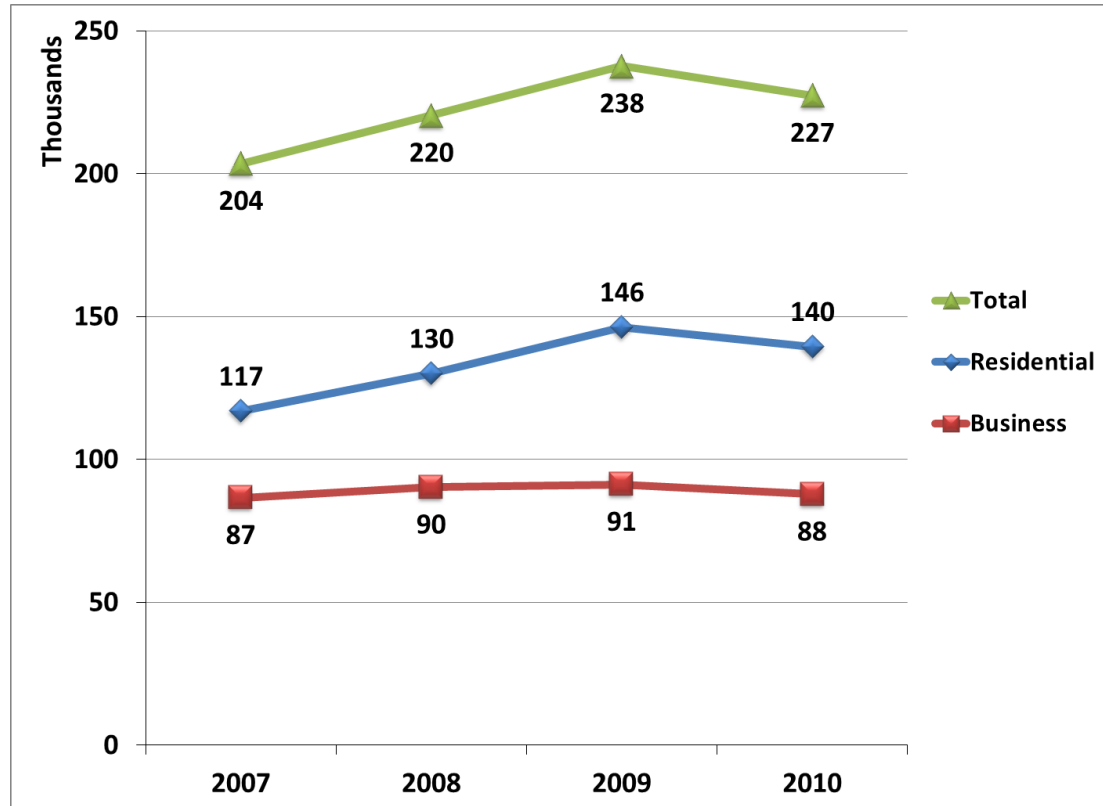
## Growth in the number of fixed telephony lines



Source: TRA analysis



# Number of fixed telephony lines by customer type



Source: TRA analysis



# Fixed line outgoing minutes

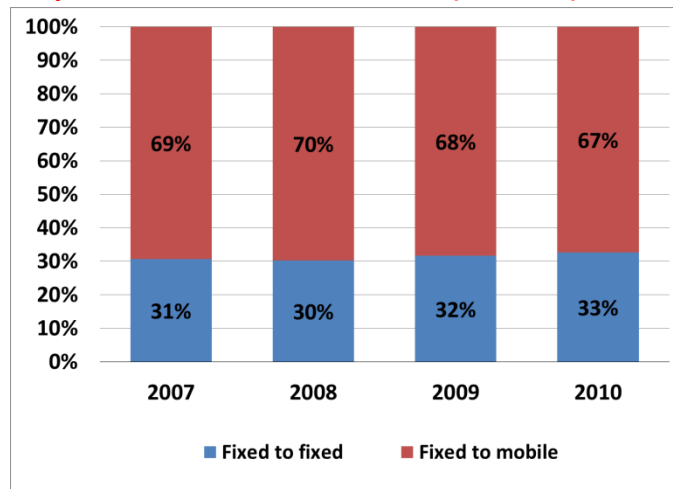
- Fixed telephony traffic decreased by 10% between 2009 and 2010 due to substitution towards mobile.
- About 70% of national traffic originated from fixed lines are fixed-to-mobile calls.
- 25% reduction in average national monthly minute per residential line from 2009 to 2010.

## Fixed lines national outgoing minutes (volume)

Yearly national outgoing minutes In million	2007	2008	2009	2010	Growth 2009 - 2010
Fixed to fixed	299	310	319	297	-7%
Fixed to mobile	674	712	690	612	-11%
<b>Total</b>	<b>973</b>	<b>1,022</b>	<b>1,009</b>	<b>909</b>	<b>-10%</b>

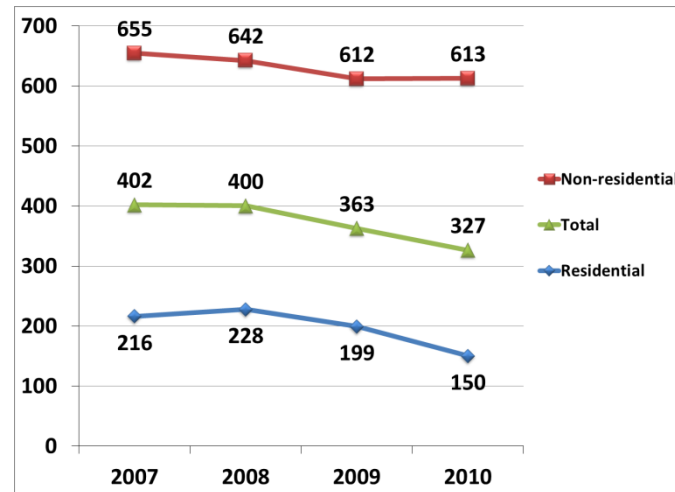
Source: TRA analysis

## Proportion of fixed national calls (Minutes)



Source: TRA analysis

## Average monthly national outgoing minutes per line



Source: TRA analysis



# Fixed line service revenue

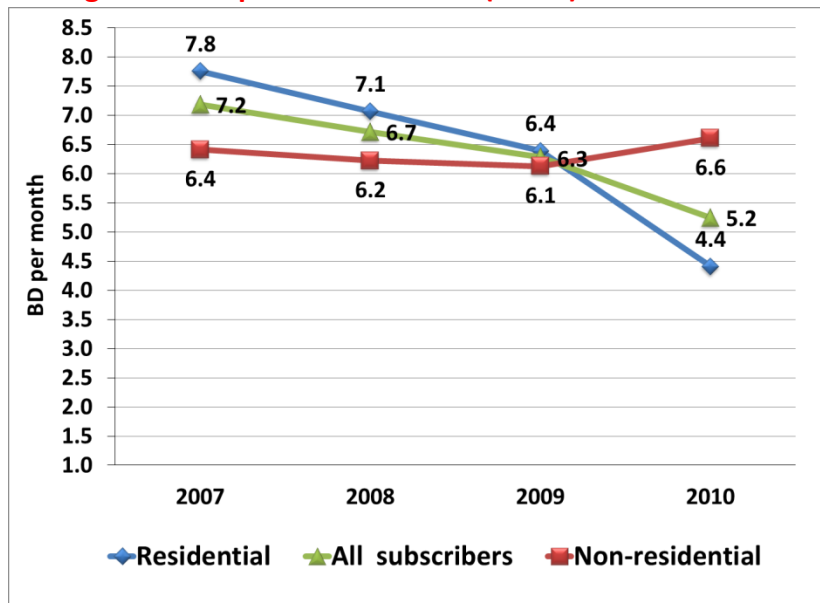
## Fixed line revenue

BD in million	2007	2008	2009	2010	Growth 2009-2010
Residential	10.8	10.5	10.7	7.6	-29%
Non-residential	6.6	6.6	6.8	7.0	4%
Total	17.4	17.1	17.5	14.6	-17%

Source: TRA analysis

Note: Revenue include national calls revenue, monthly rental and subscription fees.

## Average revenue per fixed line user (ARPU)



Source: TRA analysis

Note: Revenue includes national calls revenue, monthly rental and subscription fees.

Average fixed line revenue per residential user dropped by 30% between 2009 and 2010, reflecting the 25% reduction in average monthly national minutes.

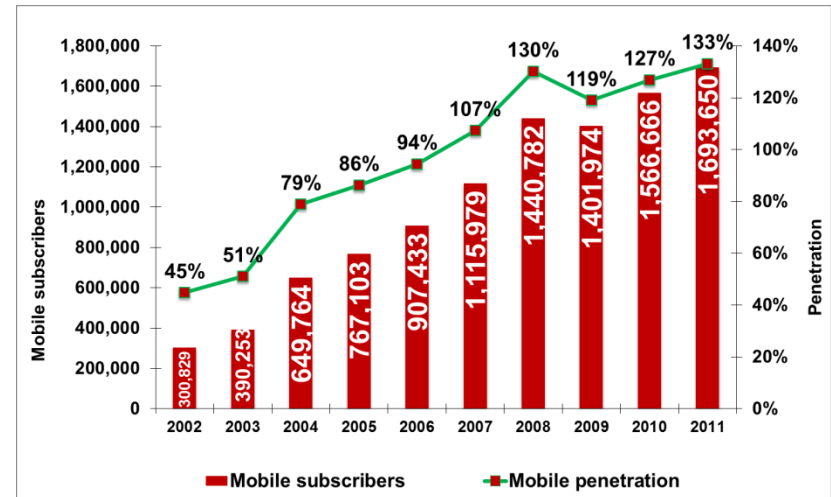


# Mobile services

- At the end of 2011 there were about 1.7 million mobile subscribers in Bahrain.
- In 2011 mobile penetration in Bahrain was 133%.

- The mobile market in Bahrain remains predominantly prepaid. Prepaid subscribers represented 82% of mobile subscribers at the end of 2011.

