

Unplugging Entertainment through Mobile Value Added Services (MVAS)

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Abstract

The MVAS (mobile value added services) are an integral part of telecommunications sector. Due to heavy competition, there is a need to study and explore the value added Services Market. This empirical study aims to throw light on the usage/consumption patterns, awareness levels and intentions to use entertainment MVAS. The sample size for the study conducted in Delhi/NCR was 150 respondents. Various statistical tools like factor analysis and One-way Anova were used to identify factors on the usage patterns and awareness levels about the different features of VAS. The study also aims to determine whether demographic variables like age, gender and occupation had an effect on the usage patterns of the VAS.

Keywords: Value added services, Mobile commerce, consumer behaviour, Indian telecommunications' industry

1. Introduction

According to the Verified Market Research Report[16], the Global Mobile Value Added Services (MVAS) Market was estimated at USD 581.24 billion in 2019 and is predicted to reach USD 1641.68 billion by 2027, growing at a CAGR of 14.95% from 2020 to 2027. The growth and developments in the MVAS market have come about parallelly with improvements in the telecommunications' industry. From the early days of receiving and forwarding SMSes, the industry has seen a gamut of services being introduced like – graphics, wallpaper downloads; ring tones, caller ring back tones, SMS contests, and games. Thus, there is a need to find the usage pattern of the MVAS in India and to tap the awareness levels for these value-added services like entertainment, news etc.

The mobile value added services do not form core or basic services but get added in total service offerings. These services also stimulate incremental demand for core or basic services, but are not better than the core or basic service. The Mobile Value-added Services (MVAS) are used as a tool for differentiation and allow mobile operators to develop another stream of revenue. The mobile added-value services help in providing a rich customer experience and in having a high revenue growth. The growing need for communication services, other than voice communication, has led to an increase in the number of smartphone and tablet users. The various people involved in the VAS content value chain are copyright owners, creators, aggregators, mobile operators and device manufacturers. There are different MVAS categories like entertainment VAS, information VAS, m-Commerce VAS (Transactional services). In this study, we focus on the use of entertainment VAS only.

The study proposes to identify the usage patterns for entertainment VAS and studies the awareness levels of the customers towards entertainment VAS. This paper also aims to study the factors underlying the customers' intentions to use entertainment MVAS.

The research paper is structured in the following way - The introduction section is followed by a literature review and then by the research methodology section. The section on discussion is next and is then followed with a conclusion.

2.Literature Review

Mobile phones are one of the most common communication channels. It is believed that almost 75% of the global population uses mobile devices and are subscribers to MVAS[16]. Literature review reveals that many studies have been conducted on customer satisfaction for using mobile phones. According to Heijden et al,(2003)[5]customer satisfaction hails benefit and thus customers may be segmented based on their levels of satisfaction. Engel et al. (1982)[3] projected that customers with different lifestyles show differences in their attitudes, values, perceptions and personalities. According to Bruner and Kumar(2005)[2], a consumer will have a strong attitude towards adoption if he/she perceives a high usefulness towards services. Hong et al (2006)[6] identified that retaining customers is a key ingredient for success. Hung et al(2003)[7] claimed that young people use text messaging on mobile phones as forms of gifts to cement social relationships. Ling, (2004)[13] threw light on the social aspects of wireless communication technologies including mobile phones. Liao et al(2007)[12] believe that a mobile phone is a perfect example of mobile media. They go on to suggest that a mobile phone can receive as well as produce content over long distances and that it enhances interactivity. Ariely(2000)[1] suggests that time is a critical factor for the delivery of mobile services and can positively affect the consumers.

For many customers, mobiles are a pain in the neck, but a mobile device offers benefits like security, easy accessibility and safety (Ling, 2004)[13].But technology or technical services are also a complex part of mobile devices(Lee et al 2003)[11]. Wu and Wang(2005)[17] have professed on cross-cultural aspect of mobile phone usage amongst youth. They believe that youth are freely able to express and reinforce themselves in prevalent mobile culture. Yang(2005)[18] is of the view that mobile phones are beyond voice calls. Mobile devices provide many features and services like short messaging services(SMS), Multimedia Messaging (MMS), photo displays, video playback recording, calendaring and such others (Nysveen et al, 2005)[14]. According to Jackson et al (1997)[8], a positive attitude towards technology may not be the only factor to determine consumers' intention to use it. Laforet and Li (2005)[10] claim that consumers use mobile phones to fulfill their service needs. The consumers may adopt to mobile technology if there is service compatibility with their needs (Kleijnen et al, 2004)[9].

