A Comparative Analysis of Quality of Service (QoS) Offered by Service Organizations

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Abstract

The service industry has been trying to offer quality service in the country, especially the Telecom industry in general, and the mobile sector in particular. There has been astonishing growth in terms of subscriber base and mobile tele-density in the last a few years, and because of this remarkable growth in the industry, it has become an interesting area of study. However, in the upcoming a few years, the market can reach to its saturation stage, where there can be a very little or no increase in the subscriber base. This situation can be become the biggest challenge for the cellular operators. Only the operators, offering better quality of service to their customers, can be able to ensure profitability. A comparative analysis of cellular quality of service, with the help of some of the most important physical indicators, was performed in order to rank different mobile operators.

Key words: *quality of service, telecom industry, self-assessment, comparative analysis, profitability*

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Introduction

In service industry, among the most emerging and vibrant organizations happened to be the telecom organizations, especially the telecom industry has been building up the cellular networks that can be rated basing on the quality of service (QoS), offered to their customers. Customer service is a system of activities that comprise customer support systems, complaint processing, speed of complaint processing, ease of reporting complaint and friendliness when reporting complaint. Customer services are the opportunities for telecom service providers that are added to mobile network other than voice services, in which, contents are either self-produced by service provider or provided through strategic compliance with service provider. The improved customer services are the focal point of the telecom service providers for social as well as for economic reasons. From a social point of view, services should be available to the customers on reasonable terms. As far as economic factor is concerned, services should satisfy the needs of the customers. Customer satisfaction makes the customers loyal to one telecommunication service provider. Previous researchers have found that satisfaction of the customers can help the brands to build long and profitable relationships with their customers. Though it is costly to generate satisfied and loyal customers but that would prove profitable in a long run for a firm. Therefore, a firm should concentrate on the improvement of service quality and charge appropriate and fair price, in order to satisfy their customers, which would ultimately help the firm to retain its customers

Value added service is a popular term that is used in telecommunication industry for non-core services. However, it can be used in any service industry, for services available at little or no

cost, to promote their primary business. Growth of value added mobile services under different scenarios of industry evolution reveals, that deployment of new value-added mobile services has had mixed results in terms of adoption rates and revenue generation, despite the fact that mobile operators rely on such services for future growth, in view of saturated markets for the basic voice service.[1] Value added services help in product differentiation and, hence, are a major contributor towards the performance of cellular operators. The service work order consists of work order service lines, delivery lines and appointments that had to be taken for the work order. The key difference between the service work order and other value-added services is that the services associated with a service work order are usually supplied to the customer at the customer's location, while value-added services are usually performed at the warehouse or other assembly location. Although they differ in this way, many businesses treat provided services as a work order that can either be done by the seller or can be performed by a third party.

Indian Telecom Regulatory Institution (TRAI) conducted a survey of Mumbai metro on the basis of lot of customer complaints. It can be noticed that Churn management as a phenomenon existing in the service organizations especially the telecom organizations, and the Ufone and Telenor, are leading companies in this field.[2] The tendency for customers to switch from one

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[1]Arif sargana et. al., "PTA Annual Report 2004-05," Pakistan Communication Authority (PTA) : ISBN:969-8667-43-1 & 969-8667-44-X Emerald Insight, Retrieved on March 8,2007, http://www.emeraldinsight.com.

[2]"Indicators of Telecom Growth," *Telecom Regulatory Authority of India*2 (2005), http://www.trai.gov.in/StudyPapers_list_year.asp.

competing service provider to another is called *churn*. Churn management identifies valuable customers in your company, who are likely to churn and execute proactive as well as reactive actions to prevent them from churning.

The companies also made competitive strategies to capture more and more customers' response through providing a sort of competitive advantage to the end users through multiple SIMs. It has become necessary for the survival of the firms that they keep themselves ahead of the competitors, by continuously differentiating their service offerings. It was found that all the operators were not providing the adequate coverage and services in the area.[3] This refers to the relatively exaggerated claims made by the companies regarding their customer base. Globalization of the world markets, technological advancements, and increased economic cooperation are compelling companies to be more sophisticated and savvy in their market efforts. With so many changes occurring in Pakistan telecom sector, including market expansion, the intensification of competition, and increasing sensitivity of the consumers, the issue of service quality has gained substantial consideration. There is growing proof that how customer's behavioral intentions are affected by their perception of service quality. Another major reason is the phenomenon of multiple SIMs in the use of one person.[4] Managers are increasingly facing tremendous pressures to improve service quality, by every

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[3]Jahanzeb, Sadia; Jabeen, Sidrah, "Churn Management in Telecom Industry of   *Pakistan"*, The Journal of Database Marketing & Customer Strategy Management, (2007), 14 (2), 120-129.
[4]Martin Garner (April 2007), *Multiple SIMs per user compared to market penetration*, http://www.wirelessintelligence.com.

means, so that not only existing customers remain loyal but also new customers become permanent customers.