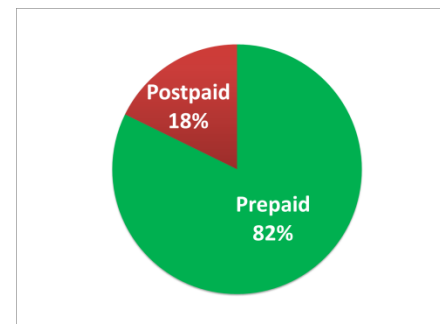
## Growth in the number of mobile subscribers



Source: TRA analysis

Note: The drop in the number of mobile subscribers in 2009 is due to the prepaid SIM card registration campaign and compliance by Batelco with the ITU active prepaid subscribers' definition.

## Proportion of prepaid and postpaid subscribers



Source: TRA analysis



# Mobile traffic

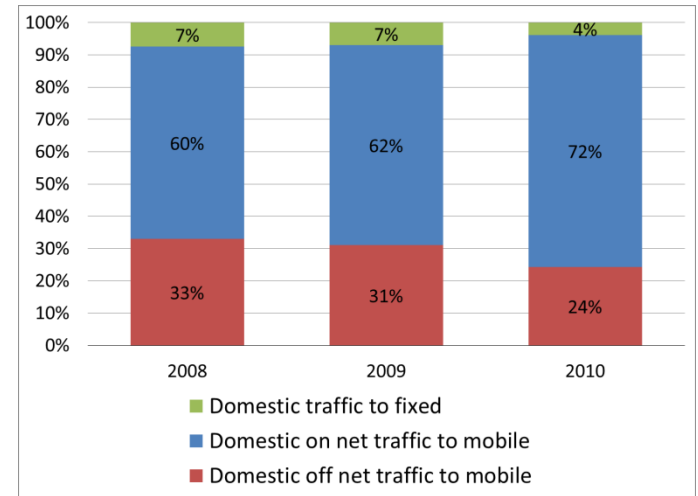
## Mobile outgoing minutes (volume)

Mobile outgoing minutes (Domestic only, in millions)	2008	2009	2010	Growth 2009 - 2010
From prepaid	1,081	1,235	2,730	121%
From postpaid	753	783	1,015	30%
<b>Total</b>	<b>1,834</b>	<b>2,018</b>	<b>3,745</b>	<b>86%</b>

Source: TRA analysis

- 86% annual growth in domestic mobile originated traffic between 2009 and 2010.
- Most of the mobile traffic originates from prepaid subscribers.
- Domestic prepaid mobile outgoing minutes grew by 121% between 2009 and 2010.
- In 2010, domestic traffic originated from prepaid represented 73% of the total domestic mobile traffic.
- In 2010, 72% of domestic mobile originated traffic was on-net traffic to mobile.
- Number of SMS grew by 175% from 2009 to 2010.

## Distribution of domestic mobile outgoing minutes



Source: TRA analysis

## Number of SMS's

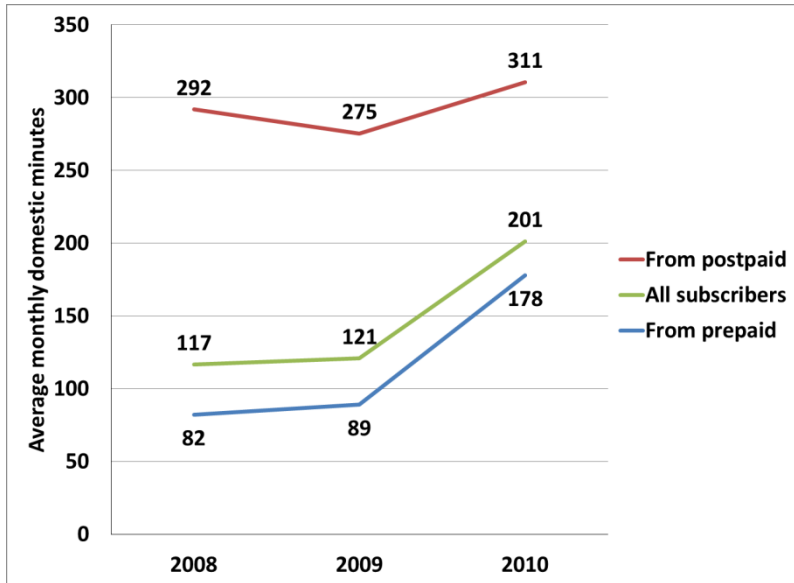
Total SMS (millions)	2008	2009	2010	Growth 2009 - 2010
Prepaid	161.6	214.9	791.3	268%
Postpaid	108.9	146.6	202.5	38%
<b>Total</b>	<b>270.5</b>	<b>361.5</b>	<b>993.8</b>	<b>175%</b>

Source: TRA analysis



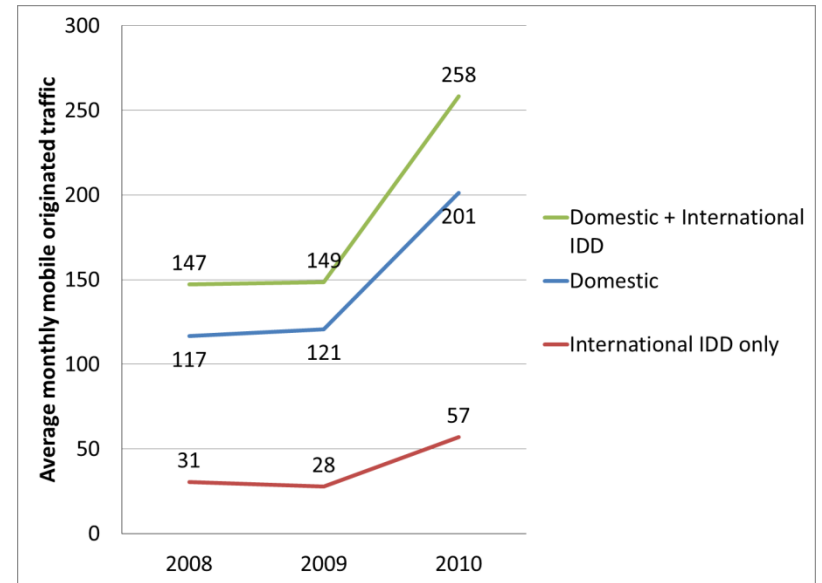
# Mobile traffic

Average monthly outgoing minutes per subscriber  
(Domestic traffic only)



Source: TRA analysis

Average monthly outgoing minutes per subscriber  
(Domestic and International traffic)



Source: TRA analysis

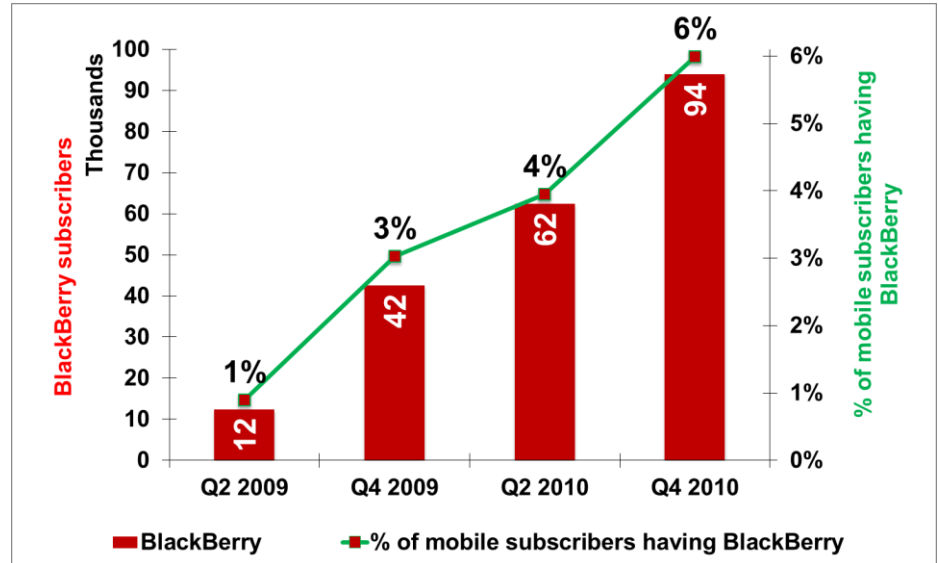
- 100% growth in the average monthly minutes for domestic calls between 2009 and 2010 for prepaid subscribers.
- 104% growth in the average monthly minutes for international direct dial traffic between 2009 and 2010.



# BlackBerry subscribers

- At the end of 2010, there were 94,000 BlackBerry subscribers, representing 6% of mobile subscribers.
- 124% growth in BlackBerry subscribers between 2009 and 2010.

Growth in BlackBerry subscribers



Source: TRA analysis



# Mobile revenue

## Mobile revenue

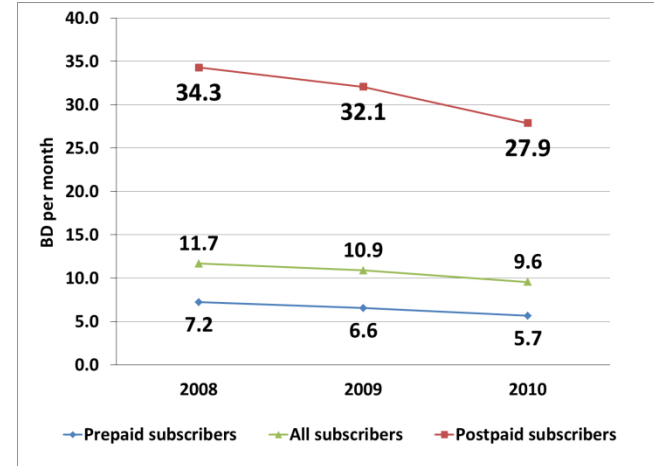
Revenue (BD in millions)	2007	2008	2009	2010	Growth 2009 - 2010
Prepaid	65.9	95.3	90.9	86.9	-4%
Postpaid	58.8	88.4	91.2	91.2	0%
<b>Total</b>	<b>124.7</b>	<b>183.7</b>	<b>182.1</b>	<b>178.1</b>	<b>-2%</b>

Source: TRA analysis

Note: Revenues including connection charges, monthly subscription fees and usage charges (including international direct dial usage only) .

While traffic grew significantly, mobile revenues declined slightly in 2010. This indicates competitive pressures on prices.

## Average revenue per mobile user (ARPU)



Source: TRA analysis

Note:

-Revenues including connection charges , monthly subscription fees and usage charges (including international direct dial usage only) .

