Determinants of Customers Churn in Emerging Telecom Markets: A Study Of Indian Cellular Subscribers

Pathak, Kavita[*] · Sanjay Rastogi[**]

〈Abstract〉

　Marketing is said to be a zero sum game i.e. each gain of customer for a firm is always at the expense of some other firm's customers. Therefore in a marketplace churn is a natural occurrence. Churn in Indian telecom market is among the highest in growing telecom markets. By using binary logistics regression analysis based models based covering a sample of 822 Indian telecom subscribers; this paper attempts to examine the determinants of churn. The future churn is found to be dependent on satisfaction level of the customer with the service provider, attitude and loyalty of the customer variables, intended churn (i.e. intention to churn) and current loyalty (defined as intention to recommend) and distraction (i.e. intention to experiment).

　Key Words: Customers Churn, Indian Cellular Subscriber, Emerging Telecom Market, Attitude towards the Service Provider, Customer Satisfaction

1. Introduction

1.1 Churn Defined

Customer churn happens to be the most pressing issue for telecommunications service providers. In the telecommunications industry, churn is the term used to describe customer attrition or loss. Churn can be broken down into *involuntary churn,* where the carrier cuts off service, oftentimes due to repeated nonpayment of invoices & transfers, and *voluntary* churn, where the customer chooses to disconnect service. Churn can also be internal where the customer switchovers between the types of services provided by the same service provider. Churn is measured in telecom industry in different ways. Typically it is calculated by dividing disconnects by the net subscriber base. However, it differs depending at what point of the time period one measures (beginning, end or average between the two) and how one can define a customer

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　* Assistant Professor Jaipuria Institute of Management Vineet Khand, Gomti Nagar Lucknow – 226010 India, kavitapathak@jiml.ac.in

** Senior Lecturer Jaipuria Institute of Management Vineet Khand, Gomti Nagar Lucknow – 226010 India, srastogi@jiml.ac.in

(a line, an account, a phone, etc.). Many operators do not include involuntary and dealer/employee disconnects in their calculations. Defection and acquisition patterns are most easily observed in 'subscription' markets where most customers have a "repertoire of one", i.e., they typically subscribe to one brand, which provides all their category requirements, until they defect to another (Sharp and Wright 1999).

1.2 The Churn Problem

Most cellular circles in India today have four GSM operators and sometimes up to two CDMA operators—up to six mobile telephony offerings. In this highly competitive scenario, it's but natural that almost everybody is switching cellular providers. While teenagers are attracted by goodies such as free SMS, for executives it could be the free long distance minutes and value adds. But while gaining new customers is good news for any Telco, the flip side is the loss of customers—or churn, in industry parlance. Churn is a widely recognized problem today for most mobile telecommunications providers.

In simple terms churn refers to customers canceling their existing contract only to embark on a relationship with a competing mobile service provider.

1.3 Impact of the Problem

Though many service industries are affected by the churn phenomenon the problem is extremely acute in the telecom industry, with customers joining and quitting in short periods. Prevailing churn rates in the Indian telecom market is anywhere between 3.5 percent and 6 percent per month, one of the highest in the Asia-Pacific region. Considering that the cost of acquiring a new customer is as high as 3,000 INRs (65-70 USDs), the losses are immense. The cost of acquiring a new customer is more than that of retaining one. The cost of acquiring a new customer is more than five times that of retaining an existing customer. Even if we calculate a churn of 2 percent a month, an operator is losing 24 percent of its customers every year. Whatever the numbers; the fact remains that the telecom industry's bottom line is getting affected significantly, thanks to the high churn rate.

The main objective of this study is to identify the key determinants of customer churn in the Indian telecom market. This

market is relatively new i.e. about a decade old; and expanding at a high rate. Not many studies have been undertaken on customer churn here. This study has three secondary objectives. It attempts to capture relationship strength of the customer with the service provider as a determinant of churn. The second objective is to tests the affective triggers of churn i.e. emotional aspect of customer churn related problems and the third objective is to identify the rational triggers of customer churn. This paper thus attempts to profile the causal influences on churn i.e. the determinants of churn.

