Performance of Grameenphone and Robi in Telecom. Sector of Bangladesh: A Comparative Study

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Abstract

The last decade has brought the first wave of the truly mobile generation which is built around mobile phones, short messaging service (SMS), and portable electronic assistants. The mobile communications industry has been one of the most flourishing sectors within the ICT industry and, in general, within the economy. Grameenphone and Robi are the biggest mobile phone operators in our country and their contribution is very great to our economy. The prime objective of the study is to compare the performance between Grameenphone and Robi in the telecommunications sector of Bangladesh. This study is based on the basis of both primary and secondary data. The primary data were collected from relative mobile phone companies' customers from Khulna city. Total 200 customers (100 customers of Grameenphone and 100 customers of Robi) were surveyed through the judgmental sampling method with questionnaire from March to June 2011. The questionnaire consisted of 25 questions. After collection of primary data, hypotheses were formulated and paired samples T-test was used to test the hypotheses with 0.05 level of statistical significance. The statistical computer package SPSS version 16.0 was used to analyze the data. The recommendations were provided based on the findings and analysis.

Key words: Performance, Telecommunications sector, Grameenphone, Robi, Customer satisfaction, Network, Hypotheses.

Introduction

The people of Bangladesh are now dreaming of a digital Bangladesh. Faster development of telecommunications network coupled with improved quality of service in line with the national development is a must for the fulfillment of the vision and aspiration of digital Bangladesh and also to take her to a position of honor in the community of nations in the 21st century. Mobile phone operators have been playing an important role in this regard (Rahman, 2010). The last decade has brought the first wave of the truly mobile generation which is built around mobile phones, short messaging service (SMS), and portable electronic assistants. But now there is strong evidence to suggest that there is an even bigger wave to come driven by the increasing worldwide technological trend towards mobility and technology integration. This is evident through the plans and strategic directions of many of the major players in this field (Mahmud and Chowdhury, 2010).

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The telecommunication services in Bangladesh were provided until 1989 by the state-owned monopoly provider Bangladesh Telegraph and Telephone Board (BTTB), telecommunications services. In 1989, the Government of Bangladesh opened the telecom sector by awarding licenses to two operators; one to operate fixed telephones in rural areas (Bangladesh Rural Telecom Authority); and the other to operate cellular mobile phone and pager (Bangladesh Telecom Ltd-BTL) services. In 1992, Pacific Bangladesh Telecom Limited (PBTL) bought the mobile part of the BTL (Khan 2003). The telecommunications market in Bangladesh, particularly the mobile phone sector consists of six mobile phone operators. These are Grameenphone Limited (GP), Orascom Telecom Bangladesh Limited (Banglalink), Robi Axiata Limited, Airtel Bangladesh Limited, Pacific Bangladesh Telecom Limited (Citycell), and Teletalk Bangladesh Limited (http://www.btrc.gov.bd).

Since its inception Grameenphone has built the largest cellular network in the country with over 13,000 base stations in more than 7000 locations. Presently, nearly 98 percent of the country's population is within the coverage area of the Grameenphone network. Grameenphone has always been a pioneer in introducing new products and services in the local market. GP was the first company to introduce GSM technology in Bangladesh when it launched its services in March 1997. Grameenphone was also the first operator to introduce the pre-paid service in September 1999. It established the first 24-hour Call Center, introduced value-added services such as VMS, SMS, fax and data transmission services, international roaming service, WAP, SMS-based push-pull services, EDGE, personal ring back tone and many other products and services. The entire Grameenphone network is also EDGE/GPRS enabled, allowing access to high-speed Internet and data services from anywhere within the coverage area. There are currently nearly 2.6 million EDGE/GPRS users in the Grameenphone network. Today, Grameenphone is the leading telecommunications service provider in Bangladesh with more than 33 million subscribers as of May 2011 (http://www.grameenphone.com).

The shareholders of Grameenphone contribute their unique, in-depth experience in both telecommunications and development. It is a joint venture enterprise between Telenor (55.8%), the largest telecommunications service provider in Norway with mobile phone operations in 12 other countries, and Grameen Telecom Corporation (34.2%), a non-profit sister concern of the internationally acclaimed micro-credit pioneer Grameen Bank. The other 10% shares belong to general retail and institutional investors (http://www.grameenphone.com).

