A STUDY ON CUSTOMERS' AWARENESS LEVEL OF VALUE ADDED SERVICES ON MOBILE PHONE SERVICE PROVIDERS - WITH SPECIAL REFERENCE TO TIRUPPUR DISTRICT, TAMIL NADU

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ABSTRACT

Mobile Value Added Services are those services that are not part of the basic voice offer and are availed separately by the end user. They are used as a tool for differentiation and allow mobile operators to develop other stream of revenue. Mobile VAS include non-voice advanced messaging services such as SMS, MMS and wireless data services based on wireless data bearer technologies such as WLAN, GPRS, WAP with VAS applications including mobile gaming. Mobile VAS also includes voice-based services such as PTT, IVR and WDA.

According to a study conducted by IAMAI and IMRB, the Indian Mobile VAS market is expected to reach Rs 26,000 crore by the end of 2012 and Rs 33,280 crore by 2013, growing at 28 percent. In the last three years, the average MVAS spent per month has risen by Rs 9 to stand at Rs. 24 per month in 2012.

Keywords: Value Added Services, Mobile Value Added Services, Growth Drivers and Average Revenue per User.

INTRODUCTION

A value-added service (VAS) is popular as a telecommunications industry term for non-core services, or in short, all services beyond standard voice calls and fax transmissions. It can be used in any service industry, for services available at little or no cost, to promote their primary business. In the telecommunication industry, on a conceptual level, value-added services add value to the standard, spurring the subscriber to use their phone more and allowing the operator to drive up their Average Revenue per User (ARPU). For mobile phones, while technologies like SMS, MMS and GPRS are usually considered value-added services, a distinction may also be made between standard (peer-to-peer) content and

premium-charged content. These are called mobile value-added services (MVAS) which are often simply referred as VAS. Value-added services are supplied either in-house by the mobile network operator themselves or by a third-party Value Added Service Provider (VASP), also known as a Content Provider (CP). VASPs typically connect to the operator using protocols like Short Message Peer-to-Peer Protocol (SMPP), connecting either directly to the Short Message Service Centre (SMSC) or, increasingly, to a messaging gateway that allows the operator to control and charge of the content better. There are many national and international investors are ready to invest in this segment of telecom market. A list of some Value Added Services provided by the telecom operators to the end users.

- News - e.g. Business, sports, politics etc.
- Finance - e.g. Share market, foreign exchange etc.
- Entertainment - e.g. Games, jokes, films etc.
- Travel - e.g. Railway, airlines etc.
- Download - e.g. Caller tunes, wallpapers etc.
- Astrology - e.g. Horoscope
- Contest - e.g. Reality shows
- MMS - e.g. Picture messages, video clips etc.
- E-mail - e.g. SMS, E-mail etc.
- Music - e.g. Ring tones
- Cricket - e.g. Score, video clips etc.
- GPRS - e.g. Internet, chat etc.
- Call Alert - e.g. Missed call alerts when mobile is switched off or busy
- Health - e.g. Health tips, beauty tips etc.
- M-Commerce - e.g. mobile transactions like mobile banking
- Others - e.g. movies, music etc.

Growth drivers of Value Added Services

- India is one of the fastest growing telecom markets globally;
- VAS potential as an ARPU enabler;
- Increased availability of affordable multifunction handsets with enhanced capabilities;
- A need for telecom service providers to differentiate themselves based on key VAS offerings;
- High speed networks like 3G and WIMAX likely to drive adoption of VAS

- The telecom market still has significant potential for growth, especially among rural population.

OBJECTIVES OF THE STUDY

The study has been undertaken with the following objectives:

1. To analyse the customers awareness level of Value Added Services on mobile phone service providers.
2. To find the customer level of satisfaction of Value Added Services on mobile phone service providers.

REVIEW OF LITERATURE

Harvinder Singh (2005) in his study, "Mobile Telephony Need to Knock Multiple Doors" concluded that, Mobile telephony in India has been tremendous growth in terms of subscriber base, tele-density, and usage, in the past six years, but it has not translated into a high Average Revenue per User (ARPU). A gradual but steady shift of mobile service providers towards value added services will help in achieving a higher level of differentiation among service providers. It will also generate an alternative stream of revenue and dependence on voice-call revenue will come down.