2. Literature Review

The study of churn or retention has been carried out broadly from three perspectives. One set of studies focuses on predicting the customer's propensity to churn, the second group of studies is on impact of churn on a firm's performance and the third set of studies is on determinants of customer churn.

The first set of studies profiles **the strength of a cellular service providers' relationship with its customers.** Most of the studies here, establish the linkages between customer loyalty, retention and propensity to churn. There is evidence supporting satisfaction and loyalty linkages (Johnson and Fornell 1991, Fornell et al 1996, Mittal and Kamakura 2001). Apart from satisfaction the other key determinants of loyalty are found to be relationship commitment of a customer. There are many studies on the relationship between relationship commitment and behavioral intent to be loyal (Bendapudi and Berry 1997; Fullerton 2003; Garbauna and Johnson 1999; Morgan and Hunt 1994). Gustaffe, Johnson and Roos 2005 used three separate constructs i.e. overall customer satisfaction, affective commitment and calculative commitment as the key drivers of loyalty and retention in telecom markets.

In the literature commitment has been defined as a desire to maintain a relationship (Moorman, Deshpandé, and Zaltman 1993; Morgan and Hunt 1994), a pledge of continuity between parties (Dwyer, Schurr, and Oh 1987), the sacrifice or potential for sacrifice if a relationship ends (Anderson and Weitz 1992), and the absence of competitive offerings (Gundlach, Achrol, andMentzer 1995). The various definitions suggest two

different dimensions of relationship commitment that drive loyalty: affective commitment, as created through personal interaction, reciprocity, and trust, and calculative commitment, as created through switching costs (Bendapudi and Berry 1997; Fullerton 2003; Garbarino and Johnson 1999; Morgan and Hunt 1994). Loyalty is often interpreted as actual retention, which is a cornerstone of customer relationship management (CRM). Majority of the researches have demonstrated the effects of these constructs only on behavioral intentions. Relatively few studies explain actual behavior (exceptions include Bolton 1998; Bolton and Lemon 1999; Mittal and Kamakura 2001; Verhoef (2003). For example, Bolton (1998) finds a positive effect of overall customer satisfaction on the duration of the relationship for cellular phone customers, and Bolton and Lemon (1999) show a positive effect of overall satisfaction on customer usage of telecommunications subscription services.

The service literature supports that perceived service quality and value serve as drivers of customer satisfaction and loyalty intention (e.g. Cronin *et al.,* 2000; Yang and Peterson, 2004). In a study of telecommunications services, (Gustafsson,

Johnson, & Roos 2005) examined the effects of customer satisfaction, affective commitment, and calculative commitment on retention in totality. They further examined the potential for situational and reactional trigger conditions to moderate the satisfaction-retention relationship. The results support consistent effects of customer satisfaction, calculative commitment, and prior churn on retention. Prior churn also moderates the satisfaction-retention relationship. As an overall evaluation that is built up over time, satisfaction typically mediates the effects of product quality, service quality, and price or payment equity on loyalty (Bolton and Lemon 1999; Fornell et al. 1996). It also contains a significant affective component, which is created through repeated product or service usage (Oliver 1999). In a service context, overall satisfaction is similar to overall evaluations of service quality. Compared with more episode based or transaction-specific measures of performance, overall evaluations are more likely to influence the customer behaviors that help a firm, such as positive word of mouth and repurchase (Boulding *et al.* 1993).

In a financial services context, Verhoef (2003) demonstrates direct effects of affective commitment on both relationship

maintenance (retention) and relationship development (share of a customer's business). Although both satisfaction and payment equity were positive antecedents of affective commitment, they did not directly affect behavior. Verhoef measured satisfaction using aggregated customer beliefs about specific dimensions of service performance (e.g., satisfaction with personal attention, willingness to explain procedures, response to claims). In contrast, Gustaffe, Johnson and Roos measure satisfaction as an overall evaluation of performance (Bolton and Lemon 1999; Fornell et al. 1996). The insignificance of subscription duration in affecting the loyalty-induced action indicates that lock in effects are likely to be concentrated among the "spuriously loyal" customers who are not willing to churn just because of switching costs.

