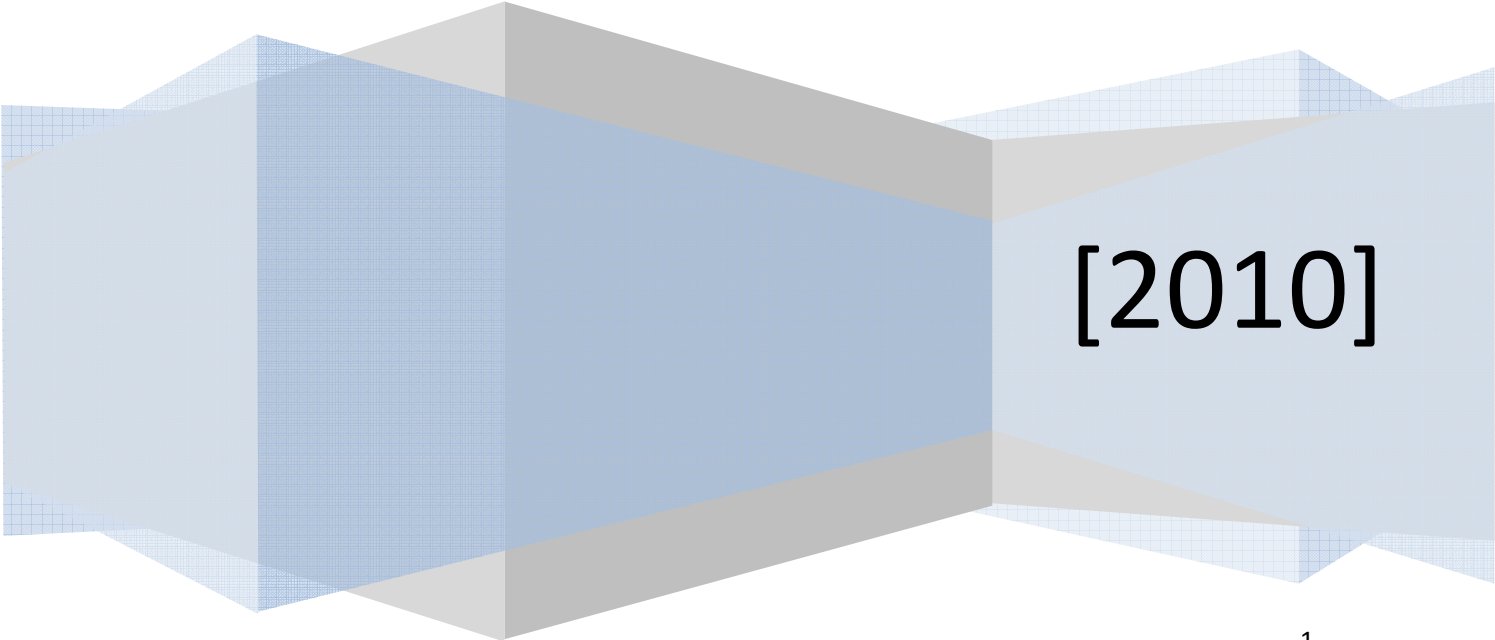


Pakistan Telecommunication Authority

**Study on
SMS Traffic in Pakistan
&
Global Trends**

**The Inter-Cellular Network Utilization for SMS Traffic in Pakistan
&
its comparison with Global Trends**



[2010]

Pakistan has seen a stunning and remarkable growth in both, the mobile subscriber base and the SMS traffic, during the past few years. The mobile subscriber base is touching the figure of 100 million by the last quarter of Y2010. And awesomely, 151.6385 Billion text messages were exchanged during the Y2009. That is, 1532 sms per subscriber in the Y2009.

Around the world, SMS is used by four billion mobile users, who sent five trillion messages in 2009 i.e. approximately 105 sms per person per month, which are less than 128 SMS per person exchanged per month in Pakistan, and it continues to grow intensely. By 2013 the volume of messages will double to 10 trillion, according to Portio Research. That is, the SMS traffic will grow double in coming four years. The forward prediction can be seen in Fig.1.

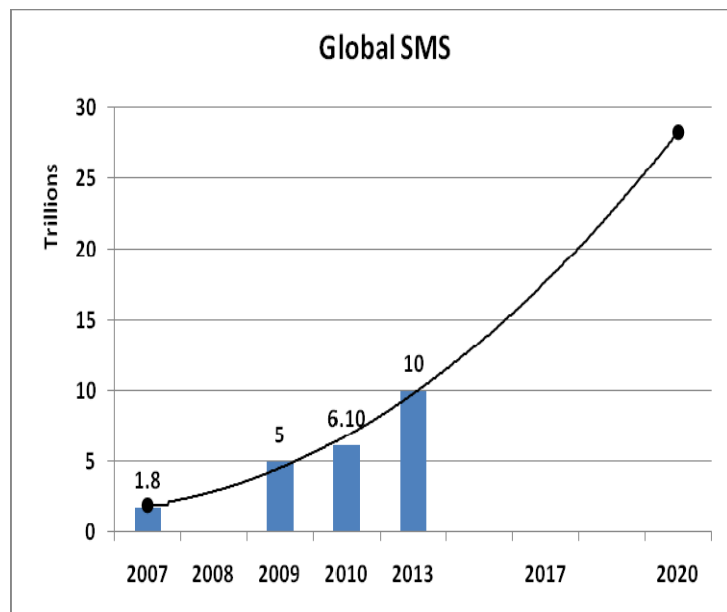
International Telecommunication Union (ITU) reported that in the Y2010, a total of 6.1 Trillion SMS have been exchanged Worldwide, from 5.3 billion mobile cellular subscriptions worldwide, including 940 million subscriptions to 3G services, which has jumped from 1.8 Trillion SMS in the Y2007. That is the Text messaging has leapt three-folds in the past three years, with almost 200,000 text messages exchanged every second.