Robi Axiata Limited is a joint venture company between Axiata Group Berhad, Malaysia and NTT DOCOMO INC, Japan. It was formerly known as Telecom Malaysia International (Bangladesh) which commenced operations in Bangladesh in 1997 with the brand name AKTEL. On 28th March 2010, the service name was rebranded as ‘Robi’ and the company came to be known as Robi Axiata Limited. Robi is truly a people-oriented brand of Bangladesh. Robi, the people's champion, is there for the people of Bangladesh, where they want and the way they want. Having the local tradition at its core, Robi marches ahead with innovation and creativity. To ensure leading-edge technology, Robi draws from the international expertise of Axiata and NTT DOCOMO INC. It supports 2G voice, CAMEL Phase II & III and GPRS/EDGE service with high speed internet connectivity. Its GSM service is based on a robust network architecture and cutting edge technology such as Intelligent Network (IN), which provides peace-of-mind

solutions in terms of voice clarity, extensive nationwide network coverage and multiple global partners for international roaming. It has the widest International Roaming coverage in Bangladesh connecting 600 operators across more than 200 countries. Its customer centric solution includes value added services, quality customer care, easy access call centers, digital network security and flexible tariff rates (http://www.robi.com.bd). Robi Axiata Limited is a Joint Venture company between Axiata Group Berhad (70%) and NTT DOCOMO INC. (30%) (http://www.robi.com.bd).

Objectives of the Study

The prime objective of the study is to compare the performance between Grameenphone and Robi in the telecommunications sector of Bangladesh. The more specific objectives are as follows:

1. To determine the factors that influence consumers to choose a mobile phone operator.
2. To find out different types of facilities that both companies are offering to grasp new customers and to retain the present one.
3. To know about the specific area where subscribers are satisfied or dissatisfied.
4. To find out the level of customer satisfaction towards the services provided by Grameenphone and Robi.
5. To provide some recommendations to increase the performance of Grameenphone and Robi.

Methodology of the Study

The methodology adopted for the current study is presented below in a sequential manner:

Sources of Data: This study is based on both primary and secondary data. Primary data were collected through personal interview with a structured questionnaire and direct observations. Secondary data were collected from the published official statistics, report documents, laws, ordinance, books, articles, periodicals of different domestic and international agencies, annual reports of concerned cell phone operators, ministry of posts & telecommunications, websites etc.

Questionnaire Design: The primary data were collected from relative mobile phone companies' customers from Khulna city. Total 200 customers (100 customers of Robi and 100 customers of Grameenphone) were surveyed through the convenience sampling method with questionnaire from March to June 2011. The questionnaire consisted of 25 questions. The questionnaire was pre-tested (piloted) on a convenience sample of 30 respondents of both cell phone companies from Khulna city. The aim was to check that the issues were pertinent and the questions were clear, understandable, and comprehensible. The layout of some questions was modified and further improvements were done as a result of the pilot study.

Data Analysis Methods: A five-point Likert type scale statements were used to measure the variables where 1 stands for strongly disagreed and 5 stands for strongly agreed effect on the statements (Luthans, 2002). After collection of primary data, hypotheses were formulated and paired samples t-test was used to test the hypotheses with 0.05 level of statistical significance. The statistical computer package SPSS version 16.0 was used to analyze the data.

Hypotheses Formulation: Research hypothesis is an unproven statement, which helps the researcher to draw the suggestion on his hypothetical assumption whether it is true or false based on some specific statistical test (Alam and Neger, 2009). For the convenience of the study the following hypotheses are developed which are to be tested.

Table 1: Developing Hypotheses for Different Factors

Factors	Null hypothesis (H_0)	Alternative hypothesis (H_a)
1. Network Coverage	$\bar{x}_{ncm*}=0$	$\bar{x}_{ncm}\neq 0$
2. Effectiveness of Network	$\bar{x}_{enm}=0$	$\bar{x}_{enm}\neq 0$
3. Low Call Rate	$\bar{x}_{lcrm}=0$	$\bar{x}_{lcrm}\neq 0$
4. Availability of SIM Card	$\bar{x}_{ascm}=0$	$\bar{x}_{ascm}\neq 0$
5. Low Price SIM Card	$\bar{x}_{lpscm}=0$	$\bar{x}_{lpscm}\neq 0$
6. Solution of the Problems Related to SIM Replacement	$\bar{x}_{sprsrm}=0$	$\bar{x}_{sprsrm}\neq 0$
7. Special Offer to the Customers	$\bar{x}_{socm}=0$	$\bar{x}_{socm}\neq 0$
8. Free Talk Time & Bonus Facilities	$\bar{x}_{ftbfm}=0$	$\bar{x}_{ftbfm}\neq 0$
9. Pulse Facility	$\bar{x}_{pfm}=0$	$\bar{x}_{pfm}\neq 0$
10. Availability of Flexi Load/Easy Load Facility	$\bar{x}_{aflelfm}=0$	$\bar{x}_{aflelfm}\neq 0$
11. Friends & Family Number Facility	$\bar{x}_{ffnm}=0$	$\bar{x}_{ffnm}\neq 0$
12. Internet & GPRS Connection	$\bar{x}_{igcm}=0$	$\bar{x}_{igcm}\neq 0$
13. Location of the Service Center	$\bar{x}_{lscm}=0$	$\bar{x}_{lscm}\neq 0$
14. Value Added Services Facilities	$\bar{x}_{vasfm}=0$	$\bar{x}_{vasfm}\neq 0$

*m= Two Mobile Companies (i.e **Grameenphone and Robi)**

Empirical Findings and Analysis

An analysis is generated from the questionnaire to fulfill the objectives of the study. In order to analyze the collected data a 5-point Likert type scale has been used. 5 stands for highly satisfied customers, 4 stands for only satisfied customers, 3 stands for neutral customers, 2 stands for dissatisfied customers, and 1 stands for highly dissatisfied customers. Several judgments are being made from the responses of customers to validate the objectives of the study. The results are presented below:

1. Network Coverage

Network availability is an important factor to the customers. They give more emphasis in this particular point in purchasing the brand.

