## Research Article

# MOBILE VALUE ADDED SERVICES AND THE SATISFACTION OF CUSTOMERS

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| ARTICLE INFO | ABSTRACT |
|---|---|
| | The Mobile Value-Added services play a vital role for increasing the revenue in the Indian telecom sector. These services are considered as growth drivers. This paper is an attempt to analyze customer satisfaction for Mobile Value Added Services. M-commerce, M-education, M-entertainment etc. have been identified as important detriments that satisfy the customer. |

## INTRODUCTION

The Indian mobile market is growing leaps and dumps. In spite of the robust growth seen in the Indian telecom industry in the last two decades, the industry has been facing a sluggish growth for the last five years due to decline in minutes of use per connection per month (MOU) and Average Revenue per Use per Month (ARPU). The MOU went down from 465 minutes in 2007 to 369 minutes in 2010, whereas ARPU declined from 256 to 66 for Code Division Multiple Access (CDMA) (**Cellular Operations Association of India- COAI Report, 2011**). Intense competition among the major telecom operators in the country has led to a fall in the voice of tariffs and consequently resulted in lowering of the revenues of telecom market (**Chen and Cheng, 2010**). At a time when the industry is facing a sleep fall in voice tariffs, Mobile Value-Added Services (MVAS) are considered as growth drivers, source of revenue and key differentiators (**Kuo and Chen, 2006**). Hence, it is imperative for marketers to analyze customers' preferences and satisfaction of MVAs, as they have a huge impact on customers' usage pattern, and open a pathway for service providers to become significant differentiators across the operators by inculcating innovation in services. The Indian MVAS are forecasted to reach rs.50, 000 crores by 2015 with an annual growth rate of 25% from the current size of Rs. 18000 crores (**ASSOCHAM, 2013**). Trends in mobile phone penetration, continuous growth in technology, need for differentiations in telecom services, increasing consumer demand and awareness, and advances in

information and communication technology act as drivers for uninterrupted growth of MVAS in the country. High quality Value-Added services (VAS) should be contemplated by marketers by analyzing customer satisfaction and preferences with an aim to sustain profitability in the telecom sector in a highly competitive scenario (**Chen and Ariteio, 2008**).

This paper aims to predict the customer satisfaction (CS) for MVAS. On the basis of the most relevant literature, M-Commerce, M-Education, M-Health, and M-Entertainment have been identified as the main determinants of VAS in mobile telecommunication that affect customer satisfaction. These four determinants have also been used a specific constructs for the study (**Nokia Telecommunication Market Study Report, 1999; and PWC Report, 2011**). MVAs refers to additional services provided by the telecom operators excluding voice communication that allow customers to get entertained and informed through their mobile phones. The VAS in mobile telecom is in the form of voice mail, digital or any other method that is directly or indirectly paid by the end-users. It creates win-win situation for both customers and services providers as customers are benefitted from digital empowerment and gain functional and hedonic utility, while service providers get a service for non-voice revenue.

### Categories of MVAS

VAS (Value Added Services) are categorized on the basis of information, application and enablement (**ASSOCHAM, 2011**) and on the basis of infotainment and transactional services

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(**Nokia Telecommunication Market Study Report, 1999**). The following categories of VAS were identified along with their respective activities:

**M-Commerce:** M-Commerce includes the services that facilitate transformations from mobile phones. These services make the financial services available in remote areas. Mobile banking alerts, mobile banking transactions, mobile ticketing, information and enabling payment are the major services that customers can access through m-commerce (**ASSOCHAM, 2011, and Li** *et al* **2012**). Mobile banking facilitates checking bank accounts, and remittance of beneficiaries (**Jabri and sohail, 2012**). Value proposition in m-commerce in identified as:

- Ubiquity: Receiving information (news, sports, score, travel, weather forecasting, etc.) and virtual transactions convince (banking, communication, entertainment, gaming, retailing, videoconferencing);
- Location: location-based marketing (coupons, customer service, dispatch, supply chain management), and
- Personalization: individual target marketing such as advertising and database management.