This SMS count proves why it remains one of operators' strongest data revenue streams. According to ITU, the globe is currently earning 14,000 dollars every second from SMS that is, assuming an average cost of USD 0.07 per SMS, in 2010 SMS traffic is generating an estimated USD 812 000 every minute (or around USD 14 000 every second) from 5.3Billion users.

In 2009, SMS revenue accounted for 12% of China's largest mobile operator's total revenue. The Philippines and the United States combined accounted for 35% of all SMS sent in 2009.

Much of the consistent growth of SMS is due to its ever-widening adoption beyond peer-to-peer messaging, such as banking, social networking, enterprise applications, advertising and machine-to-machine communication. For instance, Juniper Research recently revealed that global mobile banking services will be generating 90 billion text messages per annum by 2015, as banks seek to utilise SMS as a means of enhancing customer communications and services.

In this paper, the SMS-Traffic of Pakistan has been analyzed and is compared with international practices.



According to ITU, SMS tripled in past three years (Y2007-Y2010).

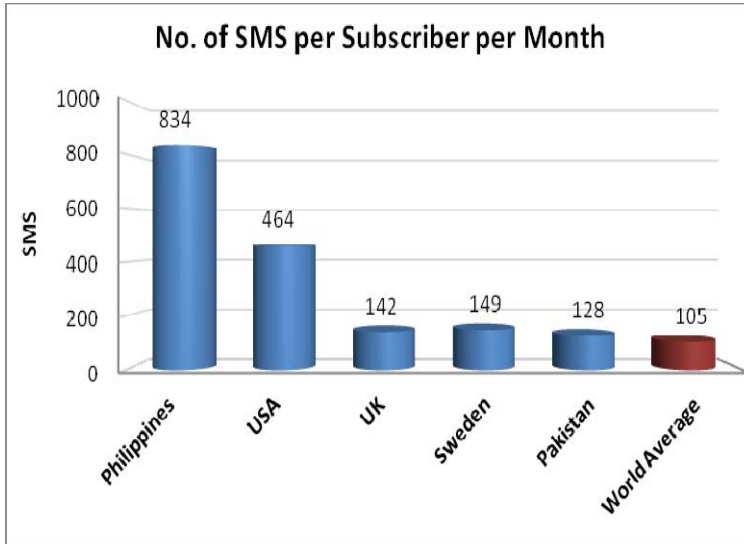
“The SMS traffic will double in coming four years (Y2013)”--- Portio Research.

In 2009, SMS revenue accounted for 12% of China's largest mobile operator's total revenue.

Fig.1:

Summary:-

Global Trends:



Globally, SMS is used by Four Billion mobile users, who sent five trillion (5,000,000,000,000) messages in 2009 i.e. approximately 105 sms per person per month.

The Philippines and the United States combined accounted for 35% of all SMS sent in 2009.

Fig 2:

Global Trend		
	No. of SMS Per Subscriber Per Month in Y2009(pSpM)	Rates. * ALL COSTS ARE IN USD
Philippines	834 SMS (Approx) Per Subscriber Per Month	1-3 cents
USA	464 SMS (Approx) Per Subscriber Per Month	22 cents per text
UK	142 SMS (Approx) Per Subscriber Per Month	9-19 cents per text
Sweden	149 SMS (Approx) Per Subscriber Per Month	14 cents per text
Pakistan	128 SMS (Approx) Per Subscriber Per Month	0.32 cents per text
World Average	105 SMS (Approx) Per Subscriber Per Month	7 cents per text

Table1: India:1-4 cents per SMS. China: 2 cents per SMS

Philippines:

Filipinos claim that the Philippines is the “texting capital of the world. They generate around 10% of the world’s total SMS volume, i.e. around 1.39 billion SMS messages were being sent every day in the Philippines in Y2009. Mobile operators here were reported to be generating the highest proportion of non-voice revenues in the world. Analysts estimate that texting exceeded voice traffic by a factor of 10 to 1 back in 2005

Filipinos have found interesting uses for the Short Message Service (SMS) feature of their mobile phones in their social, economic and political lives. For instance, in January 2001, Joseph Estrada was forced to resign from the post of president of the Philippines. The popular campaign against him was widely reported to have been co-ordinate with SMS chain letters.

National Telecommunications Commission, the industry’s regulator, shows that by the year 2005, the 41 million mobile phone users sent an average of 250 million text messages per day or an average of 6 messages per person each day, that makes 183 messages per person per month during the Y2005.