The review of the above literature shows that the usage and consumption of mobile phone technology has a significant societal influence. The omni presence of technology and its high inter-connectivity is bringing about changes in tastes and preferences of the consumers. Most of the studies pertaining to VAS in India are restricted either to metropolitan cities or other big cities only. Not many studies could be found related to using mobile phones, their services and the satisfaction of the consumers in India. Thus, the present study will throw light on the consumption patterns, awareness levels and intentions to use MVAS. There is a need to study these factors in relation to Indian markets as this is a growing sector and needs of consumers are on a high rise.

3. Research Methodology

This study uses both exploratory research design and descriptive research design. The research was conducted in two phases. The first phase involved literature review and interactions with academicians and industry experts to define the problem. This resulted in generating a list of questions affecting the usage. The questionnaire incorporated questions based on Likert Scale and the Factor Analysis was used for identifying factors influencing respondents' intentions and attitudes towards using MVAS. The sample size taken for the study is 200 and the sampling frame is Delhi/NCR region. The sampling technique used is Multistage Sampling. The primary data was collected with the help of a highly structured questionnaire from the residents of Delhi/NCR (National Capital Region), India. The respondents were mobile users in Delhi/NCR, that includes cities like Noida, Ghaziabad, Greater Noida, Faridabad and Gurgaon.

The respondents were given two lists of statements (10+11 items) that measured their extent of agreement towards the items. One list contained 10 items while the second list contained 11 items. The items were measured on a 5-point Likert scale with 1 score representing strongly agree statement and 5 score representing strongly disagree statement. These statements were chosen after a rigorous literature review and discussion with a four-member panel. The structured questionnaire was pilot tested and was found to be reliable and valid. These statements were sequenced in a way to avoid response bias to the maximum extent. After two days' time, the respondents were visited again to collect the questionnaire back. Out of 200 questionnaires, only 150 completely filled questionnaires were received.

3.1 Objective of the study

The main objective to conduct this research was to study the consumers' usage patterns (consumption) for entertainment MVAS, their awareness levels and intentions to purchase entertainment MVAS. The study aims to tap the Indian consumption pattern for the online services (entertainment, news etc.).

3.2 Analysis & Findings

The primary data was collected through a highly structured questionnaire. The questionnaire had two parts. The first part contained questions based on the demographics of the respondent and the second part consisted of the research questions related to MVAS. The demographic profile of the respondents is given in table 1.

Table 1: Demographic Profile of the respondents

Variables	Class Intervals	Number of Respondents	Percentage	Mean and Standard Deviation
Age	18-35	27	17.9	Mean = 2.04 Standard Deviation = .684
	36-50	95	62.9	
	51-65	23	15.2	
	Above 65	05	3.0	
Gender	Male	86	57	Mean = 1.43 Standard Deviation = .496
	Female	64	43	
Occupation	Working	84	55.6	Mean = 1.56 Standard Deviation = .498
	Non-working	66	44.4	

3.3 Reliability of the study

Table 2: Reliability of the Constructs

Constructs	No. of items	Cronbach Alpha
Usage/Consumption pattern	10	.89
Awareness/Intentions to use	11	.83

Factor analysis was used for two sets of statements. The first set comprised of statements from 13-22 and the second set for 36-46. The question set from 13-22 statements reflected on the usage pattern of the respondents towards entertainment MVAS. The question set of 36-46 statements highlighted the awareness levels and the intentions to use entertainment MVAS.