Smruti Bulsari (2006) in his study "National Telecom Policy (NTP) 1994 and Structural Change in Telecommunication sector of Gujarat" concluded that, There has been a significant development in the telecommunication sector in the past decade. The reforms in the telecommunications sector its beginning with the liberalization policy in general and the NTP 1994. This policy was revised after having identified the lacunae and it is being revised continuously in tune with the changes in technology and value added services with basic telephony. Since the introduction of the NTP 1994, a significant growth in the telecommunications sector of Gujarat and the growth rate is estimated to be 9.6%.

Jessy John (2011) in his study "An analysis on the customer loyalty in telecom sector: Special reference to Bharath Sanchar Nigam limited, India" concluded that, The purpose of this paper was to investigate the factors that influence customer loyalty of BSNL customers. Trustworthiness, relationship, image, value added services and inconvenience in switching phone no. were found to the key factors that influenced the loyalty of the BSNL customers. Even though the service provided by BSNL is very cost effective it is still loosing its customer base. BSNL must look away from the issue of cost and must try to improve the network quality and the quality of customer services as per the expectations of the customers. New technologies and features are being introduced in mobile services like PDA, MP4, high mega pixel digital camera and others. BSNL need to update itself with respect to these technologies at the same time take the initiative to market itself as youth friendly as youth are the target universe of any mobile provider. At the same time initiatives should be taken to improve the functional service quality were attention should be given to improve reliability, assurance, empathy and overall satisfaction of the customers. The existing customers should be actually made to feel that the 'BSNL is best hai mere a lie' which means BSNL is the best one.

Sivarthina Mohan. R and Aranganathan, P (2011) in their study "Conceptual framework of Mobile Marketing : Spamming the consumer around the world" found that, Mobile phones can also be an extremely cost effective communication channel as well as an efficient way of delivering a marketing message. Promotion through mobiles has emerged as an integral part of any brand's marketing campaign today. It has become an important engagement tool for brands and aims to fulfill the gap that traditional media has been unable to bridge. With the increasing popularity of the Mobile Internet, this form of marketing is soon on the edge to achieve a significant reach. It is also widely believed that the success of mobile advertising will directly depend upon the penetration and the success of Mobile Internet. There are plentiful opportunities for content and service providers to generate mobile value added services (mVAS) revenues from this nascent market.

Mallikarjuna .V, Krishna Mohan .G and Pradeep Kumar .D (2011) in their study "Customer switching in mobile industry - an analysis of pre-paid mobile customers in AP circle of India" found that, Switching is quite high in the pre-paid customer segment due to low switching costs and competitive tariff plans. With entry barriers easing and mobile number portability around the corner, there is a high probability for switching especially in the pre-paid segment. As network coverage, tariff plans, service play a vital role in retaining customers; the mobile operators should employ a number of strategies to manage the challenges. New levels of customer interaction at various stages are necessary to ensure customer intimacy and loyalty. Providing information on different plans, value added services, provision and activation of additional services, and customer friendly environment at all points of interaction are necessary to ensure customer delight. Network coverage and access are the key factors that influence the customer retention. Hence, investment in network and technology should go on to improve the geographic coverage, seamless connectivity and speed. Improvement in the quality of basic service – the voice call s will prove to be an excellent strategy for enhancing customer loyalty.

METHODOLOGY

The purpose of the present study was to study the awareness level of Value Added Services in the telecom sector. Mobile phone service providers taken for the study were BSNL, Airtel, Reliance, Aircel and Vodafone.

Selection of the population:

For the purpose of this present study Tiruppur District is chosen. It is a convenient place to collect the sample to the researcher and sample design is determined before data are collected.

Selection of Sample Size:

A sample of 300 respondents was taken based on randomly. These respondents were interviewed and data were collected from Tiruppur District.

Selection of the Sample:

Selection of the sample unit was selected under the "Random sampling". Random sampling is a sample selected from a population in such a way that the every member of the population has to get an equal chance of being selected. The choice of sample items depends on chance.

Methods of Data Collection:

Both primary and secondary sources of data were used. The primary data required for the study were collected through questionnaire. Primary data has been collected from different mobile phone service provider users in Tiruppur District. The main service providers are BSNL, Airtel, Reliance, Aircel and Vodafone. Secondary data was collected from the Annual reports of the companies, Magazines, Journals and Websites of various National and International Institutions.