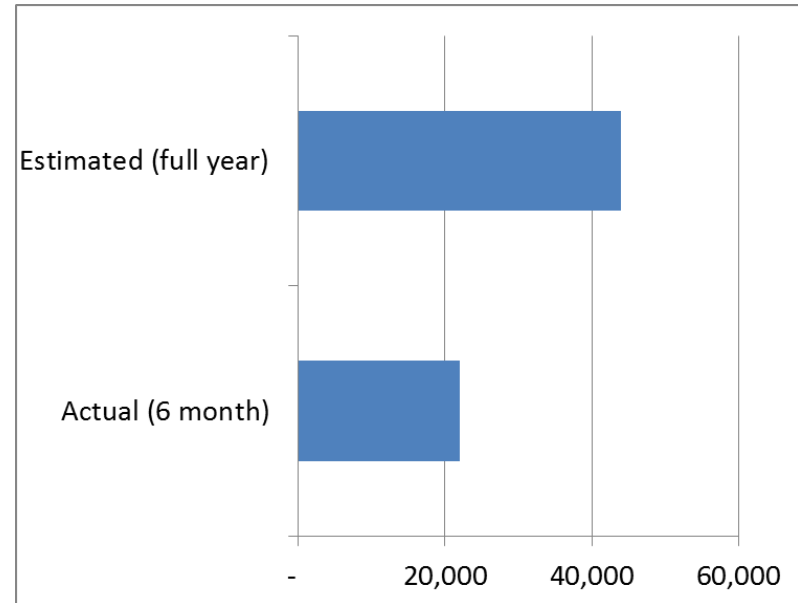
-All subscribers ARPU's are weighted averages.



# Mobile Number Portability

- Since the successful introduction of number portability in July 2011, about 22,000 mobile numbers have been ported.
- On an annual basis this represents about 44,000 numbers and close to 3% of the mobile customers' base.

Volume of mobile number ported

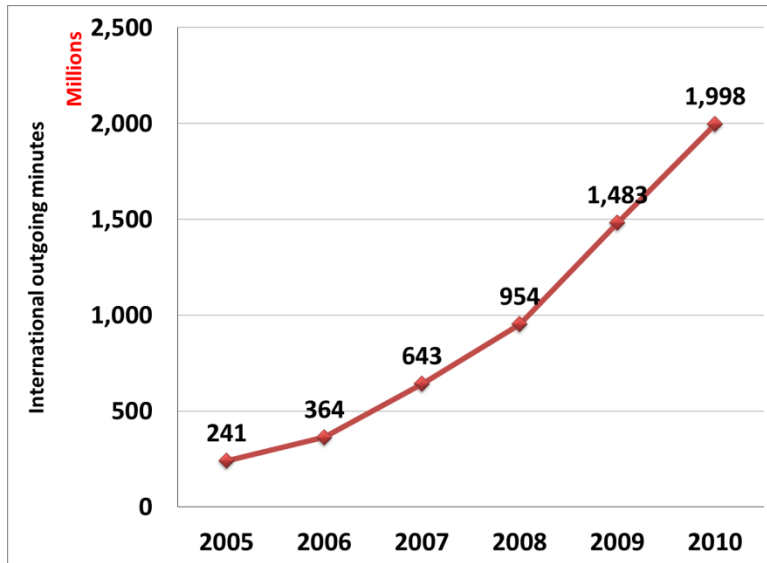


Source: TRA analysis



# International Outgoing minutes

## Growth in international outgoing minutes



Source: TRA analysis

- ▶ International traffic is still growing rapidly despite the use of (free) internet calls. Between 2009 and 2010, international traffic grew by 35%.
- ▶ 47% growth in the outgoing traffic to GCC between 2009 and 2010 mainly due to tariff reductions (about 53%).
- ▶ 5% drop in the international calls revenue between 2009 and 2010.

**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.

## International outgoing minutes

Minutes (in millions)	2005	2006	2007	2008	2009	2010	Growth 2009 - 2010
GCC <sup>1</sup>	70.00	93.10	109.00	106.00	131	193	47.3%
Zone 2	95.00	167.00	400.00	686.50	1,128	1,570	39.2%
Zone 3	30.00	40.30	59.00	53.00	83.3	84	0.6%
Zone 4	45.30	63.00	74.10	108.30	140.7	151	7.0%
<b>Total</b>	<b>240.30</b>	<b>363.40</b>	<b>642.10</b>	<b>953.80</b>	<b>1,483</b>	<b>1,998</b>	<b>34.7%</b>

Source: TRA analysis

## International calls revenue

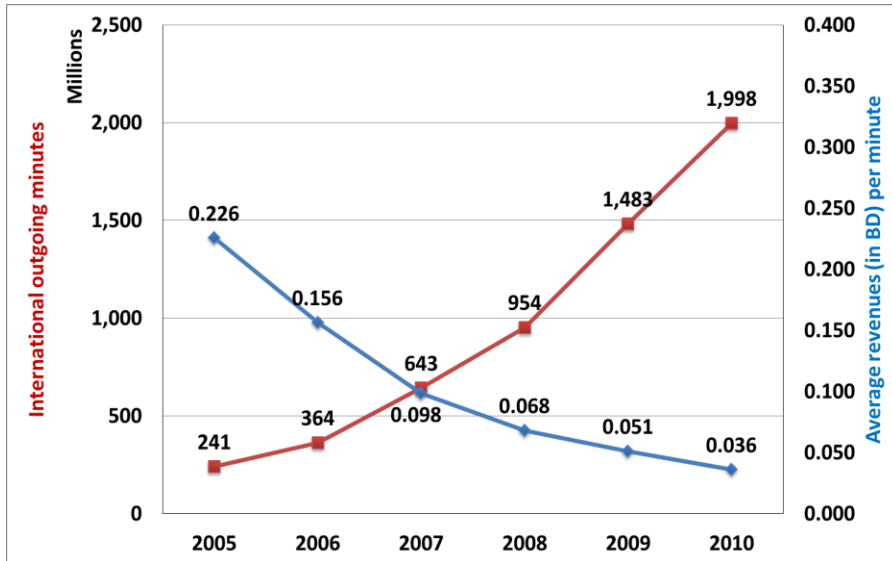
Revenues (BD in millions)	2005	2006	2007	2008	2009	2010	Yearly growth 2009 - 2010
GCC	12.10	15.40	16.60	13.93	18.3	12.70	-31%
Zone 2	23.20	19.70	27.60	31.56	36.5	38.80	6%
Zone 3	7.20	7.30	7.40	6.36	7.8	6.70	-15%
Zone 4	11.90	14.30	11.50	13.13	13.2	13.90	6%
<b>Total</b>	<b>54.40</b>	<b>56.70</b>	<b>63.10</b>	<b>65.00</b>	<b>75.8</b>	<b>72.10</b>	<b>-5%</b>

Source: TRA analysis



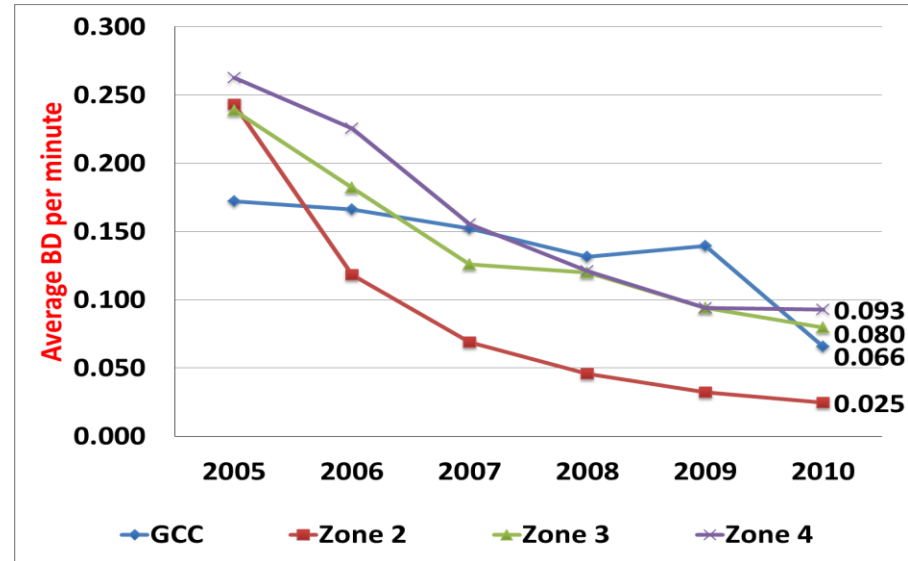
# Price elasticity

Drop in average revenue per minute vs. growth in traffic



Source: TRA analysis

Average revenue per minute by zone



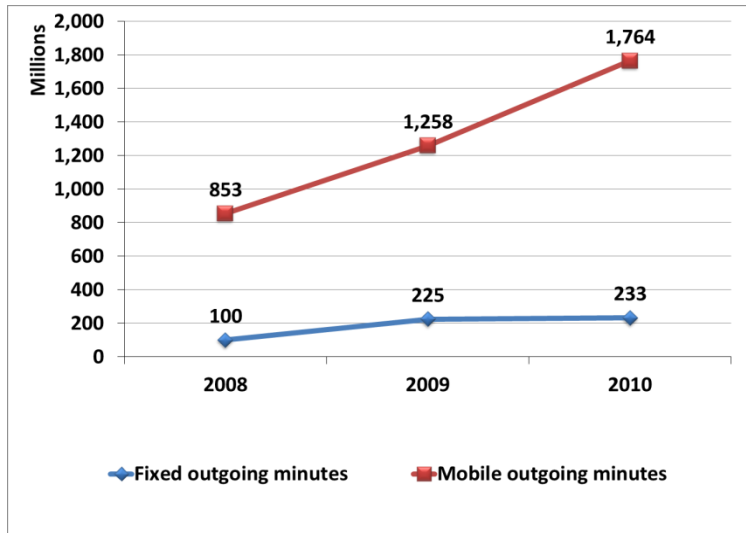
Source: TRA analysis

- 84% drop in the average revenue per minute in the last five years.
- 90% drop in the average revenue per minute in the last five years for Zone 2.