Table 2: Satisfaction Regarding Network Coverage

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	34	15
Satisfied	4	55	46
Neutral	3	11	29
Dissatisfied	2	0	8
Highly Dissatisfied	1	0	2
Total		**100**	**100**
Mean Value ($\bar{x}$)		**4.23**	**3.64**
Standard Deviation (SD)		**.63333**	**.90476**
Coefficient of Variation (CV)		**14.97**	**24.86**

Source: Field Survey, March-June 2011

From the above table, it is found that 34% respondents of GP are highly satisfied and 55% respondents are satisfied regarding network coverage. On the other hand, 15% respondents of Robi are highly satisfied and 46% respondents are satisfied and 29% respondents showed their neutrality regarding network coverage. Here mean value of GP and Robi respondents regarding network coverage are respectively 4.23 and 3.64 and the coefficient of variation are respectively 14.97 and 24.86, which indicate that GP is in a very strong position than Robi.

2. Effectiveness of Network

When the customers have the information in their hand about the different network facility of the different cell phone operators then they give the priority to buy the connection of that operator which has the best coverage. Customers also give importance on the effectiveness of the network. Table 3 shows that 62% customers are satisfied and 25% customers are highly satisfied about the effectiveness of network of GP. On the other hand, 32% customers were neutral in their opinion towards the effectiveness of network of Robi. Of whom 26% customers were satisfied and 18% customers were highly satisfied. The mean value of customers response towards the effectiveness of network of GP is 4.12, which lies in satisfied category, while mean value of Robi is 3.29 which lies in neutral category of customers opinion.

Table 3: Effectiveness of Network

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	25	18
Satisfied	4	62	26
Neutral	3	13	32
Dissatisfied	2	0	15
Highly Dissatisfied	1	0	9
Total		**100**	**100**
Mean Value ($\bar{x}$)		**4.12**	**3.29**
Standard Deviation (SD)		**.60769**	**1.19168**
Coefficient of Variation (CV)		**14.75**	**36.22**

Source: Field Survey, March-June 2011

The coefficient of variation of GP and Robi are respectively 14.75 and 36.22 which indicate that the opinion of the customers of GP is less deviated than Robi.

3. Call Rate

From the table 4 it is found that 48% respondents of Robi showed their neutrality and 31% and 18% respondents were respectively satisfied and highly satisfied. On the other hand, 73% GP customers are dissatisfied and 15% are highly satisfied towards the call rate.

Table 4: Satisfaction Regarding Call Rate

Options	Value	Frequency	
		Grameenphone	**Robi**
Highly Satisfied	5	0	18
Satisfied	4	0	31
Neutral	3	12	48
Dissatisfied	2	73	3
Highly Dissatisfied	1	15	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**1.97**	**3.64**
Standard Deviation (SD)		**.52136**	**.81054**
Coefficient of Variation (CV)		**26.46**	**22.27**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi respondents are respectively 1.97 and 3.64 indicate that Robi is in strong position than GP regarding call rate. The value of CV of Rabi and GP are 22.27 and 26.46 accordingly. It is observed that the CV of Robi is lower than GP. That means the customers of Robi perceived low call rate than that of GP.

4. Availability of SIM Card

From the table 5 it is found that GP customers enjoy availability of the SIM card. That's why about 47% respondents of GP are in highly satisfied level and 38% are satisfied regarding availability of SIM card. On the other hand, 28% Robi customers were neutral and 31% were satisfied towards availability of SIM card.

Table 5: Availability of SIM Card

Options	Value	Frequency	
		Grameenphone	**Robi**
Highly Satisfied	5	47	15
Satisfied	4	38	31
Neutral	3	15	28
Dissatisfied	2	0	19
Highly Dissatisfied	1	0	7
Total		**100**	**100**
Mean Value ($\bar{x}$)		**4.32**	**3.28**
Standard Deviation (SD)		**.72307**	**1.14662**
Coefficient of Variation (CV)		**16.74**	**34.96**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi respondents regarding availability of the SIM cards are respectively 4.32 and 3.28 and the coefficient of variation are respectively 16.74 and 34.96, indicate that GP is in a strong position than Robi.