SMS growth is as follows:-

- 2001 PH Text Messaging: Approximately 23.4 Billion messages
- 2002 Ph Text Messaging: Approximately 36.0 Billion messages
- 2005 PH Text Messaging: Approximately 90.0 Billion messages
- 2008 PH Text Messaging: Approximately 500.4 Billion messages
- 2009 PH Text Messaging: Approximately 720.0 Billion messages

In the year 2009, Total Two Billion SMS were recorded per day which makes 720 Billion SMS in Y2009 against a population of 72 million subscribers.

That is, from Y2005 to Y2009, SMS count grew from 0.25 Billion to 2 Billion per day, that makes approximately 834 texts per head per month. Whereas Filipinos were reported to be sending 1.39 billion SMS messages every day in 2008.³

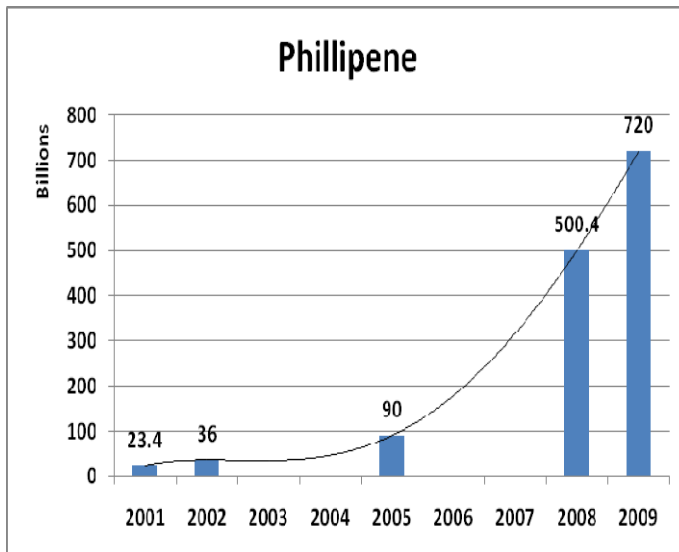


Fig:3

Filipinos are the Texting Capital of the world, and generate around 10% of the world’s total SMS volume.

Here texting exceeded voice traffic by a factor of 10 to 1 back in 2005

USA:

According to a survey released by the mobile industry's trade association [CTIA](#), In the month of Dec 2009, 152.7 Billion text messages were sent making 4.9 billion SMS messages being sent daily in this **month**, which is also nearly twice as many as sent during the same time period last year in the festive season. About 75 billion SMS text messages were sent in the month of June 2008, averaging about 2.5 billion messages a day during this month, the report said. This represents an increase of 160 percent over the 28.8 billion messages reported for the month of June 2007.

Total no of subscribers were 285.6M in Dec 2009, therefore the total number of text messages per person in December 2009 were 535 text messages.

According to William Dudley, Mobile Data and Messaging, Mobile Industry.

- 2007 USA Text Messaging: Approximately 360 billion messages
- 2008 USA Text Messaging: Approximately 865 billion messages
- 2009 USA Text Messaging: Approximately 1.6 – 1.7 Trillion messages.

According to this count, 4.4 Billion SMS per day have been exchanged in Y2009, which gives an average of 464 SMS per month per subscriber.

According to one prediction by a consultant group, SMS will grow to between 2.0 trillion to 2.25 trillion messages in the USA in 2010.

The price of sending and receiving individual text messages has seen a rise of 100 percent over the past two three years in USA, Despite a 100 percent price increase over the past couple of years, SMS text messaging usage is exploding in the U.S.

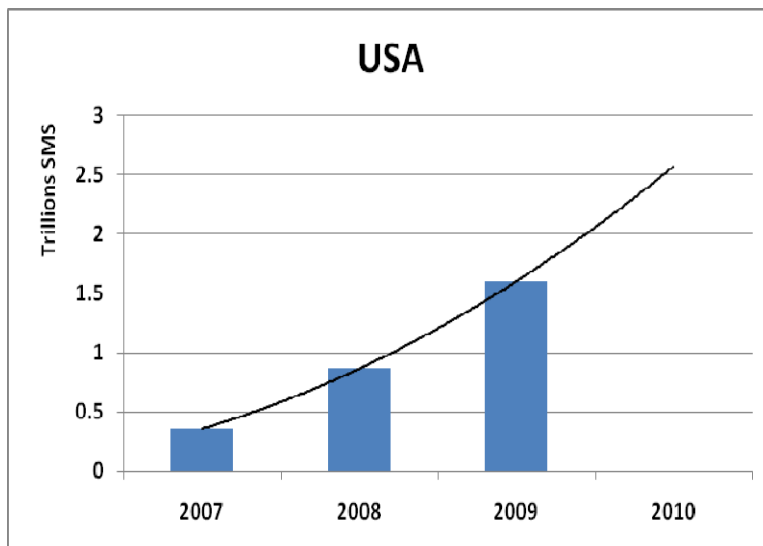


Fig 4.

According to one prediction by a consultant group, ”

SMS will grow to between 2.0 trillion to 2.25 trillion messages in the USA in 2010.”