The second sets of studies are on market share and churn and vice-versa. It is generally accepted that there is a positive relationship between market share and profitability (eg, Kohli et al. 1990; Szymanski et al. 1993)1. There are a number of possible explanations for this relationship. Of these explanations, the most common reason proffered, is that larger firms enjoy economies of scale

(e.g., Buzzell et al.1975). The general concept of scale economies is well understood and has been discussed at length in the industrial organization and economics literature, as well as in the marketing and strategic management literature. Higher share firms should be able to enjoy lower costs through realizing economies in several areas, including procurement; processing/manufacturing and marketing (see Scherer and Ross 1990). Larger companies may, therefore, enjoy higher profitability as a result of their overall lower unit costs of production. It is also argued that there is a "threshold effect" for advertising, whereby those that advertise on a small scale find it much harder to acquire or maintain brand awareness (e.g. Rao and Miller 1975). Consumers tend to notice brands that they use (Ehrenberg 1974), so ads for larger brands with more users will be noticed more by the public, increasing their effectiveness. In their paper Sharp, Riebe, Dawes and Danenberg (2002) report a little known marketing economy of scale; namely that big firms suffer from lower "churn" rates than do smaller firms, i.e., they turnover less of their client base each year. That is, small brands tend to have a more instable base of customers in

comparison with the parger brands in any category. This is a 'Double Jeopardy' pattern for churn, that is, smaller brands not only have fewer customers but they are also more likely to lose them. The double jeopardy pattern is well established for repeat-buying within stable repertoires. Small-share brands not only have fewer customers, but these customers buy the brand less often than larger brands get bought by their customers. And now we see that it occurs for *changes* in repertoire too, ie, churn. Double Jeopardy within stable repertoire buying has been observed in numerous empirical studies conducted over the last thirty years in a range of industries and countries (Ehrenberg et al. 2003). Recently the Double Jeopardy pattern has also been observed for customer defection/retention rates for car purchasing (Colombo et al. 2000). Double Jeopardy occurs because of asymmetries in familiarity and distribution, i.e., some brand's is bigger than others.

The third set of studies are on determinants of customer churn; particularly ion the context of telecom market. There have been studies on the triggers of customer churn. In general, a trigger is a factor or an event that changes the basis of a relationship (Roos, Edvardsson, and Gustafsson 2004). In the marketing literature, triggers are frequently cast as alarm clocks that concentrate energy for further actions (Edvardsson and Strandvik 2000; Gardial, Flint, and Woodruff 1996). Preliminary qualitative interviews support the use of Roos's (1999, 2002) situational and react ional triggers. There are many studies in international context on this theme (e.g. France (Lee *et al.,* 2001), Germany (Gerpott *et al.,* 2001), South Korea (Kim *et al.,* 2004) and US ((Lim *et al.* 2006)).

Situational triggers alter customers' evaluations of an offering based on changes in their lives or in something affecting their lives. These include demographic changes in the family (e.g., becoming "empty nesters"), changes in job situations, and changes in the economic situations. In a way, the product has expired; it no longer reflects the needs of the customer. In telecommunications, situational triggers may be represented by the need to replace or remove a type of service or subscribe to a different type of service. However, it may take considerable time before the switching path is complete (Keaveney 1995; Roos 1999).

Reactional triggers are those critical incidents of deterioration in perceived

performance that are traditionally described in the literature (Gardial, Flint, and Woodruff 1996). When something out of the ordinary occurs, such as a decline in performance before purchase, during purchase, or during consumption, it redirects a customer's attention to evaluate present performance more closely, which may put customers on a switching path (Roos 1999, 2002). For example, Bolton (1998) finds that unreported service failures have a significant, negative effect on retention.

In a study of determinants of consumer churn in Korean market Hee Su and Choong Ha (2004) conclude that the probability that a subscriber will switch carrier is dependent on the level of satisfaction with alternative- specific service attributes including call quality, tariff level, handsets, brand image, as well as income, and subscription duration. However, only factors such as call quality, handset type, and brand image affect customer loyalty as measured by the intention/non-intention to recommend the service provider to other people.