The study, titled 'Service Quality in a Cellular Telecommunications Company: a South African Experience', deals with the measurement of service quality at cellular retail outlets in the South African environment.[5] Fulfilling customer needs every time, on time, is the key to achieving the sustainable competitive advantage and service quality is a tool that companies use to meet its objective. While many companies recognize the need for higher service quality, unfortunately not all of them use service quality as a tool for bettering its performance and to attain competitive advantage. The operators were instructed to increase their number of cell sites and also to acquire additional spectrum. Both of these actions require additional Capex. Significant investment and efforts are required to raise barriers preventing imitation by competitors, would ensure sustainability of the competitive advantage. Even if the business has achieved the competitive advantage and gained higher profitability, competitors are quick to imitate their strategies or even enhance their initiatives. It can be concluded that to provide better QoS, additional Capex is the basic requirement.[6] This can be concluded that offering better quality of services to the customers is a key towards retaining customers, which in turn, ensures the profitability of the operator.[7]

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[5]Van der Wal R.W.E., et. al., *"Service Quality in a Cellular Telecommunications Company: a South African Experience",* Managing Service Quality, 12 (2002): 323-335.

[6]"QoS of Cellular Mobile Services in Mumbai Metro Circle" (2005), Telecom Regulatory Authority of India.

[7]Muhammad Asif Khan., "An Empirical Assessment of Service Quality of Cellular Mobile Telephone Operators in Pakistan", Asian social

Pakistan Telecommunication Authority (PTA), a regulating body, indicated that Pakistan has experienced more than 150% continuous growth rate for years 2003-04 to 2005-06. Mobile penetration has increased from 1.6% in 2003 to 58.2% in 2009; cellular tele-density has improved from 8.3% in 2005 to over 58.2 in 2009; the mobile phone subscribers have grown from .06 million in 1995 to over 98 million in 2009; and the number of cellular franchises have increased from 618 in 2003 to 1748 in 2009. Pakistan cell phone market has potential to grow.[8] The World Economic Forum (2010) initiates report about Network Readiness Index based on the essential factors that highlights the factors facilitating ICT readiness. The report for 2010 ranked Pakistan at 87 positions out of 133 countries. Some of the important indicators of the network quality are mobile network usage, network quality perception (coverage, call connectivity, network availability, Voice quality, tariffs, and customer services), market leadership, network loyalty and network switching tendency. Primary data was collected to compare cellular operators of Pakistan on the basis of offered network quality. Presently, six operators are competing in cell phone market in Pakistan. Because of enormous potential of the market; the contribution it makes to the national exchequer, and the protection of customer rights, the study of perceived quality of service from customers' perspective becomes imperative. The

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[8]World Economic Forum. (2010). The global information technology report 2009-2010.The Networked
Readiness   Index   2009-10   Rankings.   [Online]   Available:
http://www.weforum.org/documents/GITRI0/ index.html   (May   15,
2010).

existing surveys of quality of service conducted by PTA primarily focus on technical aspects of quality, about which customer has no experience and detailed knowledge. PTA surveys are based on the quality of service parameters, which include network accessibility, service accessibility, access delay, voice quality, and short message service (PTA, 2009).

Theoretical Considerations

Cellular industry started in Pakistan in early 1990's. Like other 3rd world countries, mobile technology was a late entrant in Pakistan as the industry was much more matured in the US and Europe by that time. However, from there it has emerged manifold in an exponential way. Research topic is all about the current physical performance of the industry and its future shape. In order to achieve this target, quality of service being offered in other countries of interest including developed countries of the world and the some countries of South East Asia were observed. Customer satisfaction has been a subject of great interest, to organizations and researchers alike. The principal objective of organizations is to maximise profits and to minimise cost. Profit maximisation can be achieved through increase in sales with lesser costs. One of the factors that can help to increase sales is customer satisfaction, because satisfaction leads to customer loyalty.