The price of each SMS has seen a rise of 100 percent over the past two three years in USA. Despite this rise , SMS is exploding in USA

United Kingdom

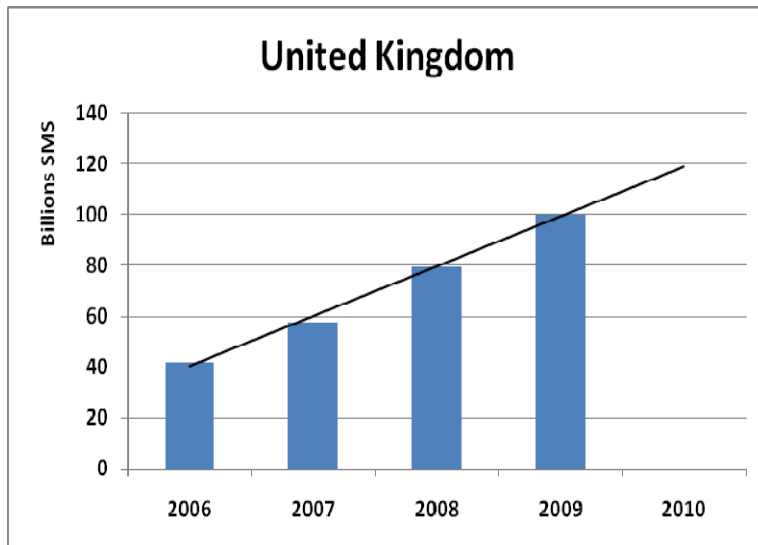
OFCOM says, with more than 100 billion text messages sent in the UK during 2009 – equivalent to 1700 texts per person, or 142 texts per subscriber per month.

The Mobile Data Association (MDA, London) has announced in its quarterly report on mobile phone usage in the UK on 13th February 2009.

Total number of text messages (SMS) sent in:

- 2009 UK Text Messaging: Approximately 100 Billion messages
- 2008 UK Text Messaging: Approximately 79.5 Billion messages
- 2007 UK Text Messaging: Approximately 57.4 Billion messages
- 2006 UK Text Messaging: Approximately 42.1 Billion messages⁹

So the Average number of text messages sent per person in the Y2008 were 1,223 by 65 million active UK mobile devices.



OFCOM says,

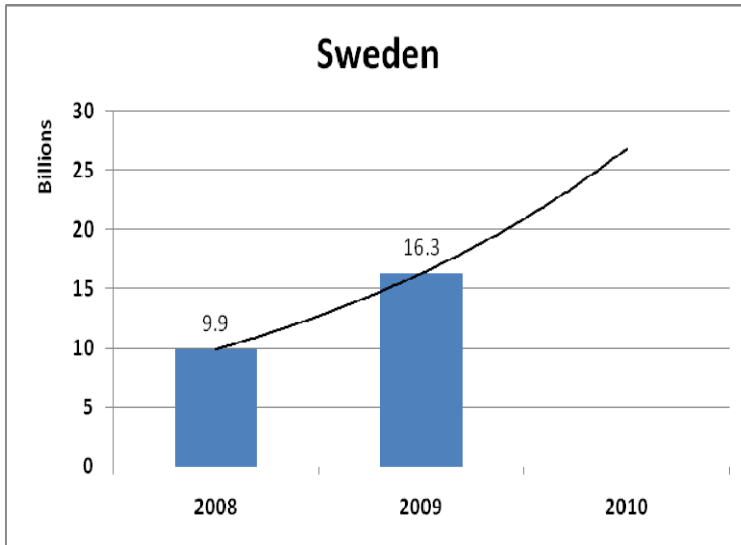
“More than 100 billion text messages sent in the UK during 2009”

Fig5

Sweden

Sweden tops the world in mobile phone penetration with 91 percent owning cellphones against an average of 81 percent for the European Union. There were a total of 9.14 million subscribers in Y2009. Sweden's population is 9.34 million. The number of text messages boomed from 9.9 billion in 2008 to 16.3 billion last year, that is about 1,783 messages per client in the Y2009. Phone calls fell from 14.2 billion to 13.8 billion over the period. This hike in SMS was due to two reasons: cheaper rates for text messages and free SMS services offered by some operators in Sweden.

Total number of text messages (SMS) sent in:
 2008 SE Text Messaging: Approximately 9.9 Billion
 2009 SE Text Messaging: Approximately 16.3 Billion



Sweden tops the world in mobile phone penetration with 91 percent owning cell phones. Phone calls fell from 14.2 billion to 13.8 billion over this period due to hike in SMS.

Fig 6:

Pakistan:

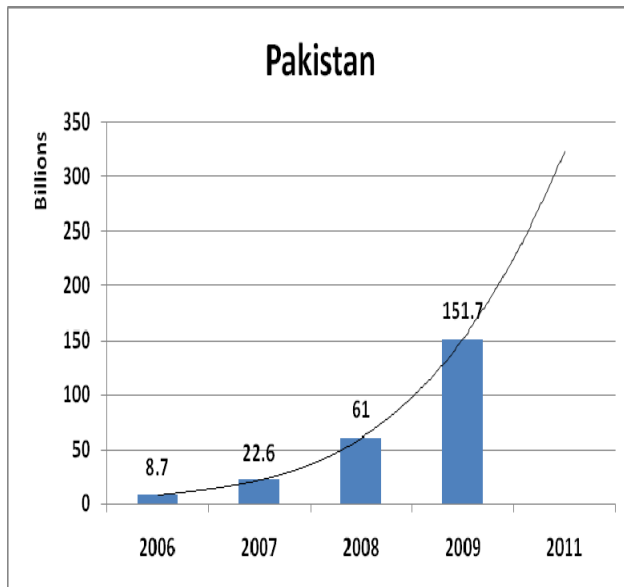
Pakistan-Traffic in Y2009 (Approximate)	
Total SMS in Year-2009	151.6385 Billion*
Total SMS per Month	18.6 Billion
Total SMS per Day	621.2 Million
Total SMS per Second	7190 SMS
SMS per Subscriber per Month	128 SMS
SMS per Subscriber per day	4 SMS

* (PTA- EA)

SMS traffic increased by 149% from 2008 to 2009.