Usually, such a high churn rate is witnessed in more mature markets of the west; where operators try to attract customers from competitors since market growth is saturated. With one of the lowest telecom penetrations, the Indian market is anything but mature. Then what are the reasons for this trend? Many subscribers shift to another vendor due to brand image. Beyond the brand image, higher churn is generally attributed to the numerous tariff options available to customers. A customer may also churn due to billing disputes with a particular vendor—billing fraud also comes into play. More than tariff plans it is the quality of customer service that prompts a customer to churn or remain loyal.

In the current market scenario there is hardly any difference in offerings, prices and quality of service offered by different operators. Cutthroat competition has ensured that there is not much difference between the tariffs plans offered by different vendors. This is where customer service and value-added services come into play. If an operator doesn't anticipate market needs or does not provide value added services offered by the competitor, then the customer is likely to churn. Other than this, some of the key factors that encourage churn are inadequate network coverage, which includes dropped calls that occur in places where network coverage is thin and blocked calls that

occur when the demand for network services exceeds capacity.

The churn problem is more prevalent in the prepaid segment, which today accounts for the vast majority of Indian cellular users. The prepaid customer is more price sensitive than the post paid one. With rentals as low as 200 INR (5-6 USD), customers with low usage prefer prepaid cards. Also, students and those who like to experiment with different networks prefer the prepaid offering.

The problem, which motivated us to undertake this study, was the increasing Churn Rate in the telecom industry and decreasing brand loyalty of the customers towards the different service providers. Though presently most of the companies are not too much concerned with the customer churn as the growth rate in the telecom industry is much higher than the churn rate. So if they lose one customer they acquire two customers. But the cost that the companies incur due to customer attrition is very high and the cost of acquiring a new customer is also very high. In this scenario companies should not be dependent on the high growth rate of the industry and should focus their attention on customer churn as a problem. As the telecom industry approaches

maturity this factor will attain most importance. Our primary objective in this study is finding determinants of customer churn in Indian cellular subscription market.

3. Research Design

The research was conducted in northern part of India. The tool which we employed for generating responses was questionnaire based survey of cellular subscribers. Focused Group Discussions (FGD) were conducted which provided us the information of the major factors responsible for customer churn in telecom industry and the customer aspirations from the different service providers. The pilot testing of the questionnaire was done on a group of eighty respondents (cellular subscribers). Unwanted and ambiguous questions were removed and some new alternatives were introduced in the questionnaire after conducting the reliability analysis.

This whole exercise helped us in framing the questions for the final Questionnaire and also helped us in streamlining the information needed to conduct this research. It was known that

most of the switchovers occur in the earning group, so the major portion of our sample comprised of respondents that were earning. The sampling procedure adopted was of quota sampling in which the relevant control characteristic was Age on the basis of which quotas were formed.

Only primary data was used in the research, which was obtained from the questionnaire. Different types of scales used included nominal, ranking scale and seven point Likert scale and bi polar semantic differential scale.

Exogenous variables include the attributes towards mobile service quality. Measures of exogenous variables are adapted from consumer surveys conducted by marketing research firms as well as literature. The attributes include call drop, network congestion, cross connection, call charges, clarity in voice, free messaging, value added services connectivity, talk time, schemes, are measured on seven point bi polar semantic differential scale. Endogenous variables like intention to churn and impulsive churn had been measured on dichotomous scale. Likert scale was used in the analysis of attitude of the consumer and also used in the extraction of factors on which the

customer finalizes its purchase of brand of telecom service providers.

3.1 Sample profile:

It is very evident from the above chart that 34% of our respondent are availing the services of BSNL(state owned operator) and the rest of the respondent were subscribing to private players viz 23% of Reliance, 23% of Hutch, 15% of Airtel and 5% of Tata Indicom. The major chunk of our sample is dominated by BSNL, Reliance and Hutch. This reflects the share of these telecom players in the northern India. Tata Indicom being the latest entrant in the market has the smallest share but the growth potential is enormous.