# International Outgoing minutes

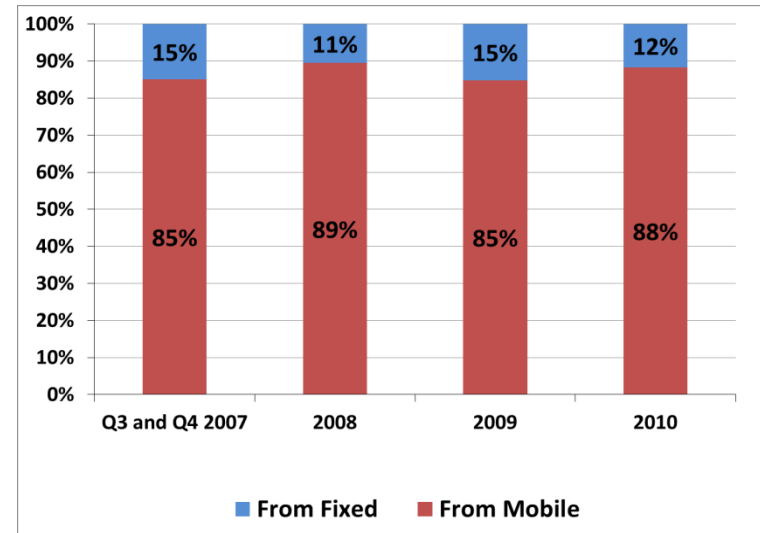
International outgoing minutes originated on mobile<sup>1</sup> grew by 40% between 2009 and 2010.



Source: TRA analysis

<sup>1</sup> Minutes including prepaid calling card traffic.

International outgoing minutes originated on mobile represents 88% of the total international outgoing minutes in 2010.

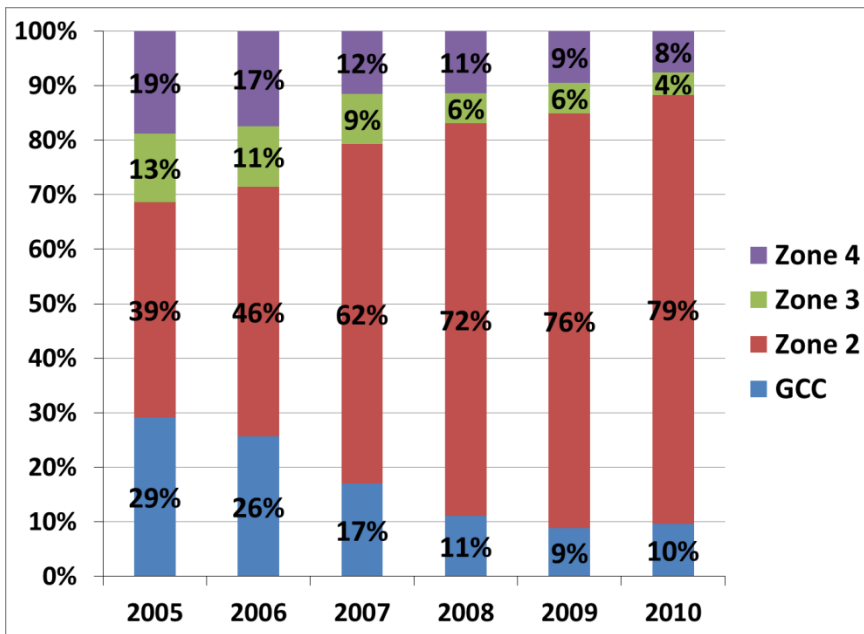


Source: TRA analysis



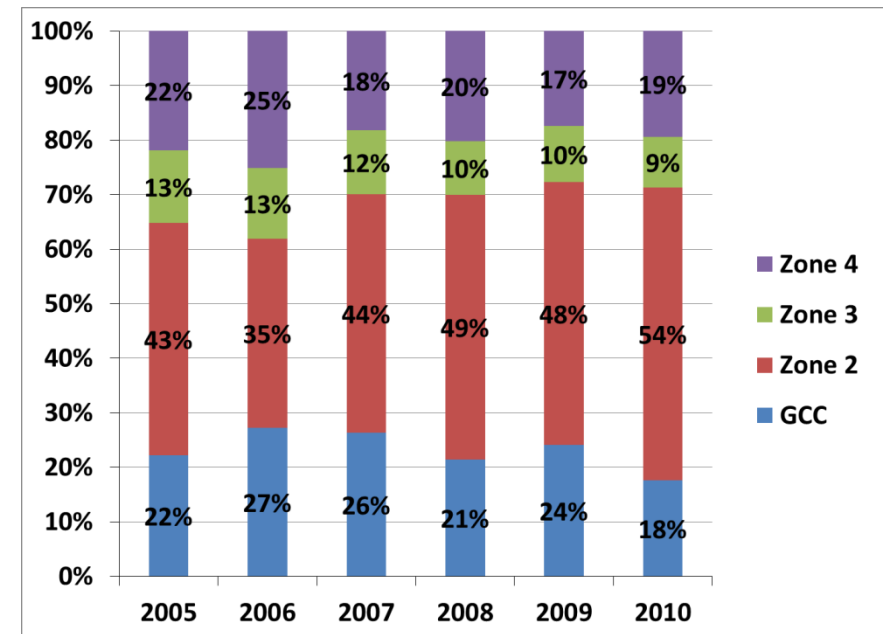
# International traffic vs. revenues

About 80% of total international calls **minutes** were made to South Asian countries in 2010



Source: TRA analysis

About 54% of international **revenues** were generated from calls to South Asian countries in 2010

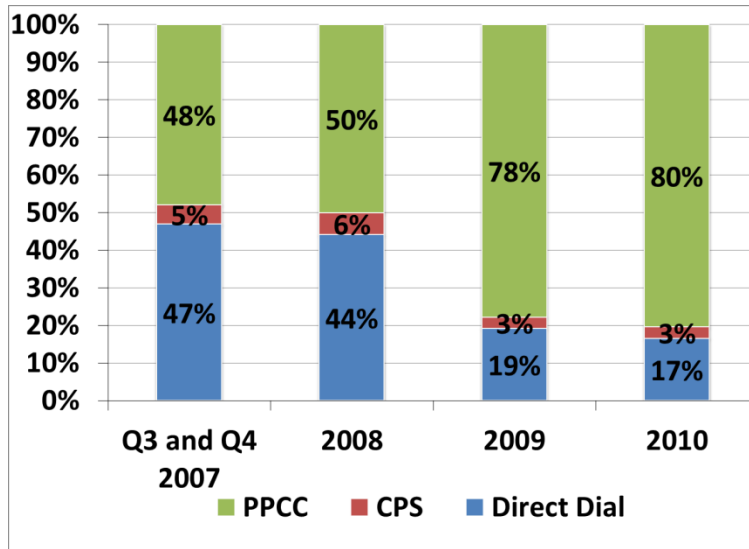


Source: TRA analysis



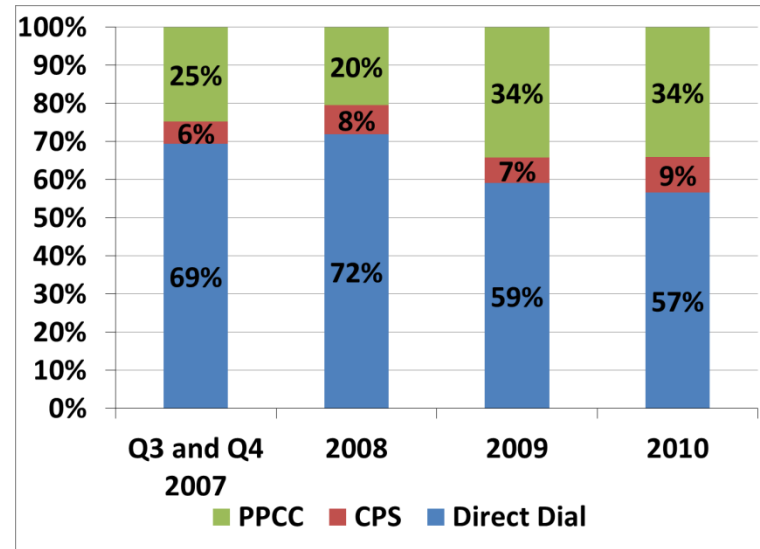
# Distribution of international outgoing minutes/revenues by access type - Fixed telephony

Distribution of international **minutes** originated from fixed by access type



Source: TRA analysis

Distribution of international **revenues** originated from fixed by access type



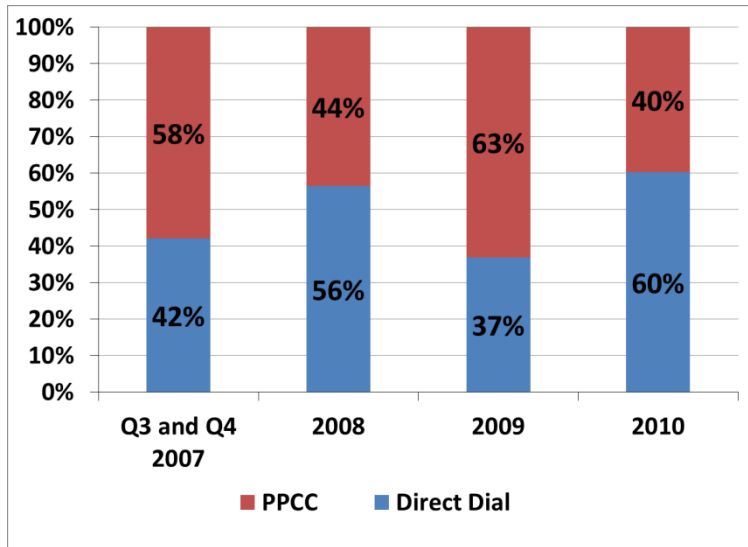
Source: TRA analysis

Although traffic originated from fixed lines using prepaid calling cards represents 80% of international fixed line traffic, it represents only 34% of the revenues.



