Investigating the Factors that Stimulate Customer Perceived Service Quality of Subscription Based Value Added Services in Sri Lankan Telecommunication Industry

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ABSTRACT

The long term success of service organizations depends on many factors. In order to survive, service sector organizations need to offer service of high quality.

The rapidly changing, highly competitive environment in which the Telecommunication Service Providers (TSPs) operate, might have transformed customer expectations towards higher quality of the service of Mobile Value Added Services (M-VAS). Hence the purpose of this study is to examine customers' expectations and perceptions of service quality regarding the subscription based VAS in Sri Lankan telecommunication industry. The aim is to assess the perceived service quality of subscription service attributes and to determine the factors that influence the service quality perception. A modified SERVQUAL scale was used to assess perceptions and expectations of service quality attributes. The study results indicate a rather high expectation of subscription service users regarding service quality. 'Network Quality' was identified as the key dimension that destructs the customer perceived service quality resulting significant gap between customers' expectations and perceptions. Finally, in this study, some solutions have been proposed to try out with theoretically and practically proven tests, beneficial outcomes, discussions and conclusions. As it points out, if this endeavor could save a single penny to the company which eventually would avoid the circumstances that would lead to a significant failures which are obviously be considered as the ultimate obligation of this study.

KEYWORDS: Network Quality, Service Quality, SERVQUAL, Subscription Based Value Added Services, Telecommunication Industry

INTRODUCTION

Mobile operators can use different strategies and first mover advantage to retain their subscribers and evangelize other operators' customers. Nevertheless it is visible that the era in which the mobile operators could utilize voice services to differentiate themselves has ended. Even some Value Added Services (VAS) like peer to peer (Short Message Services) SMSs have also faced the same issue. That means VAS have already became the focal point of generating revenue and major source of differentiation.

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Thus the mobile operators' focus of attention should incline towards releasing new services constantly by identifying the customers' mobility needs of their daily life style. So it is obvious that greater attention to a better service quality of VAS is becoming vital as much as basic voice services. Telecommunications Service Providers (TSPs) need to ensure that of VAS are uninterrupted and always up to the desired quality level in order to ensure the customer perceptions at their expectations.
Currently in the Sri Lankan mobile market, VAS is provided either directly by the telecom operators or by third party content aggregators/enablers generally known as Value Added Service Providers (VASPs).

Examples of value added services provided directly by the telecom operators are basic SMs, General Packet Radio Service (GPRS) & Multimedia Message System (MMS). In many value added services, the VASPs

provide technology platform which enable an user to access content on to his/her mobile or terminal device. Examples of value added services provided through VASPs are news alerts, ring back tunes.

In telecom industry context, TSPs don't use any mechanism to monitor SMS based News Alert service. VAS engineering team in the organization under study has so many experiences on the incidents where they got to identify issues regarding VAS even after days from its occurrence. Anyhow the company doesn't have any idea about how seriously those circumstances affected the ultimate customer experience with reference to VAS.

While this has been the underlying actuality of M-VAS, it can be seen that there exist a lack of collaboration among the stakeholders of M-VAS Eco System in Sri Lankan cellular industry framework which straightforwardly made it difficult to monitor VAS. Also it has been doubted that the absence of a monitoring mechanism for VAS might have impacted significantly to the overall quality of VAS.

Thus, it is the time for the mobile operators to address the needs of their customers by identifying their futuristic needs while improving consumers' experience of existing VAS by paying more attention to service quality of the on hand VAS.

Research Objectives

The purpose of this study is to identify the gap between customers' perceived and expected service quality of subscription based VAS in Sri Lankan telecommunications industry in order to enhance customers' experienced service quality of the particular service type and to propose a solution to address the most significant factor that obstructs the customer experience.

LITERATURE REVIEW

Telecommunication companies usually divide SMS based VAS into three types: peer-to-peer, subscription and pay per transaction.

Peer-to-Peer Short Messages (SMs) referred to as the regular SMs sent/received by mobile users in order to communicate with each other. Pay per transaction means that mobile telecommunication subscribers will be charged while they download contents such as stock updates, lottery results, etc through mobile SMS. Meanwhile in subscription services, TSPs will charge subscribers as they register to a service for a certain period such as daily weekly or monthly basis.