- 2006 PK Messaging: Approximately 8.7 Billion messages :
- 2007 PK Messaging: Approximately 22.6 Billion messages
- 2008 PK Messaging: Approximately 61 Billion messages
- 2009 PK Messaging: Approximately 151.7 Billion messages

Therefore in the year 2009, 128 messages per head per month were sent , against the subscriber base of 99 Million. The detailed analysis of the SMS traffic by five cellular operators in discussed in the trailing section.



In the Y2008/09, Pakistan had the largest text messaging growth in Asia Pacific.

In Pakistan, 151.6385 Billion text messages were exchanged during the Y2009, generating a revenue of Rs 40.76 billion.

Fig 7

As seen in the figure, the traffic growth is tremendous between the Y2008 and Y2009 and expected to grow with the same rate in the upcoming years, due to its low cost as compared to voice tariffs and bundle packages are being offered by the operators.

Cost Analysis:

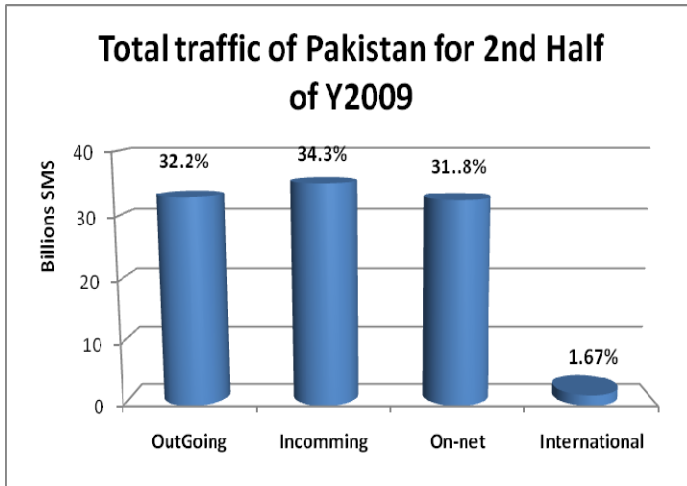
The SMS traffic is exchanged at a rate of 27 Paisa (Rs. 027) per SMS in the year 2009. All the operators have offered very attractive SMS-bundle packages. Approximately 80% of the total SMS traffic is exchanged over bundle packages and rest 20% on flat rate of Rs.1/sms. An average bundled package of 700-SMS/ Month is approximately for Rs. 60. According to these two rates, the revenue for SMS-traffic is calculated to be approximately 40.76 Billion.

Total SMS in Y2009	Revenue of SMS on Flat rate (1 RS)/SMS (Approx) in Rupees	Revenue of SMS on bundled Rate (Rs. 0.086/SMS)	Total Revenue from SMS traffic (Approx) in Rupees.	Average Rate per SMS (Approx) in Rupees.
	20% of Total SMS	80% of Total SMS		
151.6385 Billion	30.3277 Billion	10.4327288 Billion	40.7604288 Billion	27 Paisa

Note: Bundle Rate is 700 SMS for Rs 60. That makes 8.6 paisa per SMS & Flat Rate is Rs. 1 Per SMS

Analysis of SMS traffic in Pakistan in 2nd Half-Y2009.

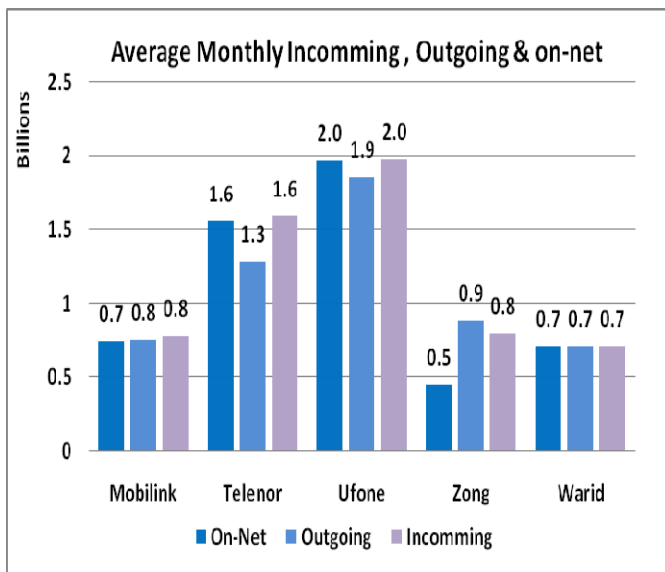
Total on-net, off-net and International traffic of Pakistan can be seen in the following graph.



The difference of about 2.1% between the Outgoing and Incoming may be due to factors like the error due to approximation of data or a delta error in counting etc.

Fig 8: Note1: Warid’s data has been extracted from the traffic of all other operators to warid.
 Note2: Ufone data has been approximated from the provided data .
 Note3: Ufone , Mobilink and Warid have not provided their incoming Int'l SMS count. Their traffic has been approximated.