### M-Education

M-Education refers to the service that supplies educational content electronically and helps the learners in acquiring knowledge regardless of time and location (**Baloglu, 2007**). It provides educational information such as exams alerts, language training, mobile reading, adult literacy and teacher training and facilitates m-education dissemination (**ASSOCHAM, 2011**). This VAS has an immense potential in higher education and can be accessed with proper institutional support with an aim to facilitate tailored educational contents (**Milrad and spikol, 2007**).

### M-Health

M-Health provides health solutions for a particular medical problems vis-à-vis disseminating necessary information, alerts and updates, digital prescriptions and performing a channel role to deliver timely and effective medical services (**Evens** *et al.,* **2012**). The role of these services will become very crucial during chronic and widespread diseases and helps in educating and generating awareness and accessibility of medical services in remote areas through telemedicine. Due to inadequate availability of medical and human resources in remote areas, mobile technology devices, such as personal digital assistant, cell phone, personal laptops and palm tops, provide healthcare services by establishing a connection between the patient and primary healthcare.

### M-Entertainment

M-Entertainment services are the most exciting and emerging services among all the categories with substantial future potential. These Value Added Services enhance hedonic utility by facilitating various activities such as music, ringtones, wallpapers, movies, videos, live sports, and online games (**penttinen** *et al.,* **2010; Liang and Yeh, 2011**).

## MATERIALS AND METHODS

Customer satisfaction starts with the consumption process, inevitably a phenomenon of consumer behavior, by using products, services or experiences that lead to value and satisfaction. Consumption is a process that converts time, goods, ideas or services into value (**Babin and Harris, 2012**) and customer satisfaction refers to post-consumption phenomenon characterized by a mild, positive emotional state resulting from a favourable outcome of consumption process. Customer satisfaction is one of the critical factors for establishing a long-term relationship and sustaining profitability in general, and telecom sector in particular (**McKinney** *et al.,* **2002**). VAS in mobile telecommunication are considered important factors that influence the selection of a service provider, customer satisfaction, and loyalty (**Ku** *et al.,* **2009; Santouridis and Trivellas, 2010; and Paulrajan and Rajkumar, 2011**).

Mobile phones are increasingly used for mass communication and entertainment. The motivation for using the m-entertainment includes time pass, which is significantly linked with playing video games, resulting in a positive impact on customer satisfaction (**Wei, 2008**). M-entertainment enhances Customer satisfaction due to its salient external beliefs such as images and enjoyment that can be considered as benefits of m-entertainment (**shih, 2011**). The following hypotheses are framed on the basis these findings:

H1: M-commerce significantly affects customer satisfaction in MVAs.
H2: M-Education significantly affects customer satisfaction in MVAS.
H3: M-Health significantly affects customer satisfaction in MVAS.
H4: M-Entertainment significantly affect customer satisfaction MVAS.

### Objectives

The study includes the following objectives:

- To assess customer satisfaction with MVAS.
- To assess the degree of association between MVAS and customer satisfaction.
- To predict customer satisfaction and identify the relative importance of determinants affecting customer satisfaction.

### Sample study

A self-administered questionnaire was used to predict consumer satisfaction with MVAS. The questionnaire consisted of four determinants of MVAS. The questionnaire consisted of four determinants of MVAS. Customer satisfaction was by LiKert scale (from highly satisfied to highly dissatisfied) for various activities involved in each determinant. The average CS score for VAS of a particular determinant was considered as satisfaction score towards a particular construct (**Hair** *et al.,* **2011**).

Population of the study: The existing mobile service users of Rajkot city were considered as the target population for the study. The customers with active mode for various service providers such as BSNL, Idea, Airtel, Reliance and vodafone were considered as a sampling frame for the study, and convenient sampling technique was used to collect 200 respondents (50 from each service provider) from the target

population. The data was collected during the period from June 2012 to August 2012. These service providers were chosen because of their prominent market share among various service providers (**TRAI, 2010**).

## RESULTS AND DISCUSSION

### Ovrall satisfaction towards MVAS

One sample t-test was used to measure the overall customer satisfaction towards MVAS. The assumption of normality was examined by one sample Komogorow-Smirnow (KS) test for applying parametric test on the overall satisfaction. It can be seen from Table 1 that two-sided asymptotic significance (p-value) in one sample KS test is more than 0.05 (at 5% level of significance) for overall satisfaction, hence it does not reveal the violation of normality and can be used in parametric test procedure (**Carver and Nash, 2010**).