Analysis of Data:

To arrive at certain conclusions regarding the hypothesis advanced in the present investigation, the following statistical tools for analysis of data were employed to consolidate, classify and analyse the data with reference to the selected objectives of the study. i.e., Simple Percentage Analysis, Weighted Average Analysis, Factor Analysis, Chi-Square Test and ANOVA. Statistical calculations have been made making extensive use of Microsoft Excel and SPSS Software Packages on the computer.

ANALYSIS AND INTERPRETATION

Table 1. Usage of Value Added Services

Usage	No. of Mobile phone service provider users	Percentage (%)
Yes	222	74
No	78	26
Total	**300**	**100**

Source: Primary data

The above table reveals that usage of value added services. Out of 300 mobile phone service provider users, 74 percent of the mobile phone service provider users are using value added services and remaining 26 percent of the mobile phone service provider users are not using value added services.

It is cleared that maximum numbers of mobile phone service provider users are using Value Added Services.

Table 2. Customer Awareness Level of Value Added Services

Services	Aware	Utilized	Unaware	Weighted Average Score	Rank
SMS - X1	282	18	0	1.06	**I**
Ring tones &Pictures download - X2	285	15	0	1.05	**II**
MMS - X3	129	69	102	0.89	**XI**
Internet/GPRS - X4	282	12	8	1.02	**V**
Chatting - X5	210	42	48	0.98	**VIII**
Video clips – X6	264	24	12	1.04	**III**
Contest in TV through SMS - X7	246	18	36	0.94	**X**

Table 2. Customer Awareness Level of Value Added Services (Contd…)

Services	Aware	Utilized	Unaware	Weighted Average Score	Rank
Voice based SMS - X8	108	57	135	0.74	**XIV**
Third party conference - X9	279	12	9	1.01	**VI**
Tele-Horoscope / Tele-Astrology - X10	75	60	165	0.65	**XV**
Opinion polls - X11	231	12	57	0.85	**XIII**
Quiz/Contest - X12	207	30	63	0.89	**XII**
City info line - X13	129	69	102	0.89	**XI**
Cricket and games - X14	297	3	0	1.01	**VII**
Information service - X15	255	27	18	1.03	**IV**

Source: Primary data

The above table shows that awareness of value added services. The weighted average score is ranged from 0.65 to 1.06. It has been observed through survey that SMS, Ring tones & Pictures download, video clips, information services, Internet/GPRS, third party conference, and chatting are the most frequently used value added services. Very few people rarely used services are city info line, contest in TV through SMS, MMS, and Quiz/Contest, opinion polls, voice based SMS and Tele-Horoscope/Tele-Astrology services. These are various valued added services offered by service provider.

Maximum number of users is familiar with prepaid & postpaid services, which are offered to them by their respective service provider. SMS, Ring tones & Pictures download, video clips, information services, Internet/GPRS, third party conference are commonly known services to most of the mobile phone service provider users frequently used for value added services.

Factor Analysis

Factor analysis is a multivariate statistical technique used to condense and simplify the set of large number of variables to smaller number of variables called factors. This technique is helpful to identify the underlying factors that determine the relationship between the observed variables and provides an empirical classification scheme of clustering of statements into groups called factors.

Using all the 15 awareness on value added services namely X1, X2,…….and X15 factor analysis is performed in order to group these variables on priority basis based on the strength of inter-correlation between them called 'Factors' and cluster theses variables in to the factors extracted and the results are presented in the following tables.