The graph above shows the total sms traffic scenario of Pakistan during the 2H-2009. Ideally the national outgoing traffic should balance out the total Incoming traffic of the total network of the country but this difference of about 2.1% may be due to many factors like the error due to approximation of data or a delta error in counting etc. The on-net traffic is less than the off-net traffic and this trend is observed in all five operators.



Telenor has quite high On-net traffic than the Off-net traffic and on the other hand Zong has quite high Off-net than On-net sms traffic

Fig 9: Note1: This dose not include international traffic of each operator.
 Note *
 Note**

INTERNATIONAL TRAFFIC

Telenor interestingly has its International Outgoing not more than 10 % of its International Incoming sms i.e. Telenor receives quite handsome number of SMS from the external world. In case of Zong also, it has more an International Incoming than International Outgoing traffic. Its

outgoing traffic is around **85%** of the international incoming traffic. Warid's international outgoing as well as incoming data, and Mobilink international incoming data has not been provided.

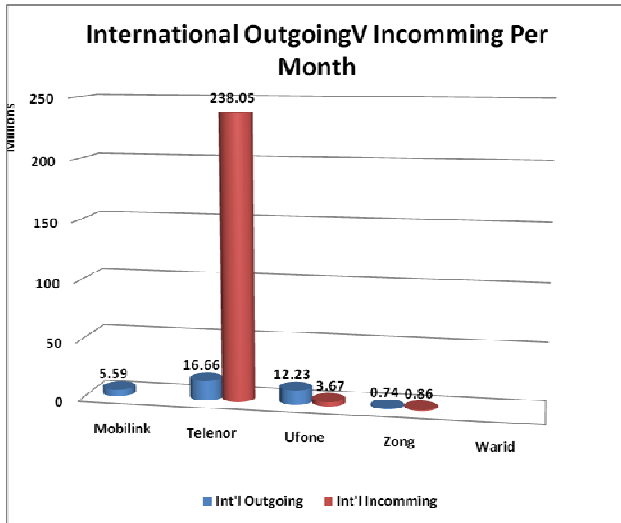


Fig 10: Note***

Month wise analysis of SMS traffic Of Pakistan (2nd H-Y2009)

The month wise growth can be seen in the graph. The month wise analysis has been performed on the traffic of the 2nd Half of 2009.

During this year, month of December showed quite high traffic trend, because the festival of Eid-ul-Azha fell in the month of December and also due to new Year night.

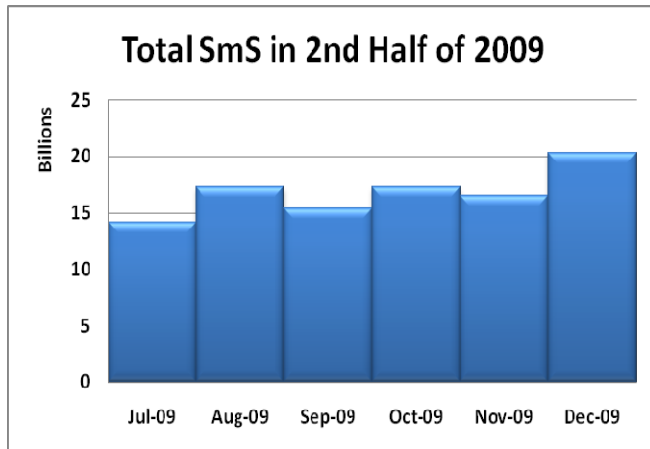


Fig 11:

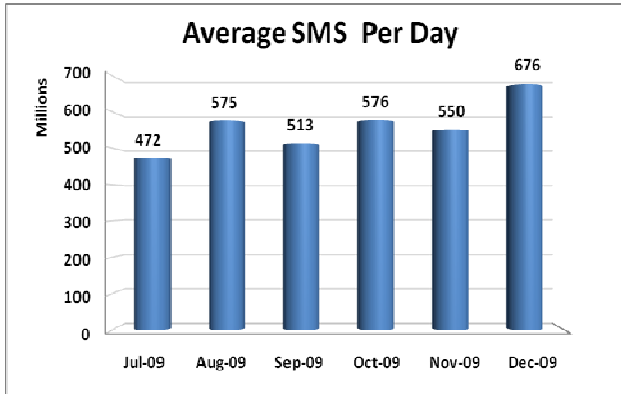
According to PCWorld,

Pakistan was the fifth among the top five countries with the highest SMS traffic during festive season. In the Y2008/09, Pakistan had the largest text messaging growth in Asia Pacific

'In the Y2008/09, Pakistan had the largest text messaging growth in Asia Pacific. With Pakistan's 763 million messages sent during the "festive seasons", the top five countries with the highest SMS traffic processed over the festive season were the Philippines, again leading the ranking with 2.36 billion messages, closely followed by Indonesia (1.193 billion), Malaysia (1.075 billion) and Pakistan (763 million). In terms of year-on-year growth, Pakistan SMS Text traffic volume grew by 253 percent

compared to last year during the same period. Other markets that experienced high messaging growth include Philippines (65 percent), Australia (57 percent), Indonesia (27 percent) and Malaysia (13 percent)' (PCWorld)

SMS per Day : An average of 621.2Million SMS were exchanged each day during the Y2009.