The call flow of SMS based subscription services can be generalized as below;
Step 1: Mobile user sends registration request by pushing the application menu available in the SIM menu or by a regular SM. Registration request will be sent to the Subscriber Subscription Application (SSA) server.
Step 2: If the user is new to the service, SSA server will identify the request as a new subscription request and then SSA Server will deliver notification SM to the user. Notification SM may include information about tariff, how long to get a service and how to cancel the service, etc.
Step 3: Free trial for a certain period will be given e.g. one day, a week etc while the user agrees with conditions.
Step 4: Subscriber will receive notification informing as the free traffic period ended.
Step 5: By the end of the trial, subscriber will be charged if he/she agrees to extend the service. Then application server will deduct the balance available from the user's mobile account

Service Quality

Service quality is a very important factor in terms of customer retention with the firm as proven through several past studies. Service

quality has gained a greater prominence among the service driven industries. Competition has prompted firms to be more concerned with the quality of their service delivery, and cellular telecommunications sector is no exception. During the past few decades, service quality has become a major area of attention by practitioners, managers and researchers owing to its strong impact on business performance, costs, customer satisfaction, customer loyalty and profitability.

Customer Perceived Service Quality

Customer led quality can be defined as "feature of products which meet customer's needs and thereby provide satisfaction", and service quality relates to meeting customers' needs, 'perceived service quality' is identified to understand the consumer. Zeithaml et al. defined perceived quality as 'the consumers' judgment about an entity's overall excellence or superiority', which can be viewed as distinct from 'objective' quality in as much as it is a form of attitude, related in part to satisfaction, and resulting from a comparison of expectations with perceptions of performance. Service quality is usually regarded as the customer's impression of the relative inferiority/superiority of a service provider and its services.

Parasuraman et al described that when the perceived or experienced service is less than the expected service, it ascertains service quality lesser than requisite or satisfied value. When the perceived service is more than the expected service, obviously the service quality is more than satisfactory. They explain while a negative discrepancy between perceptions and expectations - a "performance gap" which brings forth dissatisfaction, where as a positive discrepancy exhibits consumer satisfaction having better service quality.

Measurement Model for Service Quality – The SERVQUAL Model

The SERVQUAL model suggests that the service quality is fundamentally a gap between the expectation in customer mind regarding a general class of a service provider and their estimation of actual performance of a specific firm within that class. Many have suggested that quality results from a comparison of perceived performance with expected performance. Indeed, this notion was the basis of the SERVQUAL model, which views service quality as the gap between the expected level of service and customer perceptions of the level received.

A survey of cellular phone customers in Hong Kong revealed that transmission quality and coverage of network are most important. An exploratory study of factors contributing to customer satisfaction of mobile users in India has resulted in the construction of three distinct constituents that is network base service performance, retailer related process performance, and network operator related performance. Thus they have suggested that using a separate quality dimension for "network quality" will give more clear-cut results in measuring the service quality of mobile telecommunication related services using SERVQUAL model. Furthermore, Wang et al. applied the SERVQUAL instrument to the mobile telecom market in China. The same study sector was considered in this research. In addition to five general dimensions of SERVQUAL, network quality was considered as the sixth dimension for performance in mobile telephony based on a qualitative study of organized customer focus groups.

METHODOLOGY

Main objective of this study is to identify customer perceptions on the service quality of subscription based VAS. As explained in literature review, SERVQUAL model provides guidelines to evaluate service

quality. Hence the structure of this study is mainly based on the five factors and the 22 service quality items in the SERVQUAL model. In addition to five general dimensions of SERVQUAL, network quality was considered as the sixth dimension for performance in mobile telephony as recommended by researchers. One attribute out of 22 SERVQUAL items was eliminated because it is also represented by an item in network quality dimension.

The research results of other scholars and the service characteristics of the telecom business were also referred in designing the framework of this study.

The following hypothesis has been proposed based on the research objective and the research structure of the study:

Hypothesis: Significant differences exist between expected and perceived service quality.

DATA COLLECTION AND ANALYSIS

In this study, both primary and secondary data collection strategies were utilized.

Most of the necessary background knowledge including market condition reports, references, similar literatures and also all the documentation relevant to SERVQUAL model had been collected through World Wide Web. The interviews were conducted to accumulate necessary information about VAS eco system and its shortcomings where interviewees were the VAS team members including Engineers, VAS marketing personals and the VAS manager. This was undertaken on a personal one-to-one basis while interviewee at work. Additionally, some of the observations made during the training period in the company were also materialized.

A questionnaire was designed based on the modified version of SERVQUAL model. According to SERVQUAL model there are five specific dimensions of service quality: tangibles, reliability, responsiveness, assurance and empathy. A survey of cellular phone customers in Hong Kong revealed that transmission quality and coverage of network are most important. Therefore in this study an additional value dimension for "Network Quality" apart from 5 generic dimensions has been used. For each dimension of service quality above, SERVQUAL measures both the expectation and perception of the service on a scale of 1 to 5. The questionnaire consisted of 26 questions in total.