Majority of the respondents were having prepaid connections. Our main focus was on the earning group in order to ensure the correct measure of the churn rate (as they are the most frequent users and also decision makers with regards to the switchover from one operator to other). Therefore 74% of the respondents are in the earning group (26% were government employees, 28% were private sector employees, 13% businessmen and 7% professionals); College students and

housewives made remaining 26% of the sample. As our focus was on the earning group our 70% of total sample size comprises of the respondents in the age group of 25-55 years. Majority of the respondents make expenditure on service provider in the range of Rs 0 1000. Monthly billing comprises of prepaid and postpaid both. In prepaid billing is measured by the value of recharge coupon used by the consumer in one month.64% paid their bill on their own i.e. personal connection

3.2 Reliability and validity

The first draft of the questionnaire was reviewed by two professional scholars in related fields. The contents of the draft were reviewed and revisions were suggested. The questionnaire used in the study thus qualified for expert validity. The results of the pilot test were incorporated and expert validity insured.

The pilot test for the questionnaires was conducted on a sample of 80 cellular services subscribers. The reliability analysis was conducted on all the 80 responses. In our study we had adopted internal consistency analysis to conduct reliability testing. The Cronbach's ɑ for the determinants of

churn turned out to be 0.7912. The output indicates that the reliability of the scale of measurement is very high.

For the complete study, 1000 responses were generated using the pilot tested questionnaires, and only 820 completely filled questionnaire were retrieved after adopting an internal consistency analysis to proceed with the reliability test.

Cronbach's ɑ for the study on customer churn was 0.8347. The results obtained indicate that the scales used qualified to produce excellent reliability.

4. Churn Models and Results:

The following regression models were used in the study, and the analysis was carried out using binary logistics regression (Binary logistic regression is most useful when we wish to model the event probability for a categorical response variable with only two outcomes, thus it becomes logically justifiable to use it in studying the churn of the customer towards the service provider).

$$Churn_{t+1} = \beta_0 + \beta_1 CS_t + \beta_2\ AO_t + \beta_3 CL_t \tag{1}$$

Table 1.1

VARIABLE	DEFINITION	MEASUREMENT IN QUESTIONNAIRE	VALUE
A_{0t}	Overall attitude towards the service provider in time period t	AOt output is generated using Fishbein's Model (Ajzen & Fishbein, 1974). The model is constructed such that a person's overall attitude towards some object is derived from his beliefs (cognitive component) and feelings (affective component) about various attributes of the object. Both measured through two sets of questions having twelve parameters each. Each of these parameters is evaluated using seven point bi polar multi attribute scales. The product of beliefs and feelings on the same set of attributes is summed up to get the fishbein output. The variables included call drops, Network Congestion, Cross Connection, Call charge, clarity in voice, Rental charges, Connectivity, Value Added Services, Free Messaging, Talk Time, Scheme, Customer Care	Maximum possible value extracted by using the model is 84 and the least possible is -84 for each observation. This composite output for each observation has been collapsed to either one of the three categories i.e. -84 to -21, -20 to 20, and 21 to 84 to reflect negative, neutral and positive attitude towards the service providers respectively, under the assumption that the attitude of the respondents is normally distributed.
Imp C_t	Impulsive churns in time period t	Dichotomous question on intention to churn to a new service provider on impulse	Customer's willingness to churn on impulse is 1 0 otherwise
MB_t	Monthly billing in time period t	Amount of expenditure on the services. Four categories of t. Monthly billing were used i.e. INR < 500 pm, Rs.500-Rs.1000 pm, Rs.1000-2500 pm, and above Rs.2500 pm.	< 500 = 1 500-1000 = 2 1000-2500 = 3 > 2500 = 4
Churn t + 1	Intention to churn in time period t + 1	Dichotomous question on intention to churn the current service provider	Intention to churn, Yes = 1, 0 otherwise
CL_t	Customer loyalty in period t	Intention to recommend the service has been used as a proxy measure. Dichotomous question on intention to stay with the current service provider	Intention to recommend Yes = 1, 0 otherwise
C_{st}	Customer satisfaction in time period t	Satisfaction level with the current service provider.	Satisfied with the current service provider Yes = 1, 0 otherwise
A_t	Age of the respondent in time period t	Five categories of age were used 15-25 years, 25-35 years, 35-45 years, 45-55 years, 55 and above	15-25 = 1 25-35 = 2 35-45 = 3 45-55 = 4 55 + = 5