5. Low Price SIM Card

Customers always expect that when they will feel the necessity for the SIM card of nay mobile phone operators, at that time they will get the SIM card in low price.
Table 6 shows that 40% respondents of GP are dissatisfied and 35% respondents are neutral in their opinion regarding low price SIM card. On the other hand, 32% Robi customers were satisfied and 29% were highly satisfied about low price SIM card. The mean value of customers' response regarding low price SIM card of GP is 2.57, which lies in neutral category, while mean value of Robi is 3.79, which falls in satisfied category of customers responses. In this regard, the value of CV of Robi is lower than that of GP. It is found that the opinion of the customers of Robi is less scattered than GP i.e Robi offer low price SIM card.

Table 6: Low Price SIM Card

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	5	29
Satisfied	4	9	32
Neutral	3	35	28
Dissatisfied	2	40	11
Highly Dissatisfied	1	11	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**2.57**	**3.79**
Standard Deviation (SD)		**.97706**	**.98775**
Coefficient of Variation (CV)		**38.02**	**26.06**

Source: Field Survey, March-June 2011

6. Solution of the Problems Related to SIM Replacement

Table 7 shows that 54% respondents of GP are satisfied and 21% respondents are neutral in satisfaction regarding solution of the problems related to SIM replacement. About 54.00% of the respondents of GP are above the satisfied level. On the other hand, 47% Robi customers are satisfied and 24% customers showed their neutrality.

Table 7: Solution of the Problems Related to SIM Replacement

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	16	13
Satisfied	4	54	47
Neutral	3	21	24
Dissatisfied	2	9	11
Highly Dissatisfied	1	0	5
Total		**100**	**100**
Mean Value ($\bar{x}$)		**3.77**	**3.52**
Standard Deviation (SD)		**.82701**	**1.01980**
Coefficient of Variation (CV)		**21.94**	**28.97**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi respondents about satisfaction regarding solution of the problems related to SIM replacement are respectively 3.77 and 3.52 and the CV is 21.94 and 28.97 accordingly. It is observed that the CV of GP is less than the CV of Robi. So, the researchers can conclude that the customers GP are more satisfied than that of Robi towards satisfaction regarding solution of the problems related to SIM replacement.

7. Special Offers to the Customers:

Customers always expect that their operators will give some special offers to them regularly. The operators who are providing special offers to customers, are getting more customers.
Table 7 reveals that about 39% respondents of Robi are satisfied and 26% are neutral. On the other hand, 37% GP customers are showing their neutrality and 32% was dissatisfied regarding special offers to the customers.

Table 8: Special Offers to the Customers

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	9	21
Satisfied	4	12	39
Neutral	3	37	26
Dissatisfied	2	32	14
Highly Dissatisfied	1	10	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**2.78**	**3.67**
Standard Deviation (SD)		**1.07853**	**.96457**
Coefficient of Variation (CV)		**38.80**	**26.28**

Source: Field Survey, March-June 2011

Mean value of GP and Robi respondents regarding special offers to the customers are respectively 2.78 and 3.67 and the coefficient of variation are respectively 38.80 and 26.28. It indicates that Robi is in a better position than GP in providing special offers to the customers.

8. Free Talk Time & Bonus Facilities

Free talk time & bonus facilities are very important for the customers to choose a particular mobile phone service provider. So, they always like to use the connection of that operator who will offer them free talk time & bonus facilities.

Table 9: Free Talk Time & Bonus Facilities

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	0	26
Satisfied	4	0	39
Neutral	3	7	25
Dissatisfied	2	51	10
Highly Dissatisfied	1	42	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**1.65**	**3.81**
Standard Deviation (SD)		**.60927**	**.93954**
Coefficient of Variation (CV)		**36.93**	**24.66**

Source: Field Survey, March-June 2011

Table 9 shows that 51% customers are dissatisfied and 42% customers are highly dissatisfied about free talk time & bonus facilities of GP. On the other hand, 39% customers were satisfied in their opinion towards free talk time & bonus facilities of Robi. Of whom 26% customers were highly satisfied and 25% customers were neutral. The mean value of customers' response towards free talk time & bonus facilities of GP is 1.65, which lies in dissatisfied category, while mean value of Robi is 3.81 which lie in satisfied category of customers' opinion. The value of CV of Robi is lower than GP and it denotes that the customers' opinion of Robi is less deviated than GP. So, it can be concluded that the customers of Robi are enjoying more free talk time & bonus facilities than GP customers.

9. Pulse Facilitiy

The customers who want to talk in a short time desire for pulse facilities. There are some operators in our country who are providing pulse facilities to the customers.
Table 10 reveals that about 49% respondents of Robi are dissatisfied and 22% customers are satisfied. On the other hand, 68% GP customers are dissatisfied and 23% were highly dissatisfied regarding pulse facilities to the customers.