The focus is on perception and expectation of service quality from the customer's perspective. Research reveals that delivering high quality service is closely linked to profits, cost savings, and market share in many industries. Customers are always aiming to get maximum satisfaction from the products or services that they buy. Winning in today's market place entails the need to build customer relationship and not just building the products; building

customer relationship means delivering superior value over competitors to the target customers. This research also explains the importance of customer feedback to improve the internal processes. On similar lines, primary data was collected to get the customer feedback for the services being offered by the current operators. Primary data was analyzed to find out the ways to improve customer perception.

Attributes of the market leadership were also determined as a result of this exercise. It is really essential for operators to ensure an acceptable level of network quality in order to secure their subscriber base and to ensure profitability. It is also a role of regulatory body to ensure an acceptable level of service, being offered by the mobile operators.

Research Methodology

The two telecommunication service providers selected for this study are Telenor and Ufone. Analysis reveals that subscribers' dissatisfaction with any dimension of price, voice quality and network coverage are the main reasons for customer churn at both Ufone and Telenor. Ufone has, however, adopted comparatively better churn management strategies than Telenor to retain its customers. These findings are really helpful for the cellular operators in order to improve their performance.

The methodology of this study includes some assumptions and values, which serve as rationale (underlying reasons) for efforts of research and standard criteria for the whole process. The basic purpose of this study was to measure important physical indicators of cellular industry of Pakistan.

Population

The population under study was the current cellular subscriber base in Pakistan. Since the size of population is in millions, the sample size was taken for 500 samples. Majority of these samples were taken from Rawalpindi and Islamabad. Random Stratified Sampling technique was used for the primary data collection. In order to realize the objectives of the study, a survey study was carried out. Two questionnaires were designed for gathering the required information as research instrument.

Data Analysis

The researcher analyzed the primary data obtained from cellular subscribers. This data was collected with the help of questionnaires, which were designed for this study. Two questionnaires were designed in order to get two different sets of information. Following tables give an insight about the collected primary data.

Table -1: Gender Description of the Respondents

	Questionnaire-1	Questionnaire-2	Total
Sample size	200	300	500
No of Male Respondents	179	295	474
No of Female Respondents	21	5	26
%age of Male Respondents	90%	98%	95%
%age of Female Respondents	11%	2%	5%

As is evident from the Table-1 that majority of the respondents were male i.e. 95% of the total sample size and only 5% were female. This percentage shows that majority of the work force comprises male employees.

Table -2: Education Qualification of the Respondents

	Questionnaire1	Questionnaire 2	Total
Sample size	200	300	500
Masters	82	5	87
Graduates	100	24	124
Intermediate	10	38	48
Matric	7	115	122
Under-Matric	1	106	107
No education	0	12	12
%age of Masters	40%	2%	21%
%age of Graduates	50%	8%	29%
% of Intermediates	5%	13%	9%
% of Matric	4%	38%	21%
% of Under Matric	1%	35%	18%
% of non-educated	0%	4%	2%

The results of the Table-2 provide an insight about the education qualification of the respondents. Qualification %age is different for both the questionnaires. This is because of the fact that Questionnaire-1 was designed for qualified respondents and Questionnaire-2 was designed for low income respondents, who mostly are less-educated. In totality, 21% of the respondents were Masters, 29% were Graduates, 21% were Matric and around 20% were less than Matric.

Following important physical indicators of QoS were determined as a result of this exercise of primary data collection.

Network Usage/Coverage

According to the primary data collected in Q2 2007, the %age of no of connections being used by the sample population is as under.

Table-3: Cellular Operators Percentage

Cellular Operator	Mobilink	Ufone	Warid	Telenor	Insta	Paktel	Total
Current Network Usage Trend	343	180	135	126	6	15	805
Current Network Usage Trend (%)	42.9%	22.5%	16.8%	14.9%	0.7%	1.8%	100%
Market Share claimed (PTA May 07)	42.4%	21.9%	16.9%	16.6%	0.5%	1.7%	100%
Difference	-0.5%	-0.6%	0.1%	+1.7%	-0.2%	-0.1%	0%

The researcher compared the primary data with the secondary data claimed by the operators (as reported by PTA indicators and is available on PTA web-site). It was found that there was a small variation in almost all the cases. This variation can be attributed to small size of sample and can be reduced with further increase in the sample size.