Table 3. Factor Analysis on Valued Added Services

Awareness Of Value Added Services	FACTORS				Communality
	I	II	III	IV	
SMS-X1	0.046	**0.770**	-0.062	0.045	0.601
Ring tones & Pictures download-X2	0.111	**0.833**	0.008	0.001	0.707
MMS-X3	**0.861**	0.085	0.253	0.034	0.814
Internet/GPRS-X4	0.132	-0.093	**0.832**	0.035	0.719
Chatting-X5	**0.536**	0.463	0.429	-0.213	0.731
Video clips-X6	0.275	**0.785**	-0.135	0.044	0.712
Contest in TV through SMS-X7	0.172	**0.555**	0.450	0.345	0.659
Voice based SMS-X8	**0.794**	0.086	0.225	0.035	0.690
Third party conference-X9	0.239	**0.524**	0.237	-0.140	0.407
Tele-Horoscope/Tele-Astrology-X10	**0.775**	0.208	0.202	-0.029	0.686
Opinion polls-X11	0.513	**0.546**	0.262	-0.194	0.668
Quiz/Contest-X12	**0.723**	0.361	-0.127	0.200	0.709
City info line-X13	**0.785**	0.193	-0.200	0.217	0.741
Cricket and games-X14	0.064	-0.049	0.045	**0.914**	0.844
Information service-X15	0.317	**0.583**	-0.041	0.478	0.670
Eigen value	3.96	3.57	1.44	1.38	10.358
% of vari expl	26.41	23.83	9.61	9.20	**69. 05**
Cum % of vari exp	26.41	50.24	59.85	69.05	

Source: Primary data

The above table gives the rotated factor loadings, communalities, eigen values and the percentage of variance explained by the factors. Out of the 15 awareness on value added services, 4 factors have been extracted and these four factors put together explain the total variance of these problems to the extent of 69.05 %. In order to reduce the number of factors and enhance the interpretability, the factors are rotated. The rotation increases the quality of interpretation of the factors. There are several methods of the initial factor matrix to attain simple structure of the data. The varimax rotation is one such method to obtain better result for interpretation is employed and the results are given below:

Table 4. Clustering Of Value Added Services into Factors

Factor	Awareness on value added services	Rotated factor loadings
I (26.41 %)	MMS - X3	**0.861**
	Chatting - X5	**0.536**
	Voice based SMS - X8	**0.794**
	Tele-Horoscope/Tele-Astrology - X10	**0.775**
	Quiz/Contest - X12	**0.723**
	City info line-X13	**0.785**

Table 4. Clustering Of Value Added Services into Factors (Contd…)

Factor	Awareness on value added services	Rotated factor loadings
II (22.83 %)	SMS - X1	**0.770**
	Ring tones & Pictures download - X2	**0.833**
	Video clips - X6	**0.785**
	Contest in TV through SMS - X7	**0.555**
	Third party conference - X9	**0.524**
	Opinion polls - X11	**0.546**
	Information service - X15	**0.583**
III (9.61%)	Internet/GPRS - X4	**0.832**
IV (9.20%)	Cricket and games - X14	**0.914**

Source: Primary data

Four factors were identified as being maximum percentage variance accounted. The 6 awareness on value added services X3, X5, X8, X10, X12 and X13 were grouped together as factor I and accounts 26.41 percent of the total variance. The 7 awareness on value added services X1, X2, X6, X7, X9, X11 and X15constituted the factor II and accounts 23.83 percent of the total variance. The one awareness on value added service X4 constituted the factor III and accounts 9.61 percent of the total variance. The one value added service X14 constituted the factor IV and accounts 9.20 percent of the total variance.

Thus the factor analysis condensed and simplified the 15 value added services and grouped into 4 factors explaining 69.05 percent of the variability of all the 15 value added services.

HYPOTHESIS TESTING

H_o: There is no significant difference in the mean of awareness scores on the value added services among the mobile phone service provider users.

ANOVA Table 5. Awareness of Value Added Services

Source	SS	DF	MS	F
Between groups	1186.932	14	84.781	167.615**
Within groups	2268.54	4485	0.506	
Total	**3455.472**	**4499**		

Note: **- Significant at 5 % level

It is observed from the above table that the calculated value of F 167.615 is greater than the table value 1.69 (167.615>1.69). The null hypothesis is rejected. It is concluded that there is significant relationship in the mean of awareness scores on the value added services among the mobile phone service provider users.

Hypothesis Testing - Chi-Square Test

Personal Variables and Awareness level on Value Added Services

H_0: There is no significant association between age and awareness on value added services.