Table 10: Satisfaction Regarding Pulse Facility

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	0	5
Satisfied	4	0	22
Neutral	3	9	17
Dissatisfied	2	68	49
Highly Dissatisfied	1	23	7
Total		**100**	**100**
Mean Value ($\bar{x}$)		**1.86**	**2.69**
Standard Deviation (SD)		**.55085**	**1.05117**
Coefficient of Variation (CV)		**29.62**	**39.08**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi respondents regarding pulse facility to the customer are respectively 1.86 and 2.69 indicate that Robi is in a strong position than GP.

10. Availability of Flexi Load/Easy Load Facilities

It is more important to the customer. Every customer wants these facilities in a convenient location. The operator who provides this facilities the customers are more satisfied on that operator than that of others.

Table 11: Availability of Flexi Load/Easy Load Facilities

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	63	12
Satisfied	4	32	20
Neutral	3	5	32
Dissatisfied	2	0	29
Highly Dissatisfied	1	0	7
Total		**100**	**100**
Mean Value ($\bar{x}$)		**4.58**	**3.01**
Standard Deviation (SD)		**.58913**	**1.12362**
Coefficient of Variation (CV)		**12.86**	**37.33**

Source: Field Survey, March-June 2011

Table 12 shows that 63% customers are highly satisfied and 32% customers are satisfied regarding availability of flexi load facility of GP. On the other hand, 32% customers were neutral in their opinion towards Easy Load facility of Robi of whom 29% customers were dissatisfied and 20% customers were satisfied. The mean value of customers response towards availability of flexi load/easy load facilities of GP is 4.58, which lies in highly satisfied category, while mean value of Robi is 3.01 which lies in neutral category of customers opinion. The coefficient of variation of GP and Robi are respectively 12.86 and 37.33 which indicate that the opinion of the customers of GP is less deviated than that of Robi.

11. Friends and Family Number Facilities

Every customer has some special number which is very much essential to him. He or she needs to talk with these numbers frequently. So he or she expects a lower tariff for these numbers. Cell phone operators provide some facilities for these FnF number. The operator who provides lower tariff and gives opportunity to more FnF number the customers are more satisfied with that operator.

Table 13 reveals that about 53% respondents of Robi are highly satisfied and 28% customers are satisfied. On the other hand, 49% GP customers are highly satisfied and 33% were satisfied regarding friends and family number facilities to the customers.

Table 12: Friends and Family Number Facilities

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	49	53
Satisfied	4	33	28
Neutral	3	14	12
Dissatisfied	2	4	7
Highly Dissatisfied	1	0	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**4.27**	**4.27**
Standard Deviation (SD)		**.85108**	**.93046**
Coefficient of Variation (CV)		**19.93**	**21.79**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi to the customer satisfaction regarding friends and family number facilities are respectively 4.27 and 4.27 and the coefficient of variation are 19.93 and 21.79 indicate that both the operators are near about equal position.

12. Internet and GPRS Connection

Internet and GPRS connection are very important for the young cell phone users. They want to get these facilities within low cost.

Table 13: Internet and GPRS Connection

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	11	8
Satisfied	4	28	25
Neutral	3	35	31
Dissatisfied	2	16	22
Highly Dissatisfied	1	10	14
Total		**100**	**100**
Mean Value ($\bar{x}$)		**3.15**	**2.91**
Standard Deviation (SD)		**1.12254**	**1.16424**
Coefficient of Variation (CV)		**35.64**	**40.01**

Source: Field Survey, March-June 2011

From the above table, it is found that 35% respondents of GP are neutral and 28% respondents are satisfied regarding Internet and GPRS connection. On the other hand, 31% respondents of Robi showed their neutrality and 25% respondents are satisfied and 22% respondents are dissatisfied regarding Internet and GPRS connection. Here mean value of GP and Robi respondents are respectively 3.15 and 2.91 and the coefficient of variation are respectively 35.64 and 40.01, which indicate that GP is in a good position than Robi.

13. Location of the Service Center

Table 15 shows that 40% customers are satisfied and 29% customers are highly satisfied 24% customers showed their neutrality regarding location of the service center of GP. On the other hand, 37% customers were satisfied towards location of the service center of Robi. Of whom 28% customers were neutral and 26% customers were highly satisfied.

Table 14: Location of the Service Center

Options	Value	Frequency	
		Grameenphone	**Robi**
Highly Satisfied	5	29	26
Satisfied	4	40	37
Neutral	3	24	28
Dissatisfied	2	7	9
Highly Dissatisfied	1	0	0
Total		**100**	**100**
Mean Value ($\bar{x}$)		**3.91**	**3.80**
Standard Deviation (SD)		**.90000**	**.93203**
Coefficient of Variation (CV)		**23.02**	**24.53**

Source: Field Survey, March-June 2011

Here mean value of GP and Robi to the customers satisfaction regarding location of the service center are respectively 3.91 and 3.80 and the coefficient of variation are 23.02 and 24.53 indicate that GP is in a better position than Robi.