As far as the number of mobile connections actually in use is concerned, there is a huge variation in the numbers claimed by the operators' versus the actual in use. One reason is because of the SIMs, which are in circulation/distribution channel and are not reached to the end customer and end user hasn't yet started using these. This refers to the relatively exaggerated claims made by the companies regarding their customer base. Another major reason is the phenomenon of multiple SIMs in the use of one person. This phenomenon is not a local phenomenon and it is happening almost

everywhere around the globe. However, this phenomenon is much more significant in Pakistan as the mobile operators have given waiver to the new connection charges. If we re-calculate the market penetration (in terms of actual users) in Pakistan, using this approach, we come to a value quite lower.

Network Quality

As part of the primary data collection, input was sought regarding the quality of the service for different operators in the form of a table mentioned below. Each customer was asked to provide input about the different attributes of the quality of different networks based on his own personal experience. In case, a user didn't had a personal experience, he was asked to provide the input based on the feedback (word of mouth) he got from the other users, regarding the Quality of Service for a particular operator. On the basis of these inputs, QoS ranking of different mobile operators was done. A sample table with data filled in and the overall rating given is shown below:-

Table-4: Network Quality

Service	Mobilink	Ufone	Warid	Telenor	Instaphone	Paktel
Connectivity	X					
Coverage		X				
Network Availability/stability			X			
Voice Quality				X		
Low Tariff/Call charges			X			
Customer Services	X					
Overall Rating	2/6	1/6	2/6	1/6	0	0

Since there were total 6 attributes, overall rating was given based on total number of ticks given to an operator divided by 6. Data for 200 customers was obtained. Since this was quite technical information, the data was collected in the form of a personal interview where the customer was first educated what did each filed mean. The data was processed in order to get the final outcome, which is shown in the following table and graph:

Table-5: Network Quality

	Mobilink	**Ufone**	**Warid**	**Telenor**	**Insta**	**Paktel**	**Total**
Vote for Network Quality (No of Votes)	462	247	257	215	1	12	1193
Vote for Network Quality (%age of Votes)	39%	21%	22%	18%	0%	1%	100%

Seeing the results, it is obvious that Mobilink is on the top in terms of quality perception in the eyes of the customer. However, Ufone, Warid and Telenor are having almost equal weightage. This input can help operators in order to improve their network quality, which can ultimately help them in terms of increased customer retention and loyalty for their connections. It also indicates that both Paktel and Insta-phone are almost out of business, as they are not providing an acceptable level of Quality of Service (QoS), which is required to remain in the business.

Market Leadership Forecast

The interviewees were asked about their perception about the name of the operator, which they foresee to be the market leader in next 5 years time and why? This response was collected for a sample

of 200 people. Data was processed and the results are shown below in the form of a table and a graph:-

Table-6: Market Leadership Forecast

	Mobilink	Ufone	Warid	Telenor	Insta	Paktel	Total
Vote ranking for Market Leader (No of Respondents)	60	32	54	54	1	2	203
Vote ranking for Market Leader (%age of Respondents)	30%	16%	27%	27%	0%	1%	100%

As per the customer perception obtained through primary data, people are speaking very high about Mobilink. Telenor and Warid are equally ranked as 2nd favourite. Unfortunately, people have relatively bad perception about Ufone and it is ranked as 3rd. This gives operators a fruit for thought, why their networks are rated like this.

Discussions and Key Finding

In one of the questions, interviewees were asked about the reasons for their selection of a particular operator as a market leader. As a result of this question, the users provided their vision about the 'market leader'. This input has been summarized in the below-mentioned ten points:

a. Better quality of service, connectivity, best indoor and outdoor coverage across the network, voice quality, network availability and stability

b. Aggressive, fast and continuous expansion/enhancement in the network

c. Sound financial position, being a multi-national

d. Low, attractive Tariff Packages both for voice and SMS with no hidden charges

e. Excellent, strong and innovative marketing/advertising

f. New technology developments, new value added services, easy-load facility

g. Having its own inter-city fibre-optic media backbone

h. Having the best customer services, customer focused, error-free billing

i. Professional, fair and honest management, process based organized approach

j. Company having biggest network, customer base at the moment is most likely to remain the leader, as it is not easy to change the market dynamics quickly

This set of attributes can be taken as a general input by the operators. Any operator who is opting to these attributes will/can be the market leader. It is very clear from this input that having a huge financial and marketing muscle is not the only criterion, which ensures a company's success. The company has to be customer oriented, should understand both the apparent and hidden needs of the customer and should try to meet and exceed the customers' expectations in the shortest possible time.