Table 3: KMO and Bartlett's Test for question bands 13-22

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.640
Bartlett's Test of Sphericity	Approx. Chi-Square	182.743
	Df	45
	Sig.	.000

The KMO (Kaiser-Meyer-Olkin Measure) of Sampling Adequacy is 0.640. As the KMO value is above 0.5, it indicates that the sample size is suitable for conducting factor analysis. About 56.884 % of the total variance in the 10 variables is attributable to the first three components. Table 3 explains the variance and the Eigen values. The first component explains an eigen value of 2.452, which is 24.521% of total variance, second component explains an eigen value of 1.920, which is 19.318% of total variance and third component explains the eigen value of 1.305, which is 13.046% of total variance. The variance accounted for by the three components is 56.884% of the total variance in the ten variables.

Table 4: Variance and the Eigen values

Factor	Eigen Value	Percentage of Variance	Cumulative Percentage of Variance
1	2.452	24.521	19.45
2	1.932	19.318	38.652
3	1.305	13.046	56.884

The factor loadings for the set of questions 13-22 with their components 1,2 and 3 for usage /consumption patterns can be named as under and their item loadings are mentioned in brackets:

1. Accessibility of VAS on mobile devices: This factor accounts for a total variance of 24.521 and eigen value of 2.452. It includes items like- Accessing VAS on mobiles is an efficient way to get entertained (.854), using web applications through my mobile devices is an efficient way to entertain myself (.549), using VAS makes download of music easy(.764). Respondents have been very frequent in their use of web applications and value-added services.

2. Ease of navigations: This factor amounts to a total of 19.318 and eigen value of 1.932. Major parts of this factor include-I use free search options for updating my song collections (.452),

Using MVAS for transactions fulfils my service needs (.727), I visit online sources of entertainment (.707) and I use paid online sources of entertainment (.606).

3. Patronising services: This factor amounts to a variance of 13.046 and eigen value of 1.305. This factor includes items like – I use online entertainment sources for saving time(.722),I am a regular user of entertainment MVAS(.421) and I get my money’s worth by using MVAS(.746).

Exploratory factor analysis was again conducted for the question statements 36-46, to determine the awareness levels and intentions behind consuming entertainment MVAS. The software used for the purpose of analysis is SPSS.

Table 5 KMO and Bartlett's Test(Question Band 36-46)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.632
Bartlett's Test of Sphericity	Approx. Chi-Square	298.152
	Df	55
	Sig.	.000

Kaiser-Meyer-Olkin Measure is 0.632 which is greater than 0.5. This indicates that we can proceed with factor analysis in the study. The KMO and Bartlett’s Test are indicators for the suitability of the data to conduct factor analysis. The significance level is 0.000 which is less than 0.05. So there is a significant relationship amongst the variables. The communalities in this table are all high i.e, above 0.5, which indicate that the extracted components represent the variables well(Hair et al, 1998)[4].

Table 6: Variance and the Eigen values

Factor	Eigen Value	Percentage of Variance	Cumulative Percentage of Variance
1	2.991	27.193	24.88
2	2.048	18.617	42.40
3	1.278	11.614	56.06
4	1.023	9.305	66.728

About 66.728 % of the total variance for the 11 variables attributes to the first four components. By examining the above table 5, it can be concluded that the first component explains a variance of 27.193% of total variance; second component explains a variance of 18.617% of total variance, the third component, the variance is 11.614% and for the fourth component variance is 9.305%. The amount of variance explained by the eleven components is 66.728% of the total variance.

The factor loadings for the statement sets from 36-46 with their components 1,2,3 and 4 can be named as under and their item loadings are mentioned in brackets:

1. Intentions to share: This factor is an important determinant with a total variance of 27.193 and eigen value of 2.991. It includes items like – I get alerts of various MVAS(.711),listen to songs and watch programmes(.640), I am a subscriber of a VAS application(.550), I receive information about VAS through advertisements(.838), I share information by using paid services(.763).

2. Knowledge: This factor has risen as an important determinant with a total variance of 18.617 and eigen value of 2.048. Major items include- I am aware of my digital rights(.806), I am aware about VAS provided by various telecom players(.748) and I am aware about the new applications (.708).

3.Adopt: This factor has a total variance of 11.614 and eigen value of 1.278. Major items include- I share downloaded music with my peers(.828) and I think telecom players should lower down their tariffs for VAS(.768).