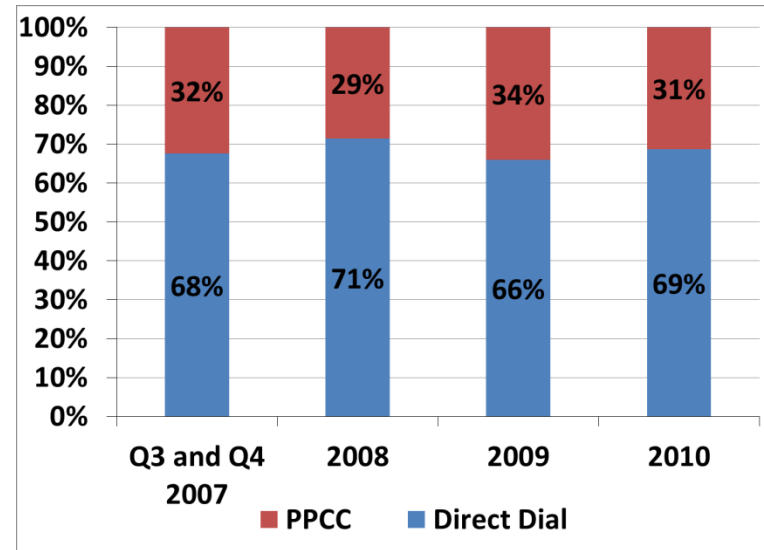
# Distribution of international outgoing minutes/revenues by access type - Mobile

Distribution of international **minutes** originated from mobile by access type



Source: TRA analysis

Distribution of international **revenues** originated from mobile by access type

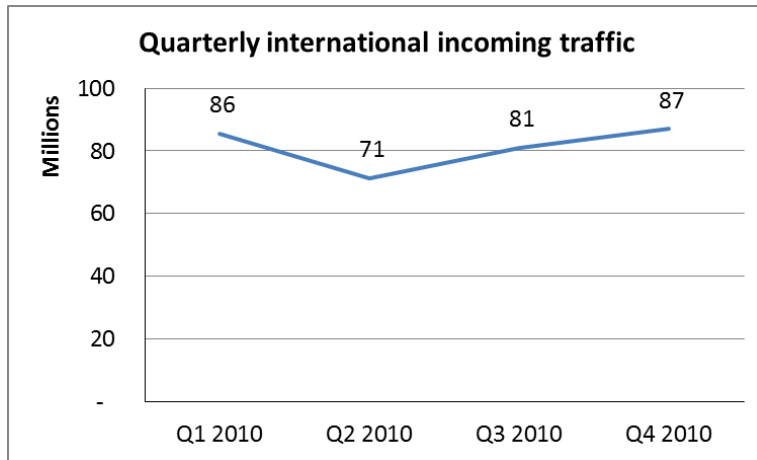


Source: TRA analysis

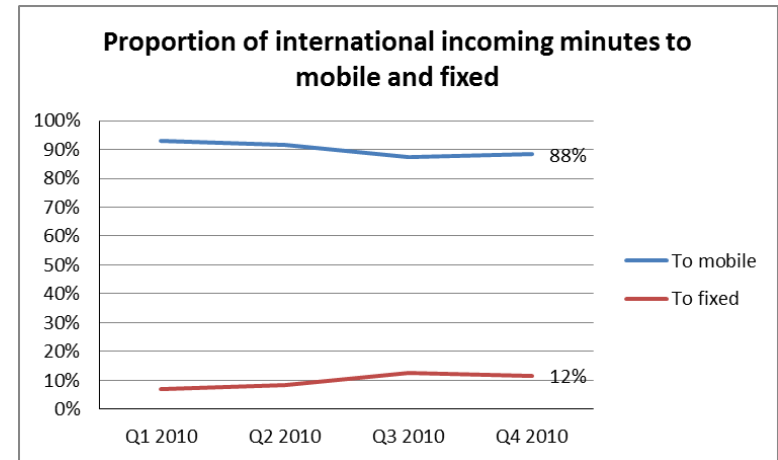
In 2010, international direct dial traffic originated from mobile represents 60% of the total traffic, up from 37% in 2009.



# International incoming calls minutes



Source: TRA analysis

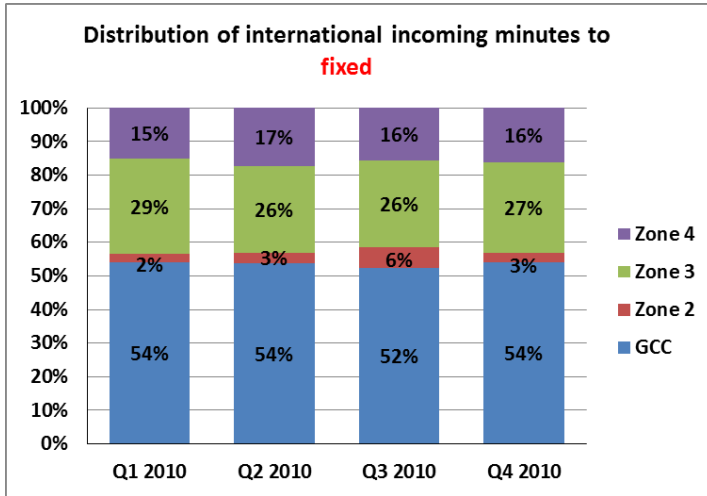


Source: TRA analysis

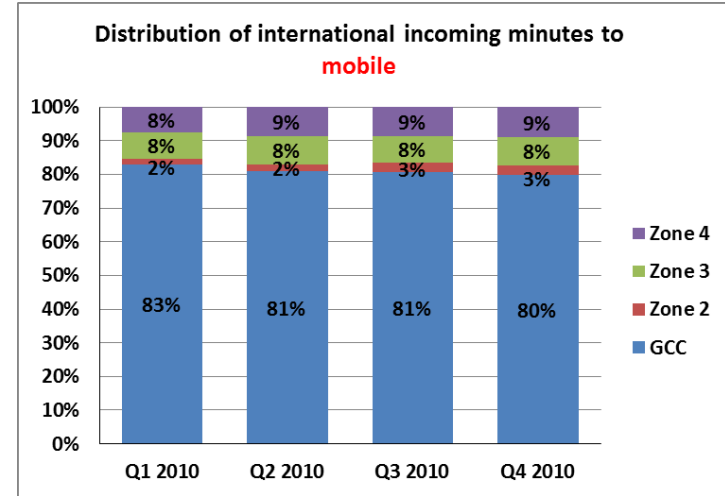
- In 2010, 325 million international incoming minutes.
- About 90% of international incoming calls were made to mobile.



# International incoming calls minutes



Source: TRA analysis



Source: TRA analysis

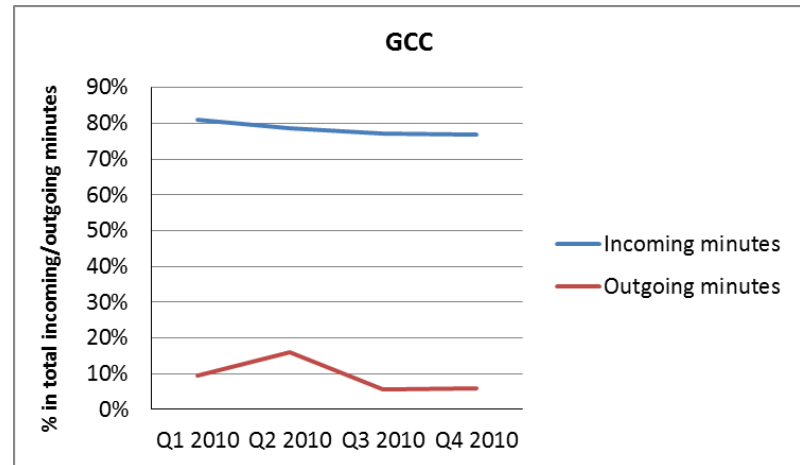
- About 55% of international incoming calls minutes made to fixed lines were from GCC countries.
- About 80% of international incoming calls minutes made to mobiles were from GCC countries.



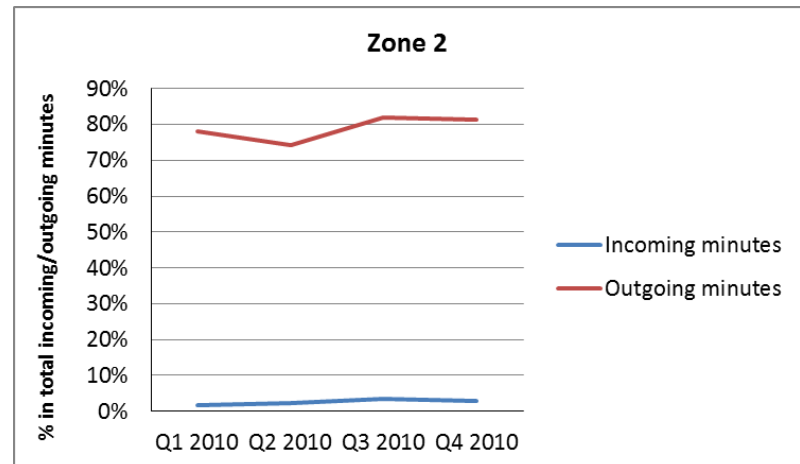
# International outgoing minutes vs. international incoming minutes

➤ While international outgoing minutes to GCC represent only 6% of total international outgoing minutes, the international incoming minutes from GCC represents 77% of total international incoming minutes to Bahrain.

➤ While international outgoing minutes to Zone 2 represent 80% of total international outgoing minutes, the international incoming minutes from Zone 2 represents only 3% of total international incoming minutes to Bahrain.