14. Value Added Services Facilities

Cell phone operators provide some value added services such as SMS, MMS, and VMS etc. which is very important to the customers.

Table 15: Value Added Services Facilities

Options	Value	Frequency	
		Grameenphone	Robi
Highly Satisfied	5	10	8
Satisfied	4	45	44
Neutral	3	36	39
Dissatisfied	2	5	6
Highly Dissatisfied	1	4	3
Total		**100**	**100**
Mean Value ($\bar{x}$)		**3.52**	**3.48**
Standard Deviation (SD)		**.89307**	**.84662**
Coefficient of Variation (CV)		**25.37**	**24.33**

Source: Field Survey, March-June 2011

Table 18 indicates that 44% respondents of Robi are in satisfied level and 39% are neutral in their opinion regarding value added services. On the other hand, 45% GP customers were satisfied and 36% expressed their neutrality. The mean value of customers' response towards value added services of GP is 3.52, which lies in satisfied category, while mean value of Robi is 3.48 which lie in neutral category of customers' opinion. The value of CV of Robi is lower than GP and it denotes that the customers' opinion of Robi is less deviated than GP. In fine it can be said both the companies tried to reach their best position by offering various opportunities. Both the companies are staying a strong position. But their initial investment, customers, registration number of customers is different from each other. It is also seen that some of the customers are satisfied with the specific sectors of Grameenphone and some of the customers are satisfied with the specific sectors of Robi.

Test of Hypotheses and Results

Test of hypotheses and results have been presented in the below table 20 by the help of the statistical package SPSS version 16.0. The interpretations of the hypotheses testing have been given after the table 20.

Table 16: Paired Samples Test between Grameenphone and Robi

Variables	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
1. Network Coverage	.59000	.53362	.05336	.48412	.69588	11.057	99	.000
2. Effectiveness of Network	.83000	.73930	.07393	.68331	.97669	11.227	99	.000
3. Call Rate	.50000	.50252	.05025	.40029	.59971	9.950	99	.000
4. Availability of SIM Card	1.04000	.58465	.05847	.92399	1.15601	17.788	99	.000

Cont. Table

Variables	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
5. Low Price SIM Card	-1.22000	.52378	.05238	-1.32393	-1.11607	-23.292	99	.000
6. Solution of the Problems Related to SIM Replacement	.25000	.43519	.04352	.16365	.33635	5.745	99	.000
7. Special Offer to the Customers	-.89000	.37322	.03732	-.96405	-.81595	-23.847	99	.000
8. Free Talk Time & Bonus Facilities	-2.16000	.58119	.05812	-2.27532	-2.04468	-37.165	99	.000
9. Pulse Facility	-.83000	.77921	.07792	-.98461	-.67539	-10.652	99	.000
10. Availability of Flexi Load/Easy Load Facility	1.57000	.72829	.07283	1.42549	1.71451	21.557	99	.000
11. Friends & Family Number Facility	.00000	.28427	.02843	-.05640	.05640	.000	99	1.000
12. Internet & GPRS Connection	.24000	.42923	.04292	.15483	.32517	5.591	99	.000
13. Location of the Service Center	.11000	.31447	.03145	.04760	.17240	3.498	99	.001
14. Value Added Services Facilities	.04000	.24288	.02429	-.00819	.08819	1.647	99	.103

Table 16 shows that in case of the factor **'network coverage'** the calculated value of t (11.057) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

Regarding **'effectiveness of network'** the calculated value of t (11.227) is more than the tabulated value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

For the factor **'call rate'** the calculated value of t (9.950) is higher than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That is, H_a is supported.

Under the variable **'Availability of SIM card'** the calculated value of t (17.788) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

In case of **'low price SIM card'** the calculated value of t (-23.292) is less than the table value of t (-1.96) at 5% level of significance. So, H_0 holds true. That means, H_0 is accepted and H_a is rejected.

Regarding **'solution of the problems related to SIM replacement'** the calculated value of t (5.745) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That is, H_a is accepted.

Under the variable **'special offer to the customers'** the calculated value of t (-23.847) is less than the table value of t (-1.96) at 5% level of significance. So, H_0 holds true. That is, H_0 is supported.

In case of **'free talk time & bonus facilities'** the calculated value of t (-37.165) is less than the table value of t (-1.96) at 5% level of significance. So, H_0 holds true. That means, H_0 is accepted and H_a is rejected.

Under the variable **'pulse facility'** the calculated value of t (-10.652) is less than the table value of t (-1.96) at 5% level of significance. So, H_0 holds true. That means, H_0 is accepted and H_a is rejected.

For the factor **'availability of flexi load/easy load facility'** the calculated value of t (21.557) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

In case of **'friends & family number facility'** the calculated value of t (0) is less than the table value of t (1.96) at 5% level of significance. So, H_0 holds true. That means, H_0 is accepted and H_a is rejected.