An average of 621.2Million SMS exchanged each day.

Fig 12:

Month wise comparison of Total Incoming, outgoing and International SMS Traffic of Pakistan

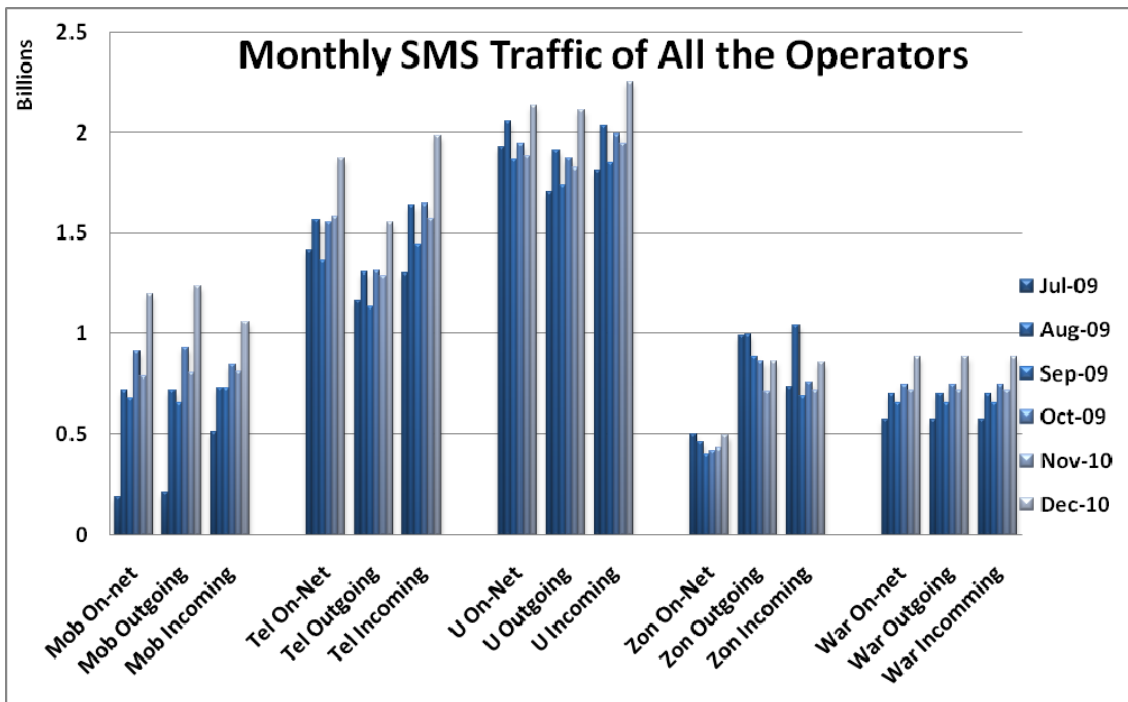
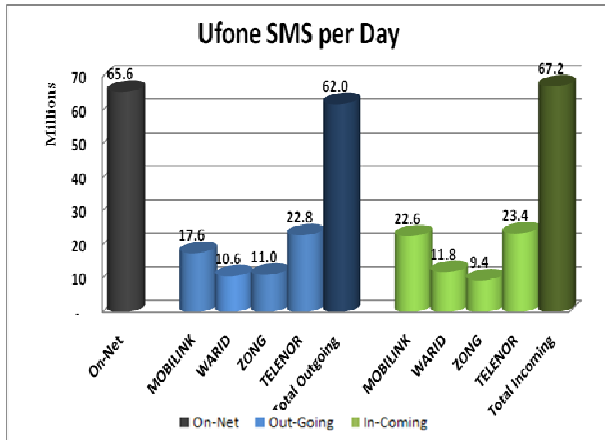


Fig 13: Note*
Note**

Zong and Mobilink has more outgoing traffic than the incoming traffic. Ufone has the highest SMS traffic on the network. The out and incoming traffic of Mobilink is almost balanced in each month respectively. Telenor has quite high incoming than its outgoing. Following is the dissection of the traffic of all the operators network.

UFONE

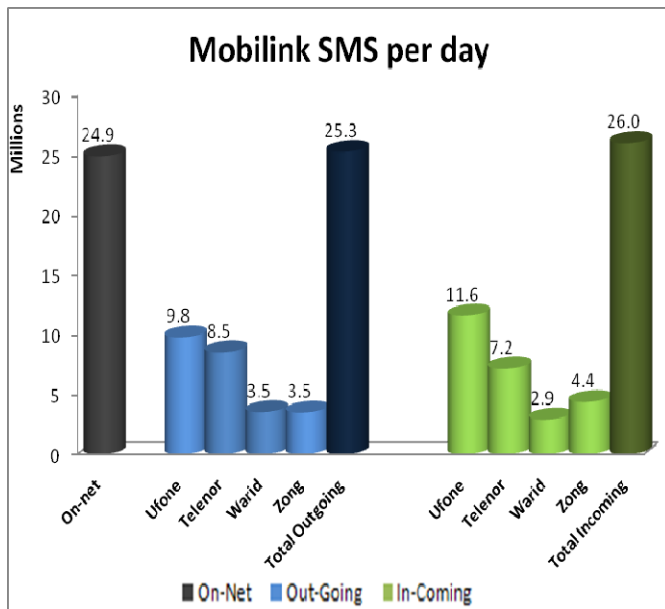


The Ufone incoming traffic has been approximated.