Source: TRA analysis

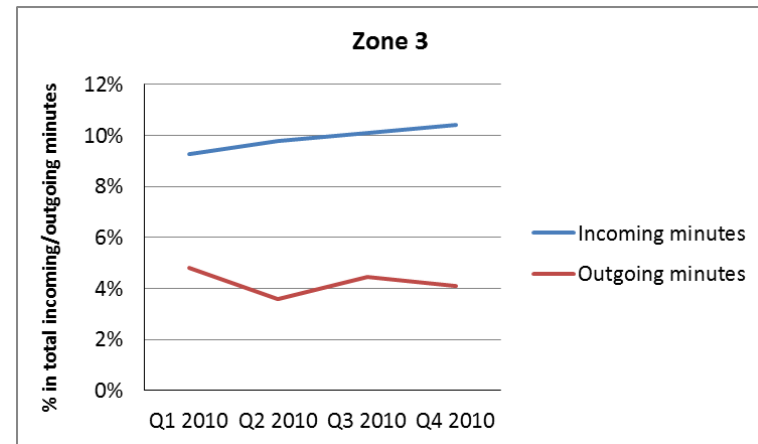


Source: TRA analysis



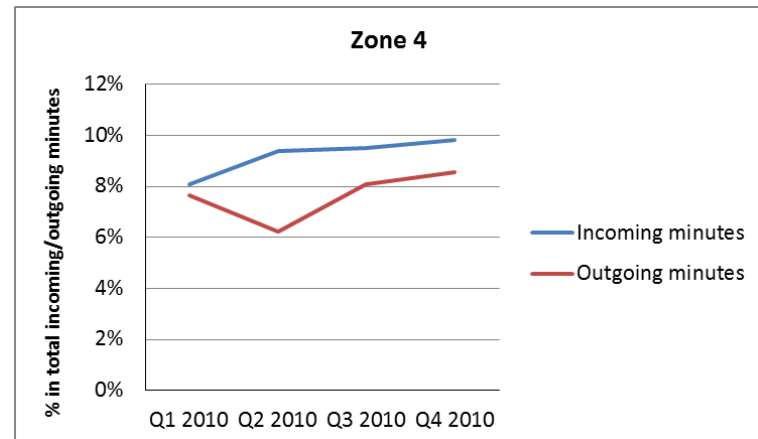
# International outgoing minutes vs. international incoming minutes

- While international outgoing minutes to Zone 3 represent 4% of total international outgoing minutes, the international incoming minutes from Zone 3 represents 10% of total international incoming minutes to Bahrain.



Source: TRA analysis

- For Zone 4, the proportion of international outgoing minutes and incoming minutes out of the total outgoing and incoming minutes respectively is similar.



Source: TRA analysis



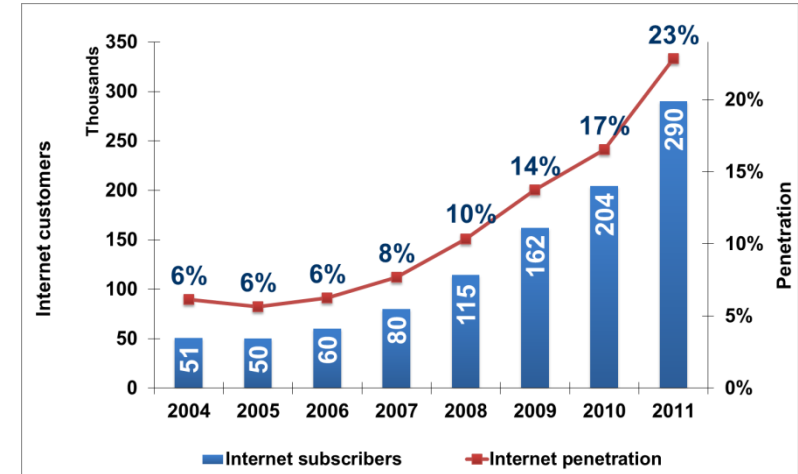
# Internet subscribers

- At the end of 2011, there were approximately 290,000 internet subscribers, all of whom were broadband subscribers.
- The number of broadband subscribers increased by 42% between 2010 and 2011.
- About 95% of households<sup>1</sup> have fixed broadband.

Note:

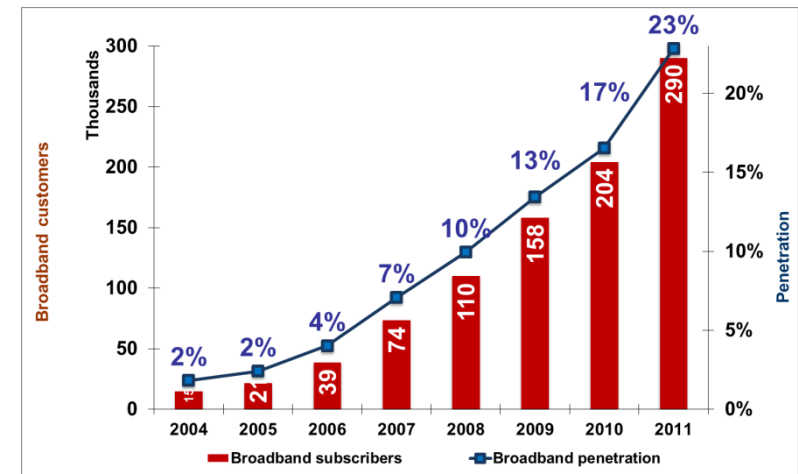
<sup>1</sup> Based on CIO data in 2010 there were 156,623 households in Bahrain.

## Internet subscribers



Source: TRA analysis

## Broadband subscribers

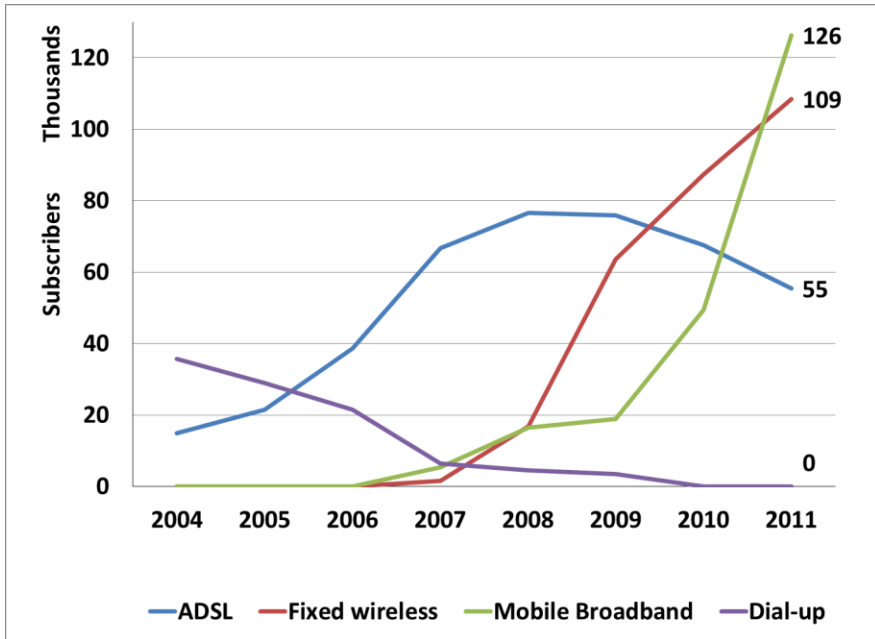


Source: TRA analysis



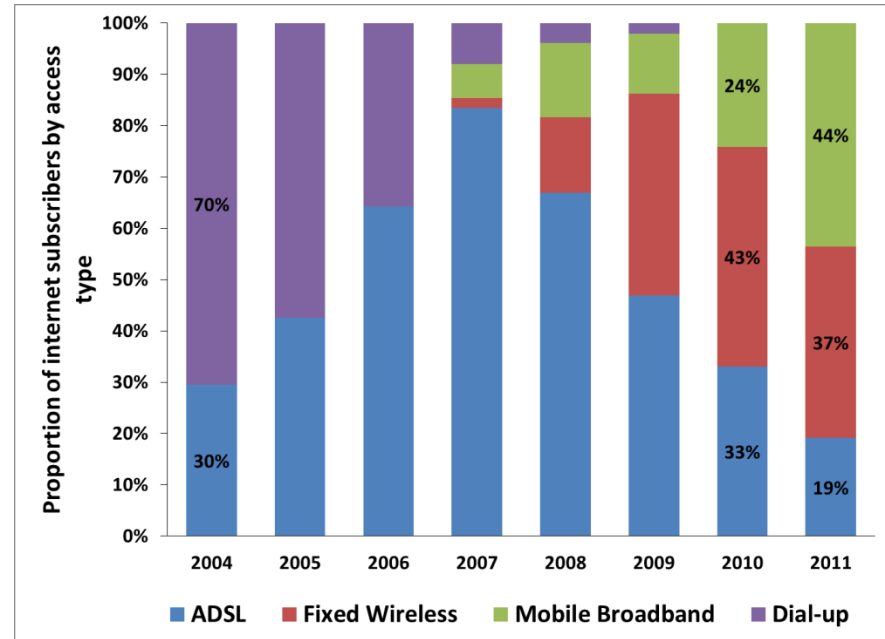
# Internet subscribers

Number of internet subscribers by access type



Source: TRA analysis

Proportion of internet subscribers by access type



Source: TRA analysis

\* Fixed wireless including: WiMax and Satellite



# Internet subscribers

## Residential internet subscribers

	2004	2005	2006	2007	2008	2009	2010
Dial up	31,855	25,316	18,175	3,752	1,683	1,715	0
Broadband subscribers	13,242	18,764	34,858	68,009	101,961	149,581	194,254
<b>Total</b>	<b>45,097</b>	<b>44,080</b>	<b>53,033</b>	<b>71,761</b>	<b>103,644</b>	<b>151,296</b>	<b>194,254</b>

Source: TRA analysis

## Business internet subscribers

	2004	2005	2006	2007	2008	2009	2010
Dial up	3,810	3,551	3,291	2,673	2,335	1,765	0
Broadband subscribers	1,714	2,668	3,770	5,554	8,033	8,754	9,943
<b>Total</b>	<b>5,524</b>	<b>6,219</b>	<b>7,061</b>	<b>8,227</b>	<b>10,368</b>	<b>10,519</b>	<b>9,943</b>