For the factor **'Internet & GPRS connection'** the calculated value of t (5.591) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

Regarding **'location of the service center'** the calculated value of t (3.498) is greater than the table value of t (1.96) at 5% level of significance. So, H_0 is rejected. That means, H_a is accepted.

Under the variable **'value added services facilities'** the calculated value of t (1.647) is less than the table value of t (1.96) at 5% level of significance. So, H_0 holds true. That means, H_0 is accepted and H_a is rejected.

Summary of Findings

- Grameenphone spent a large amount of money in the establishment year for the tower purpose and is doing better for the network coverage than that of Robi.
- Most of the customers of GP have given their opinion in favor of effectiveness of network.
- The customers of Robi perceived low call rate than that of GP.
- GP is in a strong position than Robi regarding availability of SIM card.
- It is found that the opinion of the customers of Robi is less scattered than GP i.e Robi offer low price SIM card.
- GP is in a better position in providing solution of the problems related to SIM replacement than Robi.
- It is observed that Robi is in a better position than GP in providing special offers to the customers.
- The customers of Robi are enjoying more free talk time & bonus facilities than GP customers.

- It is found that most of the customers' of GP and Robi are dissatisfied regarding pulse facilities. But in comparison between these two operators, Robi is in a better position.
- Flexi load facility of Grameenphone is more available than that of easy load facility of Robi surrounding the country.
- The performance of both GP and Robi are satisfactory regarding friends and family number facilities to the customers.
- It is found that most of the customers' of GP and Robi are showing their neutrality regarding Internet and GPRS connection. But in comparison between these two operators, GP is in better position.
- The customers of both the operators are satisfied in case of location of the service center.
- It is found that the customers' opinion of Robi is less deviated than GP in case of value added services. That is Robi provides more value added services than GP.

Conclusion

Quality of telecommunications service depends on both the telephone network and the supporting services. The first is known as 'equipment and system oriented quality' and the second as 'people and process oriented quality'. Equipment and system oriented quality consists of activities directly related to the network while people and process oriented quality consists of activities provided over the telephone network or face to face (Yusuf and Alam, 2010). The quality of service of mobile telecommunications is usually measured in terms of some common parameters such as call completion rate, call drop rate, voice quality, percentage of complaints resolved within a stipulated time and customer service etc. (TRAI, 2008, Sutherland,2007, Australian Communications and Media Authority 2008). Accessibility and connectivity needs to be further improved. This can be achieved through the upgrading of technological infrastructure as well as the lowering of the internet usage costs through mobile phones to a more affordable level (Mahmud and Chowdhury, 2010).

The research has provided insights like what are positive and negative aspects of both of the operators. For instance, the total number of customers of Grameenphone are very high than Robi. Grameenphone Company spent a large amount of money in the establishment year for the tower purpose and is doing better for the network facilities. On the other hand, Robi is doing better in case of call rate, low price SIM card, friends and family number facilities, bonus system etc. Robi needs to improve its poor network coverage, problem related to SIM replacement, insufficiency of the scratch card and easy load facilities, lack of convenient location of the service center and discount facilities etc.

On the other hand Grameenphone is in a better position in comparison to Robi. It is doing better in case of following services like network coverage, effectiveness of network, solution of the problem related to SIM replacement, reconnection and migration, availability of the scratch card and flexi load facilities, location of the service center etc. But it can not be said that its services is much attractive to the customers. It has some other problems like lack of limited friends and family (FnF) number facilities and lack of bonus system (Free talk time, SMS), high call rate, lack of special offers to the customers, lack of pulse facilities etc. If GP takes initiative to remove or reduce these drawbacks, then it will be more successful in the telecommunications industry of Bangladesh.

Recommendations

Recommendations for Grameenphone: The authors have suggested some recommendations for improving the performance of Grameenphone are as follows-

1. The authority of Grameenphone should reduce its higher call charge. At the same time, the reduced call charge should be applied for all operators, not only for GP to GP, but also from GP to other operators.
2. It should provide more friends and family number facilities with GP to GP and other operators.
3. The Company should focus more to the prepaid subscribers than the post-paid subscribers.
4. SIM replacement (in case of lost or damaged SIM) charge should be reduced.
5. Most of the value added services (VAS) are not friendly for general handset users. GP should take some steps so that general handset users get an opportunity to have that VAS.

Recommendations for Robi: The following are the provided recommendations by the authors to improve the performance of Robi-

1. Customers have been switching to other operators as a result of their poor network infrastructure. So, Robi should have quick expansion in network development all over Bangladesh if it wants to keep its customers to stay with it.
2. Time duration of easy load and scratch card should lengthen. Easy load facility should be made easily available.
3. Charge should be reduced than the existing charge to take a new SIM if it is either damaged or lost.
4. The privilege services of the customer retention scheme of Robi should be launched as soon as possible as 'djuice' of Grameenphone has already started to saturate a certain segment of the market through its 'X-tra Khatir Card'.
5. The Value Added Services (VAS) department should be coming up with more ideas to entertain its customers. This department has its potential but should be using it to the full range to provide more useful services to customers' needs.
6. Customer Care has turned out to be one of the most focused points in the telecom industry. Survey results show subscribers expect a lot of it and would appreciate special care facilities.