The questionnaire was composed of three sections. The first section was intended to understand each respondent's basic personal details and usage of subscription based VAS. Almost all the measurement scales adopted in the questionnaire were nominal. The second section measured the respondent's experience of each construct in the SERVQUAL model. The third section measured the respondent's perceptions of each construct in the SERVQUAL model. A five-point Likert scale ranging from 1 (Strongly disagreed) to 5 (Strongly agreed) was employed to the instruments in sections 2 and 3.

Online surveying method was used to distribute the online questionnaire tool composed in Google Spreadsheets. As people answered the survey, their responses have automatically recorded by Google Docs where a summarized response of the questionnaire was just one click away.

Since the data were generated using scaled responses, reliability of the questionnaire was measured through Cronbach's alpha to ensure the internal consistency of the instrument. Cronbach's Alpha was measured for all the dimensions of the service quality for both expected and perceived. The Cronbach's α for factors are higher than 0.62 hence it could be concluded that data has an agreeable level of internal reliability.

Table 1: Reliability Analysis of Factors

Factors		Cronbach's α
Expected Service Quality	Tangibility	0.6819
	Reliability	0.6241
	Responsiveness	0.7186
	Assurance	0.6682
	Empathy	0.6583
	Network Quality	0.6292
Perceived Service Quality	Tangibility	0.6541
	Reliability	0.8027
	Responsiveness	0.7294
	Assurance	0.8513
	Empathy	0.7951
	Network Quality	0.6861

This study was constructed assuming that there exists a significant difference between experienced service quality and perceived service quality in the users who are using subscription based services. To confirm whether the above fact is true, the difference between customers expected and perceived service quality was analyzed by Paired T Test. A significant difference was observed. This is evident when the mean values of the customer expected and perceived service quality were compared. The customers expected service quality has mean value of 4.085, which is higher than perceived service quality whose value is 3.528 as indicated in Table 2.

Table 2: Difference between Expected and Perceived Service Quality

Items	Expected Service		Perceived Service		P
Service Quality	Mean	SD	Mean	SD	0.000
	4.2431	0.1000	3.7728	0.2490	

Table 3: Calculation of SERVQUAL Scores

SERVQUAL Dimension	SERVQUAL Attribute	Expect Score	Percept Score	Gap Score	Avg
Tangibles	1	3.84	4.20	0.36	0.41
	2	4.06	4.40	0.34	
	3	3.70	4.10	0.40	
	4	3.84	4.38	0.54	
Reliability	5	4.00	4.20	0.20	0.39
	6	3.56	4.26	0.70	
	7	4.02	4.32	0.30	
	8	3.96	4.32	0.36	
Respons-iveness	9	3.82	4.26	0.44	0.58
	10	3.72	4.24	0.52	
	11	3.56	4.20	0.64	
	12	3.60	4.30	0.70	
Assurance	13	3.68	4.30	0.62	0.33
	14	3.80	4.34	0.54	
	15	4.22	4.18	-0.04	
	16	4.04	4.22	0.18	
Empathy	17	3.96	4.12	0.16	0.31
	18	3.96	4.04	0.08	
	19	3.76	4.10	0.34	
	20	3.56	4.32	0.79	
	21	4.10	4.28	0.18	
Network Quality	22	3.68	4.26	0.58	0.78
	23	3.48	4.04	0.56	
	24	3.10	4.30	1.20	
	25	3.64	4.26	0.62	
	26	3.46	4.38	0.92	

RESULTS

The instrument used for data collection comprised of 5 point likert scale ranging from Strongly Disagree to Strongly Agree. The mean score for perceived service quality was 3.7727 which indicates that respondents nearly agreed with the overall service quality of the subscription services.

Nevertheless there was a significant gap existed between expected and experienced service quality in most of the service quality attributes which indicates that the telecom operators have to do loads of work to satisfy their customers by meeting at least customer expectations.

The average gap scores on dimensions of service quality indicate that average gap between expectations & perceptions are lower on the 'Tangibles', 'Reliability', 'Assurance' and 'Empathy' while a moderate average gap exists between expectations & perceptions on the dimension 'Responsiveness'. 'Network Quality' stands out as the dimension with highest average gap score among all.

The evaluation results of the gap scores of service quality attributes of subscription services are indicated in Table 3, of which only the item 15 has exceeded the customer expectations. This implies rest of 25 dimensions still are not fulfilling at least the customer expected services quality affirming the fact that the telecom service

providers are not addressing their subscription service customers' expectations properly.