4.Convenience: The lone factor has a total variance of 9.305 and eigen value of 1.023.The item under this factor is – I find it helpful and useful to use web applications and online music portals (.837).

One-way Anova was conducted to identify whether there were any variations in usage patterns /consumptions for entertainment MVAS, with respect to the demographic variables like age, gender and occupation.

3.4Hypothesis of the study

Null Hypothesis Ho1: The demographic variables (age, gender and occupation) have no impact on the usage(consumption) levels of entertainment MVAS.

Table 7: Age and Usage levels

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	19.509	3	6.503	2.569	.057
Within Groups	369.584	147	2.531		
Total	389.093	150			

There are no statistically significant differences between the group means as determined by one-way Anova, $F(3,147)=2.569$, $p=.057$). As the p-value is greater than 0.05, we can infer that age has no impact on usage levels.

Table 8:Gender and Usage levels

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	14.702	1	14.702	5.812	.017
Within Groups	374.391	149	2.530		
Total	389.093	150			

There are statistically significant differences between the group means as determined by one-way Anova, $F(1,149)=5.812$, $p=.017$). As the p-value is less than 0.05, we can infer that gender may have an impact on usage levels.

Table 9: Occupation and Usage levels

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	16.055	1	16.055	6.370	.013
Within Groups	373.038	149	2.521		
Total	389.093	150			

There are statistically significant differences between the group means as determined by one-way Anova, $F(1,149)=6.370, p=.013$. As the p-value is less than 0.05, we can infer that occupation may also have an impact on the usage levels.

4. Discussion

Value-added services are the non-core or additional features provided by the service operators at a premium to its customers. With the rollout of 3G and 4G services in the market, the mobile value-added service has started acting as a revenue stream for the providers. Penetration of smartphones and tablets has created opportunities for the mobile value-added service providers to add new consumers and generate revenue. The telecom operators thus find an innovative way to differentiate their offerings to attract the consumers. This would provide much needed boost to the mobile VAS market in the coming year.

According to the latest reports [15], the global mobile VAS market amounted to US\$ 53.89 Bn in 2018 and is expected to grow at a CAGR of 11.54% during 2019 to 2027, accounting to US\$ 141.35 Bn by 2027. The Asia Pacific region is the leading geographic market in the world, and it is predicted that this region will be the highest revenue contributor. The industry estimates predict [16] that the total number of unique mobile subscribers across the globe would be close to 5 Bn subscribers by the end of 2017 and would rise to 5.7 Bn by the end of 2020. Going by these figures, it is believed that nearly 75% of the world's population would subscribe to a mobile service. The key driving forces for the digital world are the use of smartphones and connectivity. This has led to tremendous growth and development in the MVAS industry.

Vast number of application providers follow different business models. In present times, the MVAS providers provide information, entertainment, and important utility services to the mobile subscribers. Many TV channels and FM channels hand over their content through short codes in exchange for money. Various television channels have created mobile related content for their episodes to be telecast on mobiles. Voting in different TV shows and participations in different TV contests have been the major sources of revenue generation for media companies. Various stakeholders have different roles and functions in the MVAS value chain. Technology partners and platform enablers serve to be the backbone to all MVAS activities by managing various software platforms and tools. Tele voting systems and voice portals are popular backend technical solutions. There are companies who own a short code - e.g. 58888, 53456 etc. These short codes may be bought by a third-party for a few keywords for a specific period. A new business process namely content development and aggregation has also emerged as a result of MVAS. A strong drive towards data services from the consumer end has also paved the way for MVAS providers to focus on developing more data-based offerings. The roll-out of 5G services, increasing smartphone penetrations and consumer use-cases are expected to further the growth of MVAS.

5.Result

The study aimed to identify whether there were any variations in usage patterns /consumption, awareness levels and intentions to use entertainment MVAS, with respect to the demographic variables like age, gender and occupation. The study found that age has no impact on usage levels, while gender and occupation do have an impact on the usage levels. The study also found that the three factors to influence usage for entertainment MVAS include accessibility to web and VAS applications, ease of navigations and patronizing services. The study claims that factors affecting awareness levels and intentions to use VAS include intentions to share, knowledge, adopting services and convenience.