Fig 13: Note

Ufone provided the incoming data for 8 days(June), This 8 days traffic has been approximated to a month traffic.

Mobilink

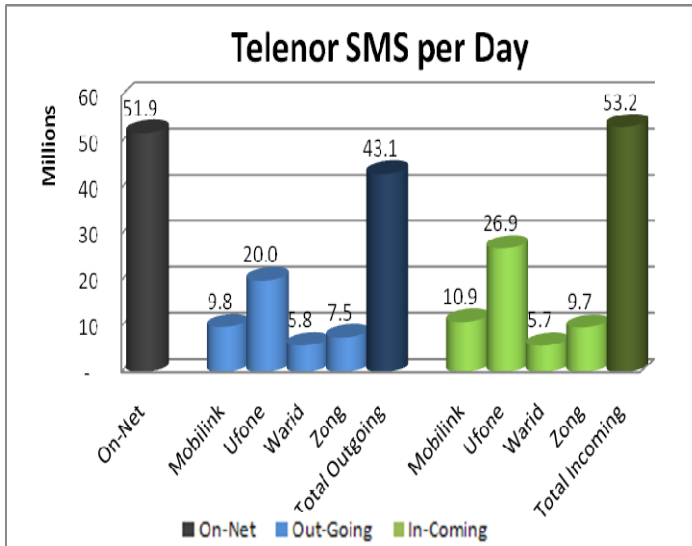


Mobilink has highest difference in exchange of traffic with Ufone. It receives more traffic from ufone than is sending.

Fig 14:

According to Mobilink, it has highest difference in exchange of traffic with Ufone. Incoming traffic from Ufone is more than the sent traffic. Similarly its receiving more SMS messages from Zong than the sent messages. Whereas its sending more messages to Telenor and Warid.

Telenor

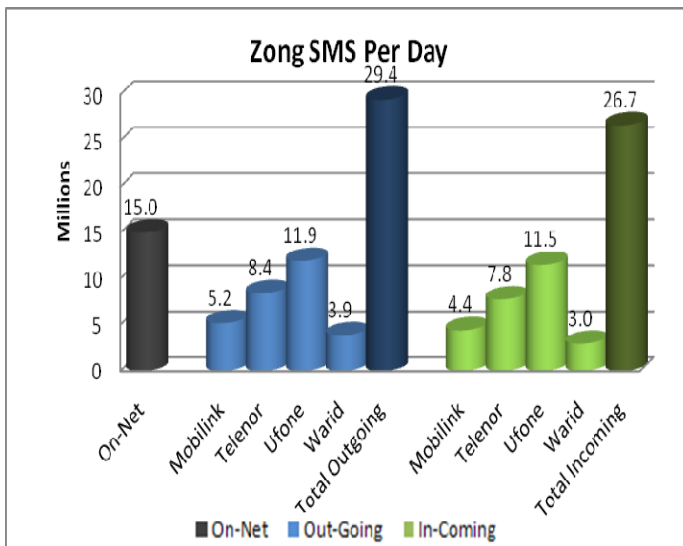


Telenor receives more sms from alloverNetworks, except warid, than its sending.

Fig 15:

Ufone SMS traffic is the highest landing traffic at the Telenor network. Zong is also sending more traffic to Telenor than is receiving from it. It is interesting to note here that the incoming traffic to telenor from all other networks, except warid, is more than its outgoing to all the networks.

Zong



Zong is sending more SMS to all the operators than receiving.

Fig 16:

Zong is sending more SMS to all the operators than receiving. The difference in exchange of traffic is highest with Warid, followed by Mobilink then Telenor and Ufone.

Conclusion:

Round the Globe SMS has progressively become a major application to drive the development of the mobile data market, and the mobile operators are streaming in quite handsome revenues varying up to 30% from SMS traffic. But to sustain growth over the next few years, the operators should put more emphasis on the social-networking applications lucrative flat rate promotions, enhanced WAP applications, introducing innovative push, pull and commerce features, utilization of location based services, introduction of very liberal third party, also working where possible with popular established social-networking sites etc to drive SMS traffic.

Advertising seems to have attractive potential driver for SMS traffic, and it demands the operators to support the end-to-end campaign management and reporting requirements of media buyers and advertisers.

Our country, despite its low income, seems to be most ready for 3G and other broadband applications because of its subscriber's agility and adeptness in using their mobile phones for data applications. Some experts foresee the texting (160 character message) to die out with coming of 3G but Yet, unless costs of service and handsets go down, texting, up to some extent will remain the main mode of communication for many Pakistanis.

Note *: Warid has not provided its data. Its data has been extracted from the traffic of all other operators to warid, and its on-net traffic is approximated through the data trends.

Note **: Ufone provided the data for 8 days (june09). The data has been approximated from the provided data .

Note * :** Ufone , Mobilink have not provided their incoming Int'l SMS count. Warid Int'l Outgo as well as Incoming traffic data is missing. Ufone's international incoming has been approximated through the available ratio of Int'l out to Incoming traffic.

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 8. www.regulateonline.org/component/option.com_docman/task.doc_download/gid,3/
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