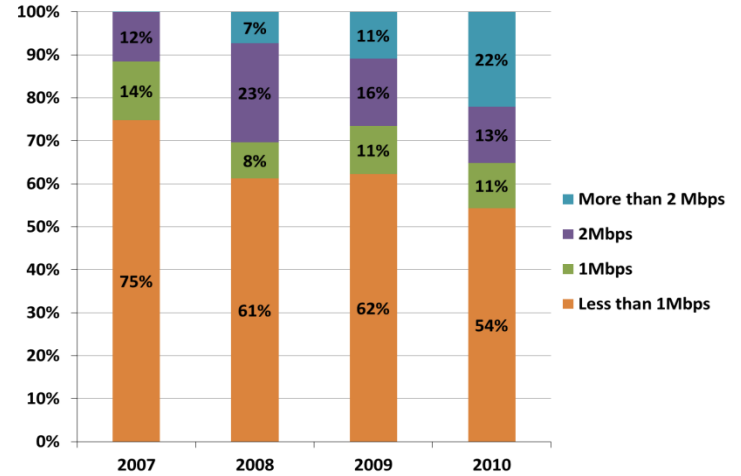
Source: TRA analysis



# Proportion of broadband subscribers by access speed

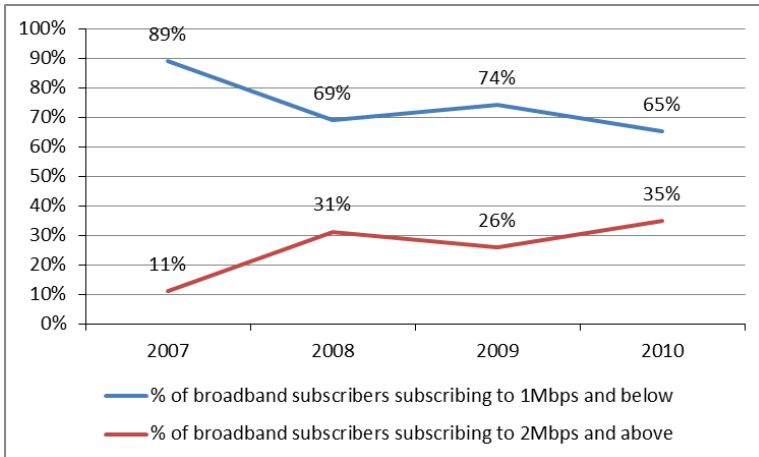
- Approximately 45% of broadband subscribers in 2010 had speeds of 1Mbps and above.
- The proportion of subscribers with access speed 2Mbps and above has doubled between 2009 and 2010.

Proportion of broadband subscribers by access speed



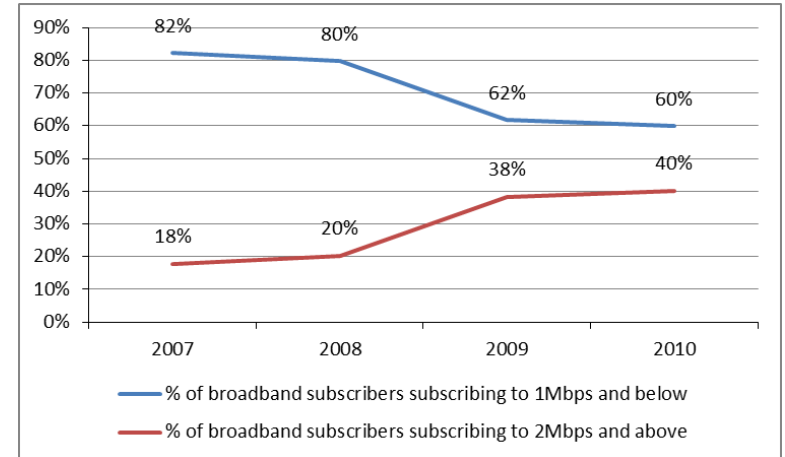
Source: TRA analysis

Proportion of residential broadband subscribers by access speed



Source: TRA analysis

Proportion of business broadband subscribers by access speed



Source: TRA analysis



# Broadband revenue

- Growth in the number of internet subscribers between 2009 and 2010 (26%) results in revenue growth of 20%.
- Although broadband prices in Bahrain dropped by up to 40%, the reduction in average revenue per user was less (up to 12%) due to subscribers moving to higher speeds.

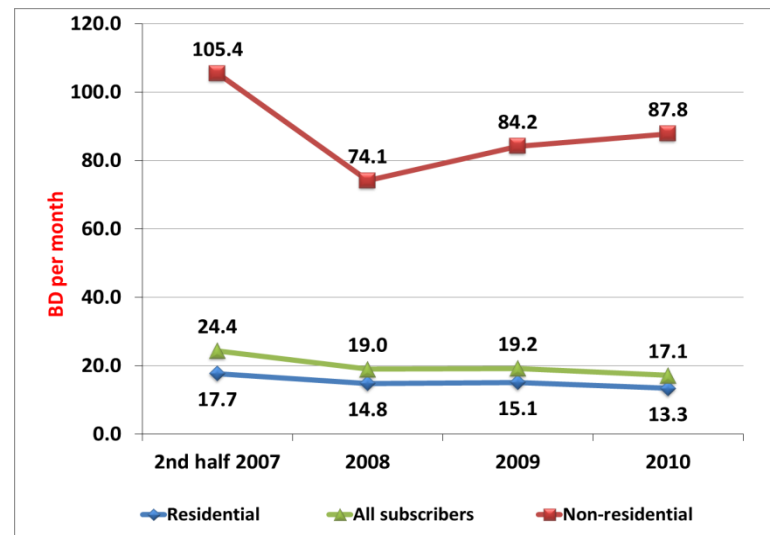
## Broadband revenue\*

Revenue (BD in million)	2008	2009	2010	Growth 2009 - 2010
Residential	15.7	24	28.9	21%
Non-residential	5.9	8.5	10.2	20%
<b>Total</b>	<b>21.6</b>	<b>32.5</b>	<b>39.1</b>	<b>20%</b>

Source: TRA analysis

\* Include fixed and mobile broadband revenues

## Average revenue per broadband user (ARPU)



Source: TRA analysis



# Leased line services

## Number of domestic leased lines

Leased line speed	Q4 2007	Q4 2008	Q4 2009	Q4 2010
x < 64 kbps and less	227	365	235	110
64 kbps ≤ x < 512 kbps	508	1163	889	954
512 kbps ≤ x < 1024 kbps	140	181	188	286
1024 kbps ≤ x < 2048 kbps	104	149	193	233
2 Mbps ≤ x < 45 Mbps	124	496	637	794
45 Mbps ≤ x < 155 Mbps	2	27	33	48
155 Mbps ≤ x < 622 Mbps	0	0	1	1
x ≥ 622 Mbps	0	3	2	2
<b>Total</b>	<b>1105</b>	<b>2384</b>	<b>2178</b>	<b>2428</b>

Source: TRA analysis

The number of domestic leased lines grew by 11% between 2009 and 2010 while the number of international leased lines dropped by -23%

## Number of International Leased Lines

Destinations	Speed	2007	2008	2009	2010
Zone 1	Analogue and Speeds lower than 64Kbps	0	29	14	6
	x < 1 Mbps	133	146	126	113
	1Mbps ≤ x < 2 Mbps	6	4	9	5
	2 Mbps ≤ x < 45 Mbps	45	56	53	35
	45 Mbps ≤ x < 155 Mbps	7	10	9	10
	155 Mbps ≤ x < 622 Mbps	0	0	7	6
	x ≥ 622 Mbps	3	1	1	4
	<b>Total</b>		<b>194</b>	<b>246</b>	<b>219</b>
Zone 2	Analogue and Speeds lower than 64Kbps	0	7	9	2
	x < 1 Mbps	15	14	19	13
	1Mbps ≤ x < 2 Mbps	1	2	0	0
	2 Mbps ≤ x < 45 Mbps	0	2	10	10
	45 Mbps ≤ x < 155 Mbps	1	0	0	0
	155 Mbps ≤ x < 622 Mbps	0	0	1	1
	x ≥ 622 Mbps	0	0	2	2
	<b>Total</b>		<b>17</b>	<b>25</b>	<b>41</b>
Zone 3	Analogue and Speeds lower than 64Kbps	0	1	0	1
	x < 1 Mbps	20	18	35	44
	1Mbps ≤ x < 2 Mbps	1	0	0	1
	2 Mbps ≤ x < 45 Mbps	11	9	9	10
	45 Mbps ≤ x < 155 Mbps	3	2	3	2
	155 Mbps ≤ x < 622 Mbps	0	0	2	3
	x ≥ 622 Mbps	2	3	2	2
	<b>Total</b>		<b>37</b>	<b>33</b>	<b>51</b>
<b>Grand total</b>		<b>248</b>	<b>304</b>	<b>311</b>	<b>270</b>

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

Source: TRA analysis

Note: 2009 has been revised.



# Leased lines revenue

Revenue (BD in million)	2007	2008	2009	2010
Domestic	3.86	8.82	12.30	14.40
International	14.40	20.40	33.67	29.60
Other data	5.45	2.70	2.56	2.50
<b>Total</b>	<b>23.71</b>	<b>31.92</b>	<b>48.53</b>	<b>46.50</b>

Source: TRA analysis



# Fixed broadband retail prices time series (based on 2010 OECD baskets)

	USD/PPP				Change in prices	
	2008	2009	2010	2011	2010-2011	2008-2011
<b>Residential fixed broadband (OECD baskets)</b>						
Low usage low speed residential broadband basket, >256 kb/s	41.46	41.46	41.46	40.34	-3%	-3%
Low usage medium speed residential broadband basket, >2.5 Mb/s	n/a	n/a	202.81	121.01	-40%	n/a
Low usage high speed residential broadband basket, >15 Mb/s	n/a	n/a	404.50	403.38	0%	n/a
High usage low speed residential broadband basket, >256 kb/s	101.97	101.97	57.98	56.67	-2%	-44%
High usage medium speed residential broadband basket, >2.5 Mb/s	n/a	n/a	202.81	121.01	-40%	n/a
High usage high speed residential broadband basket, >15 Mb/s	n/a	n/a	404.50	403.38	0%	n/a
<b>Business fixed broadband (OECD baskets)</b>						
Low usage low speed business broadband basket, >256 kb/s	114.07	114.07	81.80	80.68	-1%	-29%
Low usage medium speed business broadband basket, >2.5 Mb/s	n/a	n/a	712.64	708.71	-1%	n/a
Low usage high speed business broadband basket, >15 Mb/s	n/a	n/a	1,620.24	1,616.32	0%	n/a
High usage low speed business broadband basket, >256 kb/s	309.26	309.26	154.08	152.96	-1%	-51%
High usage medium speed business broadband basket, >2.5 Mb/s	n/a	n/a	712.64	708.71	-1%	n/a
High usage high speed business broadband basket, >15 Mb/s	n/a	n/a	1,620.24	1,616.32	0%	n/a

- ▶ As shown, broadband prices fell by up to 51% in the last three years and by up to 40% between 2010 and 2011.