Network Switching Tendency

Mobile users were inquired about their decision of moving to a new network in case they are not satisfied with the current operator and their front end number remains same. This is a new feature called Mobile Number Portability (MNP) and has recently been launched. The mobile users were first educated about this feature and then were asked about the name of the network

operator they would like to switch and reason(s) behind this move. The results obtained are shown in the table and graph below:

Table-7

	Mobilink	Ufone	Warid	Telenor	Insta	Paktel	Total
Vote ranking for willingness to switch to (No of Respondents)	5	13	43	30	0	1	92
Vote ranking for willingness to switch to (%age of Respondents)	5%	14%	47%	33%	0%	1%	100%

Root Causes of Switching Tendency

As per the mobile users' feedback, the reasons for this switching tendency have been summarized below:-

a. Better quality of service (voice quality, connectivity, stability, coverage and availability)

b. Better customer services, professional Aattitude, customer focus,

c. More economical and innovative packages like 30 second or per second billing, low call and SMS rates

d. Modern technology and value added services

e. Good/error free billing system

f. Good infrastructure

g. Dissatisfaction with the current service provider/operator

These stimulants, which can cause a customer to switch from one operator to another, are very helpful for the operators to work on. They need to address these root-causes to stop or reduce churn.

Network Loyalty Tendency

As a part of primary data collection, the interviewees were asked whether they want to switch from the current operator to others or not. Some answered in 'YES' and the others in 'NO'. About 57% of the users said 'NO', as they were satisfied with the services of the current service provider. The data for these users was processed and is shown in the below- mentioned table and graph:-

Table-8

	Mobilink	Ufone	Warid	Telenor	Insta	Paktel	Total
Vote for network loyalty (No of Respondents)	60	38	20	11	0	1	130
Vote for network loyalty (%age of Respondents)	46.2%	29.2%	15.4%	8.5%	0.0%	0.8%	100%

The results show that the subscribers of Ufone are most satisfied and loyal to their operator. Mobilink was on 2nd, Warid on 3rd and Telenor on 4th rank in terms of network loyalty. This data is also quite helpful for the operators in order to do their self-analysis and take appropriate steps to improve their network loyalty. This can result in reducing churn and can ultimately help to maintain and improve their market share.

With the help of primary data, it became possible to know the customer perspective about the existing quality being offered by Cellular Network Service Providers/Operators. Customers ranked the mobile operators on the basis of the following 5 key indicators. The results are summarized in the table below;-

Table-9

Ranking of Operators	1st	2nd	3rd	4th	5th	6th
Network Usage	Mobilink	Ufone	Warid	Telenor	Insta	Paktel
Network Quality	Mobilink	Warid	Ufone	Telenor	Paktel	Insta
Market Leadership	Mobilink	Warid/ Telenor	Ufone	Paktel	Insta	
Network Switching Tendency	Warid	Telenor	Ufone	Mobilink		
Network Loyalty Tendency	Ufone	Mobilink	Warid	Telenor	Paktel	

From the above table we can conclude that Mobilink is superior to other networks in terms of Network Usage, Network Quality and Market Leadership in the eyes of the customers. Warid is the hot favourite of customers, who want to switch to other networks. Ufone is the one having most loyal customers who are satisfied and don't want to move to other operators.

Recommendations

In this research study, a comparative analysis of quality of service is done to measure the effectiveness of services in relation with customer's satisfaction and loyalty. This research can be used by the mobile operators, for improvement in their services which can lead towards occupying more market space and to obtain competitive advantage. Following recommendations are proffered:-

a. We suggest that better voice quality of services, economic rates and better value added services are the core elements to attain customer loyalty.

b. It is also proved that youth is going to be the favourite segment in the Telecom sector.

c. We also concluded that more customers are concerned with network coverage, network quality and value added services i.e. SMS packages, Night Packages etc.

d. Customer services (customer feedback), Advance technology, ease to use, proper billing methods are necessary for the satisfaction of the customers.

Conclusion

Such surveys are conducted to determine the true needs and thoughts of the customers and are very helpful for the mobile operators to improve their network services performance. Almost all the mobile operators must get such surveys conducted through independent third party contractors. Results of such surveys help to do the comparative analysis of the operators and to know the strengths and weaknesses, opportunities and threats, a company has in a competitive landscape.