Scores of the attribute 24 and attribute 26 demonstrate very high gap (0.92 and 1.20 respectively) with respect to other service quality attributes. Network quality dimension received the highest average for a dimension score mainly because of these two attribute as other three attributes of network quality, item 25, 22 and 23 having average gap scores 0.62, 0.58 and 0.56 respectively.

This observation shows that the higher degree of customers' dissatisfaction rooted with the subscription service breakdowns as the telecommunication service providers have disregarded the monitoring of subscription based VAS.

Mammoth gap score received for attribute 24 reflects customers' expectation toward telecom service provider to take immediate action when a service is interrupted. Customers have expressed their perception with such a large gap score may be due to the considerable number of bad experiences they have undergone regarding that issue. If a customer have to alarm his/her TSP again and again when a service breakdown is occurred, customer will get a permanent negative attitude towards TSP as such he/she will gradually loose the confident toward TSP. Usually when a customer files a complaint about a service failure, it is first received by customer care personals. Since there is no direct communication link between the VAS engineers and customer care personals, VAS engineers receive the complaints on service failures after a considerable delay since the complaint is filed. This situation answers the reasons for having the second largest gap score for service attribute 26 where customers have relatively large number of experiences in complaining again and again for same service failure.

Thus, based on Table 3, network quality dimension can be identified as the most critical factor to be focused in order to increase customer perceived service quality in subscription based services. Further, it is recommended to take immediate actions to the service quality gaps in service quality attributes 24 and 26. It can be clearly seen that there exists mutual relationships between these two attributes. If TSPs can address the attribute 24 properly, then the attribute 26 will automatically be addressed. Thus the root cause (most significant factor) can be identified as the absence of having a mechanism to identify network issues related to subscription based services in order to discover any subscription service failure as soon as the failure happens.

Solutions Proposed

The best feasible solution was identified as to construct a mechanism to monitor subscription based VAS in consumers' point-of-view (thinking the whole telecom network as a single entity) rather than stick in to individual network elements monitoring approach. A software application can be proposed as the subscription services monitoring mechanism in which the software will use an automated routine monitoring approach to monitor a particular subscription service in end-users' perspective. As an example, to monitor *Account Balance via SMS service*, a software application can be used where the application will monitor the overall balance requesting and responding process as a whole.

DISCUSSION

Bowman et al. proposed that customers' perceptions of value of a product or service are based on their beliefs about the product/service, their needs, unique experiences, wants, wishes and expectations. Buyers form their expectation of services on the basis of needs received from their self-recognition. Therefore, if buyers evaluate whether the performance meets the

expectation, it means they seek the answer as to whether the performance meets their initial need. The larger the gap between expectations and performance the greater will be the buyer's dissatisfaction. Undoubtedly, customers who are dissatisfied about quality of subscription services may stop using the service if the issue won't be addressed immediately. However, if the customers are satisfied, they will exhibit a higher probability of using other VAS depending on the confident about their TSP. Also the highly satisfied customers will become more loyal to the service providers and such customers can be favorable to their service providers in many ways such as by recommending the subscription to others. This implies that TSPs should close the customer gap between expectations and perceived service quality performance by analyzing the gaps existed in service quality dimensions.

CONCLUSION

The objective of this study has been very ambitious: first, to investigate the factors that stimulate customer perceived service quality of subscription based value added services, and secondly to introduce a methodology to overcome expected and experienced service quality gaps if encountered any.

This study has collected and analyzed the personal opinions of the users of subscription services of all TSPs through questionnaires. From the positions and viewpoints of the subscribers, the study has observed the dimensions and attributes of service quality that negatively affected the user experience of subscription service customers.

The results of the study indicate that there still exists a significant difference between the customers expected and perceived service quality. The network quality was identified as the service quality dimension that has the most significant service quality gap. Not having a proper monitoring mechanism was highlighted as the factor that stimulated the network quality to be of such significance.

As such, the study concluded that the TSPs should introduce a monitoring mechanism for the subscription based value added services in order to enrich the customer experience if they expect to succeed in the extremely competitive present telecommunication market.

FURTHER/FUTURE RESEARCH OPPORTUNITIES

High degree of customer dissatisfaction induced due to improper monitoring of subscription services may produce service usage termination, demoted customer loyalty or even churning to an another operator as well. So, having being pointed out the absence of VAS monitoring is critical, numbers of further research opportunities are unveiled (e.g., perceived value, loyalty, and product involvement, satisfaction, and purchase intentions)

This study has identified the absence of subscription based monitoring system is accountable for the gap between expected and perceived service quality. More research is necessary to investigate whether this problem exists among the users of other Value Added Service categories as well.

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