# Mobile and Fixed retail prices time series (based on 2010 OECD baskets)

	USD/PPP				Change in prices	
	2008	2009	2010	2011	2010-2011	2008-2011
<b>Mobile (OECD baskets)</b>						
Mobile voice 30 calls basket	21.54	21.43	20.64	20.29	-2%	-6%
Mobile voice 100 calls basket	46.27	46.20	48.99	48.99	0%	6%
Mobile voice 300 calls basket	94.53	94.47	98.41	74.12	-25%	-22%
Mobile voice 900 calls basket	239.62	170.80	170.24	172.64	1%	-28%
Mobile voice 40 calls prepaid basket	22.36	20.19	20.89	20.58	-2%	-8%
<b>Fixed lines (PSTN) (OECD baskets)</b>						
PSTN 20 calls residential basket	10.34	10.34	10.34	10.34	0%	0%
PSTN 60 calls residential basket	23.98	23.98	23.98	23.98	0%	0%
PSTN 140 calls residential basket	49.45	49.45	49.45	49.45	0%	0%
PSTN 420 calls residential basket	117.32	117.32	117.32	117.32	0%	0%
PSTN 100 calls business basket	30.50	30.50	30.50	30.50	0%	0%
PSTN 260 calls business basket	103.66	103.66	103.66	103.66	0%	0%

- ▶ While mobile prices fell by up to 28% over the last three years, fixed line prices remain unchanged.



# Leased Line retail prices time series (based on 2010 OECD baskets)

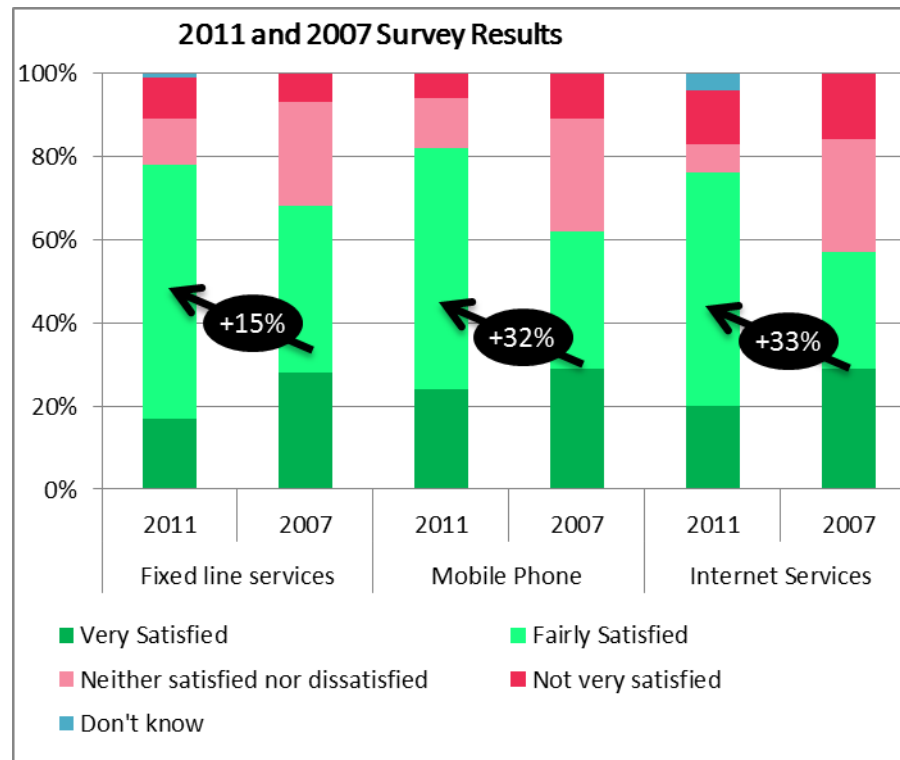
	USD/PPP				Change in prices	
	2008	2009	2010	2011	2010-2011	2008-2011
<b>Leased lines (OECD baskets)</b>						
64 kb/s	524.39	524.39	524.39	524.39	0%	0%
256 kb/s	1,008.45	1,008.45	1,008.45	1,008.45	0%	0%
2 Mb/s	3,590.07	3,590.07	3,590.07	3,590.07	0%	0%

- ▶ Leased lines prices remain unchanged since the first benchmarking study.



# Consumer satisfaction

- A recent survey commissioned by TRA shows significant increase in satisfaction levels between 2007 and 2011

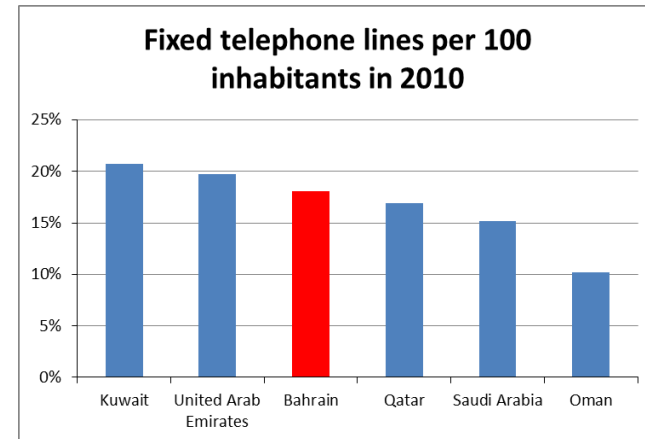


Source: 2011 and 2007 Nielson survey commissioned by TRA

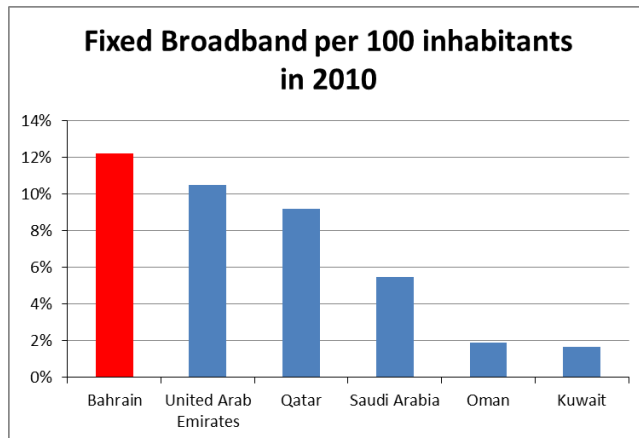


# Benchmarking of telecommunications service penetration rates with GCC countries

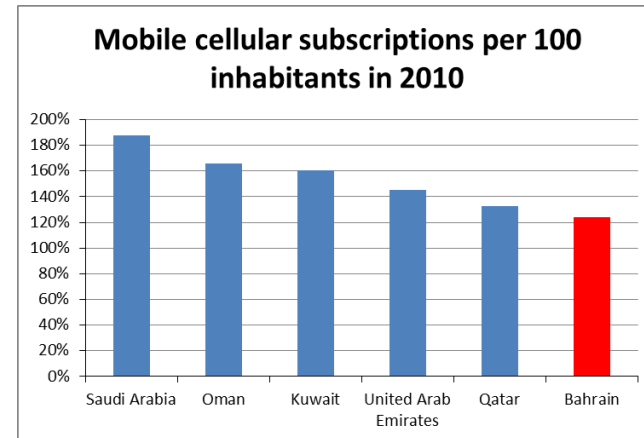
- Bahrain has the highest fixed broadband Penetration in the GCC.
- Bahrain compares well with other GCC countries in fixed line penetration.
- Bahrain has the lowest mobile penetration in the GCC.



Source: International Telecommunication Union



Source: International Telecommunication Union



Source: International Telecommunication Union



# List of Acronyms

ADSL	Asymmetric Digital Subscriber Line
BD	Bahraini Dinar
CPS	Carrier Pre-Selection
GCC	Gulf Cooperation Council
IDD	International Direct Dial
ITU	International Telecommunication Union
Kb/s	Kilobit per second
LAN	Local Area Network
Mb	Megabit
Mbps	Megabit per second
OLO	Other licensed operators
PPCC	Pre-Paid Calling Card
PSTN	Public Switched Telephone Network
PPP	Purchasing power parity
SMS	Short Message Service
TRA	Telecommunications Regulatory Authority



# Definitions of some key indicators

<b>Fixed telephone lines</b>	A fixed telephone line (previously called main telephone line in operation) is an active* line connecting the subscriber's terminal equipment to the public switched telephone network (PSTN) and which has a dedicated port in the telephone exchange equipment. This term is synonymous with the terms main station or Direct Exchange Line (DEL) that are commonly used in telecommunication documents. It may not be the same as an access line or a subscriber. This should include the active number of analog fixed telephone lines and fixed wireless lines (WLL).
<b>Prepaid mobile subscribers</b>	Total number of mobile cellular subscriptions (a subscription refers to a line) that uses prepaid refills. These are subscriptions that rather than paying a fixed monthly subscription fee, choose to purchase blocks of usage time. This includes both analogue and digital cellular systems (IMT-2000 (Third Generation, 3G) and 4G subscriptions. Only active prepaid subscriptions that have used the system (as shown by traffic or whether they have recharged the card) during the past three months should be included.
<b>Number of dial-up Internet subscribers</b>	Number of Dial-up Internet subscribers. Dial-up is a connection to the Internet via a modem and telephone line, which requires that the modem dial a phone number when Internet access is needed. Only active subscribers that have used the system within the last 3 months should be included.
<b>Number of fixed broadband Internet subscribers</b>	Total broadband Internet subscribers refers to those subscribers who pay for high-speed access to the public Internet (a TCP/IP connection), at speeds equal to, or greater than, 256 kbit/s, in one or both directions. This total is measured irrespective of the method of payment. It excludes subscribers with access to data communications (including the Internet) via mobile cellular networks.
<b>Other fixed broadband Internet subscribers (ITU code 4213ob)</b>	Internet subscribers using other fixed broadband technologies to access the Internet (other than DSL, cable modem and leased lines). This includes technologies such as satellite broadband Internet, Fibre-to-the-home Internet access, Ethernet LANs, fixed wireless access, Wireless Local Area Network, WiMax etc. Speeds should be equal to, or greater than, 256 kbit/s, in one or both directions. It would exclude users of temporary broadband access (e.g., roaming between PWLAN hotspots), and those with Internet access via mobile cellular networks.
<b>Mobile broadband</b>	Mobile broadband = Standard mobile subscriptions with use of data communications at broadband speeds + Dedicated mobile data subscriptions