References

Agar, J. (2003) 'Constant touch: A global history of the mobile phone', *Journal of Service Marketing*, vol. 5, no. 1, pp. 21-27.

Alam, M. J., and Neger, M. (2009) 'Measuring consumer attitude towards beautification products: A study on some selected brands in Bangladesh', *Journal of Business and Technology (Dhaka)*, vol. 4, issue 2, p. 61.

Australian Communications and Media Authority (2008) '*Telecommunications Today', Report 4, Customer Satisfaction*, February.

Balasooriya, A.F., Alam, Q., & Coghill, K. (2007) 'Ownership, competition and regulation under privatization policy: the Sri Lankan experience', *International Review of Administrative Sciences,* vol. 73, no. 4, pp. 611-628.

Bolton, R.N. (1998) 'A dynamic model of the duration of customers' relationship with a continuous service provider: The role of customer satisfaction', *Journal of Marketing*, vol. 21, no. 6, pp. 5-9.

Camp, L. J., & Anderson, B. L. (2001) 'Deregulating the local loop: The telecommunications regulation path less chosen as taken by Bangladesh', *International Journal of Technology, Policy and Management*, vol. 1, no. 1, pp. 100-114.

Coldwell. (2001) *The Practice of Management*, 4th edition, New York: Harper & Row.

Gupta S.P. and Gupta M.P. (2006) *Business statistics*, 11th ed., New Delhi: Sultan Chand & Sons.

Hasan, Mahmud. (2008) 'Mobile phone operators in Bangladesh', *The Daily Star*, 7 January.

Heinonen, K. and Andersson, P. (2003) 'Swedish mobile market: Consumer perceptions of mobile services', *Journal of Service Marketing*, vol. 9, no. 1, pp. 33-36.

Hess, D.J. (1997) *Science Studies: An Advanced Introduction*, New York: New York University Press.

Khalil, M. (2000) 'Ministerial support for mobile: Middle East Times', *Journal of European Business Management*, vol. 25, no. 2, pp. 54-81.

Khan, M. A. S. (2003) 'Privatization in the telecommunication sector: An overview of comparative Bangladesh situation', *The Bangladesh Accountant, 41*:14 pp. 29-36.

Luthans, F. (2002) *Organizational Behavior*, 9th edition, New York: McGraw-Hill International Companies Inc.

Mahmud, K. and Chowdhury, S. M. R. (2010) 'Prospects of mobile learning for digital Bangladesh', *Journal of Business and Technology (Dhaka)*, vol. 5, issue 1, January-June, pp. 50-61.

Mitchell, K. and Whitmore, M. 2003. Marketing Management: In Book-Location Based Services, Journal of American Business and Economics, 41(2):85-91.

Rahman, M. T. (2010) 'Making Teletalk a healthy competitor among the mobile phone operators in Bangladesh', *Journal of Business and Technology (Dhaka)*, vol. 5, issue 2, July-December, p. 133.

Silva, H. D., & Khan, A. S. (2004) 'Regulation and investment: Case study of Bangladesh', *WDR Dialogue Theme Discussion Paper WDR 0311*1-33.

Sutherland, E. (2007) 'The regulation of the quality of service in mobile networks', *Info* 9(6), pp. 17-34.

Symeou, P. C. (2009) 'Does smallness affect the liberalization of telecommunications? The case of Cyprus', *Telecommunications Policy* **33** (3-4), pp. 215-229.

TRAI. (2008) 'Quality of service assessment: Report of survey for basic service (Wireline)', *Cellular Mobile (Wireless) and Broadband*, New Delhi: TRAI.

Wang, Y., & Lo, H.P. (2002) 'Service quality, customer satisfaction and behavior intentions: Evidence from China's telecommunication industry', *Info,* vol. 4, no. 6, pp. 50-60.

Yusuf, M. A. and Alam, Q. (2010) 'The influence of regulatory environment on mobile phone service quality: The case of Bangladesh', *Annual Asian Business Research Conference 2010*, p. 5.

Web References

1. http://www.grameenphone.com/about-us (Retrieved on 11 August 2011)
2. http://www.grameenphone.com/about-us/corporate-information/ownership (Retrieved on 11 August 2011)
3. http://www.btrc.gov.bd/licensing/operators/mobile_operators.php (accessed on 11 August 2011).
4. http://www.robi.com.bd/index.php/page/view/98 (Accessed on 12 August 2011)
5. http://www.robi.com.bd/index.php/page/view/99 (Accessed on 12 August 2011).