Table 6. Age and Level of Awareness

Age	Level of awareness			Total
	Low	Medium	High	
Below 25 Years	33	42	18	**93**
25 – 35 Years	39	27	45	**111**
Above 35 years	36	21	39	**96**
Total	**108**	**90**	**102**	**300**

Chi – Square Test

Factors	Degrees of Freedom	Level of Significance	Table Value	Calculated Value
Age & Level of Awareness	4	0.05	9.49	19.023

It is observed from the above table that the calculated value 19.023 is of $\chi 2$ is more than the table value 9.49 (19.023>9.49). Hence the null hypothesis is rejected. It is concluded that there is significant relationship between age and level of awareness of value added services.

H_0: There is no significant association between sex and awareness on value added services.

Table 7. Sex and Level of Awareness

Sex	Level of awareness			Total
	Low	Medium	High	
Male	56	47	50	**153**
Female	52	43	52	**147**
Total	**108**	**90**	**102**	**300**

Chi – Square Test

Factors	Degrees of Freedom	Level of Significance	Table Value	Calculated Value
Sex & Level of Awareness	2	0.05	5.99	0.245

It is observed from the above table that the calculated value is 0.245 of $\chi 2$ is less than the table value 5.99 (0.245 < 5.99). Hence the null hypothesis is accepted. It is concluded that there is no significant relationship between sex and level of awareness of value added services.

H_0: There is no significant association between educational qualification and awareness on value added services.

Table 8. Educational Qualification and Level of Awareness

Educational Qualification	Level of awareness			Total
	Low	Medium	High	
Upto 12th	32	31	36	**99**
UG & PG degree	72	57	63	**192**
Diploma holders	4	2	3	**9**
Total	**108**	**90**	**102**	**300**

Chi – Square Test

Factors	Degrees of Freedom	Level of Significance	Table Value	Calculated Value
Educational Qualification & Level of Awareness	4	0.05	9.49	1.16

It is observed from the above table that the calculated value is 1.16 of $\chi 2$ is less than the table value 9.49 (1.16 < 9.49). Hence the null hypothesis is accepted. It is concluded that there is no significant relationship between educational qualification and level of awareness of value added services.

H_0: There is no significant association between occupation and awareness on value added services.

Table 9. Occupation and Level of Awareness

Occupation	Level of awareness			Total
	Low	Medium	High	
Employee	35	20	41	**96**
Professional	10	6	11	**27**
Student	34	25	13	**72**
Businessmen	17	24	28	**69**
Home maker	12	15	9	**36**
Total	**108**	**90**	**102**	**300**

Chi – Square Test

Factors	Degrees of Freedom	Level of Significance	Table Value	Calculated Value
Occupation & Level of Awareness	8	0.05	15.51	20.6

It is observed from the above table that the calculated value is 20.6of $\chi 2$ is more than the table value 15.51 (20.6>15.51). Hence the null hypothesis is rejected. It is concluded that there is significant relationship between occupation and level of awareness of value added services.

H_0: There is no significant association between family income and awareness on value added services.

Table 10. Family Income and Level of Awareness

Family income	Level of awareness			Total
	Low	Medium	High	
Below Rs.10000	3	3	6	**12**
Rs.10001- Rs..20000	57	42	48	**147**
Rs.20001- Rs.30000	33	33	33	**99**
Above Rs. 30000	15	12	15	**42**
Total	**108**	**90**	**102**	**300**

Chi – Square Test

Factors	Degrees of Freedom	Level of Significance	Table Value	Calculated Value
Family Income & Level of Awareness	6	0.05	12.3	2.541

It is observed from the above table that the calculated value is 2.541of $\chi 2$ is less than the table value 12.3 (2.541<12.3). Hence the null hypothesis is accepted. It is concluded that there is no significant relationship between family income and level of awareness of value added services.

Table 11. Customer Satisfaction of Value Added Services

Factors	HS	S	N	DS	HDS	Weighted Total	Weighted average score	Rank
Charges for VAS	53	247	0	0	0	1253	4.177	**II**
Internet connection	48	237	6	9	0	1233	4.110	**III**
Activation time for VAS	43	248	0	3	6	1222	4.073	**V**
Free SMS	69	227	4	0	0	1265	4.217	**I**
Guaranteed Delivery of Notification	45	243	3	5	4	1225	4.083	**IV**