**Table 1. Test for Normally for Overall Satisfaction**

| Overall Satisfaction | Normal Parameters | | Kolmogorov-smirnov Z | Asymp. Sig. (two-Tailed |
|---|---|---|---|---|
| | mean | Std.deviation | | |
| | 5.68 | 2.46 | 1.296 | 0.052 |

The test statistics of one sample t-test revealed that the overall satisfaction towards MVAS significantly differs (p<0.000) from the hypothesized test value (5.0), hence the mean for overall satisfaction (5.68) indicates that the customers are satisfied with mobile VAS.

**Table 2. Test Statistics of One Sample t-Test**

| Overall Satisfaction | t-Test | df | Sig. (2-tailed) | Mean Difference | 95% confidence Interval of the Difference | |
|---|---|---|---|---|---|---|
| Hypothesized Test Value = 5 | | | | | | |
| | | | | | Lower | Upper |
| | 4.269 | 199 | 0.000 | 0.79 | 0.412 | 1.125 |

### Predicting Customer Satisfaction and Identification of Relative Importance of Determinants

Here, overall satisfaction is considered as a dependent variable (outcome), while m-commerce, m-education, m-health and m-entertainment were considered as independent (predictors) variable s to access multiple regressions. The descriptive statistics Table-3 reveals mean and standard deviation of satisfaction towards each determinant. It can be seen that the highest satisfaction belong to m-entertainment (6.87), followed by m-commerce (5.67) and m-health (3.68).

**Table 3. Customer satisfaction towards Determinants of MVAS**

| | Overall satisfaction | M-Commerce | M-Education | M-Health | M-Entertainment |
|---|---|---|---|---|---|
| Mean | 5.815 | 5.67 | 5.03 | 3.68 | 6.87 |
| SD | 2.5 | 2.46 | 2.2 | 2.06 | 1.3 |

The multiple regression yields a model to predict customer satisfaction for mobile value added services. This model consists of four predictors, viz., m-commerce, m-education, m-health and m-entertainment, (Table 4) produced by SPSS is used to examine the overall model fit and whether the predictors

used in the study are successful in predicting the customer satisfaction (**Field, 2009**). It can be seen from Table-4 that multiple correlation coefficient (R=0.78) was found strongly positive between four predictors and outcome, and 58% of the variance in the customer satisfaction is accounted for by all the predictors. The small difference between $R^2$ (0.573) was found to be 0.009 or 0.9%. It indicates that the generalization of model for the population, and also reveals that if the model is derived from the population. It will explain 0.8% less variance in customer satisfaction. It indicates that the generalization of model for the population, and also reveals that if the model is derived from the population, it will explain 0.9% less variance in customer satisfaction.

**Table 4. Model Summary Table**

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | 0.78 | 0.584 | 0.573 | 1.72 | 1.61 |

### Conclusion

Mobile value added services plays a significant role in generating revenue for mobile telecom sector as service providers are facing a challenge to sustain profitability due to continuous decline in minutes of use per connection per month, average revenue user per month, steep fall in voice tariffs, and huge competition in industry. Analyzing the customers' preferences, demand and satisfaction creates a win-win situation for both customers and service providers. The service providers can make a distinct image for themselves across the service providers. The service providers can make a distinct image for themselves and differentiate themselves across the service providers by inculcating innovation in Value Added Services. The present study is conducted to predict customer satisfaction towards mobile value added services. On the basis of the most relevant literature, the study identified four constructs that affect customer satisfaction, viz., m-commerce, m-education, m-health, and m-entertainment. The study reveals the overall satisfaction towards mobile value added services and further reveals that customers are more satisfied with m-entertainment, followed by m-commerce, m-education and m-health. The study also indicates that all determinants are positively associated with customer satisfaction. It is interesting to note that all dominants play an important role in predicting the customer satisfaction with mobile value added services. Among all the four determinants, m-commerce largely contributes to predict customer satisfaction, followed by m-entertainment, m-education and m-health, and the degree to which they affect customer satisfaction is also noticeable. It is also observed that m-commerce affects maximum, followed by m-entertainment, m-health and m-education.

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