6.Conclusion

The Value-Added Services are provided by the telecommunication companies with an aim to improve their standard offerings and thereby increase the number of subscribers to their network. With an increase in the number of subscribers, the average revenue per user (ARPU) value for the company too increases. The study aimed to identify whether there were any variations in usage patterns /consumption, awareness levels and intentions to use entertainment MVAS, with respect to the demographic variables like age, gender and occupation. The study found that age has no impact on usage levels, while gender and occupation do have an impact on the usage levels. The study also found that the three factors to influence usage for entertainment MVAS include accessibility to web and VAS applications, ease of navigations and patronizing services. The study claims that factors affecting awareness levels and intentions to use VAS include intentions to share, knowledge, adopting services and convenience.

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References

1. Ariely,D.(2000),”Controlling the Information Flow: Effects on Consumers’ Decision Making and Preferences.” *Journal of Consumer Research*,27,233-248.
2. Bruner, G.C and Kumar,A.(2005) “Explaining consumer acceptance of handheld internet devices,” *Journal of Business Research*,58(5),553-558.
3. Engel J.F., Blackwell R.D, 1982, *Consumer Behaviour*,Fourth Edition, Chicago,The Dryden Press
4. Hair,J.F., Anderson,R.E., TathamR.L., and Black,W.c(1998) *Multivariate data Analysis* (5th ed.),Engelwood Cliffs,Nj:Prentice Hall.
5. Heijden,H.V.D.,Verhagen,T and Creemers,M.(2003).Understanding online purchase intentions: Contributions from technology and trust perspectives.*European Journal of Information Systems*, 12(1),41-48.
6. Hong,S.J., ThongY.L and Tam,K.Y.(2006) Understanding continued information technology usage behaviour:A comparison of three models in the context of mobile internet.*Decision Support Systems*,42(3),1819-1834.
7. Hung,S.Y.,Ku,C.Y and Chang,C.M.(2003).Critical factors of WAP services adoption:An empirical study. *Electronic Commerce research and Applications*,2(1),46-60.
8. Jackson, C.M, S.Chow and R.A Leitch (1997),”Towards and understanding of the Behavioral Intention to use an Information System”, *Decision Sciences* 28(2),357-389.
9. Kleijnen, M.H.P., J.C de Ruyter and M.G.M Wetzels (2004),”Consumer Adoption of Wireless Services: Discovering the Rules, While Playing the Game,” *Journal of Interactive Marketing*,18(2) 51-61.
10. Laforet,S and X. Li (2005)”Consumers’ Attitudes towards Online and Mobile Banking in China”, *International Journal of Bank Marketing*,23(5) 362-380.

11. Lee, M.S.Y., P.J. McGoldrick, K.A. Keeling and J. Doherty (2003). "Using Zmet to explore Barriers to the Adoption of 3G Mobile Banking services," *International Journal of Retail and Distribution Management*, 31(6/7) 340-348.
12. Liao, C.H., Tsou, C.W, and Huang, M.F. (2007), Factors influencing the usage of 3G mobile services in Taiwan, *Online Information Review*, 31(6), 759-774.
13. Ling R. (2004) *The Mobile Connection: The Cell Phone's Impact on Society*
14. Nysveen, H., P.E. Pedersen and H. Thorbjørnsen (2005), "Intentions to use Mobile Services: Antecedents and Cross-service Comparisons," *Journal of the Academy of Marketing Science*, 33(3) 330-346.
15. Report on MVAS from <https://www.prnewswire.com/news-releases/the-global-mobile-vas-market-accounted-for-us-53-89-bn-in-2018-and-is-expected-to-grow-at-a-cagr-of-11-54-over-the-forecast-period-2019-2027--to-account-for-us-141-35-bn-by-2027--300947269.html>.
16. Verified market Research Report from <https://www.verifiedmarketresearch.com/product/global-mobile-value-added-services-mvas-market-size-and-forecast-to-2025/>.
17. Wu, J.H and Wang, S.C., (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model, *Information and Management*, 42(5), 719-729.
18. Yang, K.C.C (2005). Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and Informatics*, 22(3), 257-277.