Source: Primary data

The above table reveals that value added services and level of satisfaction. The weighted average score is ranged from 4.073 to 4.217. All mobile phone service provider users are satisfied with charges for value added services.285 of mobile phone service provider users are satisfied with internet connection and 15 of mobile phone service provider users are either neutral or dissatisfied with internet connection.291 of mobile phone service provider users are satisfied with activation time for value added services and 9 of mobile phone service provider users are dissatisfied and highly dissatisfied with activation time for value added services. 296 of mobile phone service provider users are satisfied with free sms services and 4 of mobile phone service provider users are either dissatisfied with free sms services. 288 of mobile phone service provider users are satisfied with guaranteed delivery of

notification and 12 of mobile phone service provider users are either neutral or dissatisfied with guaranteed delivery of notification.

Value Added Services have become one of the powerful ways for service providers to attract more & more customers. It is observed that maximum number of mobile phone service provider users are availing the valued added services. But now everyone frequently uses some Value Added services like SMS, ring-tone downloading, internet connection and gaming, etc. Majority of mobile phone service provider users are satisfied with charges for value added services and very few of mobile phone service provider users are neutral, dissatisfied and highly dissatisfied with internet connection, activation time for value added services, free sms and guaranteed delivery of notification.

H_0: There is no significant difference in the satisfaction scores on the value added services among the mobile phone service provider users.

ANOVA Table 12. Customer Satisfaction Scores and Value Added Services

SOURCE	SS	DF	M S	F
Between groups	2.724	4	0.681	2.72**
Within groups	373.95	1495	0.250	
Total	**376.674**	**1499**		

Note: **- Significant at 5 % level

It is observed from the above table that the calculated value of F 2.72 is greater than the table value 2.378 (2.72 > 2.378). The null hypothesis is rejected. It is concluded that there is significant relationship in the satisfaction scores on the value added services among the mobile phone service provider users.

FINDINGS OF THE STUDY

- Maximum numbers of mobile phone service provider users are using Value Added Services.
- Maximum number of users is familiar with prepaid & postpaid services, which are offered to them by their respective service provider. SMS, Ring tones & Pictures download, video clips, information services, Internet/GPRS, third party conference are commonly known services to most of the mobile phone service provider users frequently used for value added services.
- The factor analysis condensed and simplified the 15 value added services and grouped into 4 factors explaining 69.05 percent of the variability of all the 15 value added services.
- Maximum number of mobile phone service provider users are availing the valued added services. But now everyone frequently uses some Value Added services like SMS, ring-tone downloading, internet connection and gaming, etc. Majority of mobile phone service provider users are satisfied with charges for value added services and very few of mobile phone service provider users are neutral, dissatisfied and highly dissatisfied with internet connection, activation time for value added services, free sms and guaranteed delivery of notification.

RESULTS OF HYPOTHESIS TESTING

- There is significant relationship in the mean of awareness scores on the value added services among the mobile phone service provider users.
- There is significant relationship between age and level of awareness of value added services.
- There is no significant relationship between sex and level of awareness of value added services.
- There is no significant relationship between educational qualification and level of awareness of value added services.
- There is significant relationship between occupation and level of awareness of value added services.
- There is no significant relationship between family income and level of awareness of value added services.
- There is significant relationship in the satisfaction scores on the value added services among the mobile phone service provider users.

CONCLUSION

The Value Added Services industry in India is at nascent stage. At present, the telecommunications industry was revolutionized by the rapid penetration of 'Mobile', and the next level of growth-cum-revolution is undoubtedly marked by the value-added services (VAS) market. Mobile VAS has gained significance as it has been emerging as a potential alternative revenue stream. VAS enables the subscriber to use the mobile phone for a host of purposes such as for sending short messages, pictures, to surf the Internet, for mobile banking including mobile payments, to read news headlines, astrology, to listen to music, to play games and to seek various other types of information.

The current Indian MVAS market can be gauged into two categories that are Current MVAS and Emerging MVAS. The current MVAS category covers 63 percent of the total industry, whereas emerging MVAS covers the remaining share of 37 percent. The current MVAS consists of CRBT (27 percent) and SMS Based application (17 percent). On the other hand, the emerging MVAS consist mostly of Mobile Apps (10 percent) and Games (8 percent). MVAS growth further, affordable mobile devices and cheaper data subscription rates will play a crucial role in the market.

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