The variables used in the study are defined in table 1.1. Where, in eq. (1), CS_t is customer satisfaction with the service provider at a given time Wald's statistics is found to be highly significant indicating that the variables are useful for the model. AO_t is the attitude of the customer at the given time and has been calculated using the fishbein scores* and this also significantly explains churn taking place at 5% level of significance; whereas customer's intention to recommend (proxy measure of customer loyalty) is also quite useful component of the model as its Wald's statistics is found to be significant at 10% level of significance.

The overall significance of the model has been tested. The Hosmer-Lemeshow statistics calculated here indicates that the model adequately fits the data.

Model 1 thus captures the customer trust and commitment as a determinant of future churn (Garbarino and Johnson 1999; Morgan and Hunt 1994). It tests the relationship commitment (Bendapudi and Berry 1997; Morgan and Hunt 1994) i.e. the strength of the relationship with the customer on three critical parameters, customer satisfaction, and overall attitude (as defined above) and the resultant intention to recommend the service

provider to others i.e. word of mouth referrals. It assumes that the strength of the relationship could significantly trigger/control for churn. Model 1 shows significant effect of customer satisfaction, overall attitude and intention to recommend. Churn is thus found to decrease with satisfaction, positive attitude and intention to recommend.

$$Churn_{t+1} = \beta_0 + \beta_1 Imp\ C_t + \beta_2 MB_t + \beta_3 + \beta_4 AO_t + \beta_5 IR_{t+} \qquad (2)$$

$Imp\ C_t$ is the intention to churn on the part of the respondent and Wald's statistics indicated that this variable is highly significant at 5% level of significance. The intention to recommend of the customers also comes out to be a significant variable to study churn in the Indian telecom market. Age of the customer and his monthly billing also comes out to be significant in explaining the churn model fitted.

The model is highly significant as Hosmer-Lemeshow statistics shows that the data fits the model. Model 2 thus captures the customer's characteristics like monthly billing and age, along with the future behavioral intention expressed as intended impulsive switching and intention

to recommend; as a determinant of future churn. It assumes that customers may have varying tendencies to churn depending on their age, intensity of usage (measured by monthly billing), loyalty (as explained by intention to recommend) and impulsive churn (desire to experiment / shift on impulse) and intention to recommend (Boulding et al. 1993). Intention to recommend and impulsive churn are taken as the emotional i.e. affective triggers of churn. Churn is found to be decreasing with higher monthly billing, increasing with

$$\text{Churn}_{t+1} = \beta_0 + \beta_1 CD_t + \beta_2 NW_t + \beta_3 CC_t + \beta_4 CCHt + \beta_5 DS_t + \beta_6 RC_t + \beta_7 CON_t + \beta_8 VA_t + \beta_9 FM_t + \beta_{10} FT_t + \beta_{11} FV_t + \beta_{12} CC_t + \beta_{13} CS_t \qquad (3)$$

Model 3 captures thé specific functional aspects (along the lines of Verhoef 2003) of cellular services i.e. calculative commitment (Anderson and Weitz 1992; Dwyer, Schurr, and Oh 1987; Heide and John 1992), customer satisfaction (Fornell et al. 1996; Mittal and Kamakura 2001) and overall attitude (Ajzen & Fishbein, 1974) as determinants of customer churn. It assumes that calculative commitment, customer satisfaction and overall attitude are rational triggers of churn. Customer satisfaction CS_t, Call Drop, Network Congestion, Cross Connections and Rental charges are all highly significant variables to explain churn to a large extent.

The findings suggest that the internal triggers of churn defined here as existing gaps in service delivery could lead to significant increase in customer churn. The models discussed above are shown in table 1.2

5. Discussion and Implications

Customer churn is found to be determined by various factors. The three models discussed here aim at capturing three different aspects of the churn determinants. The first equation covers relationship strength of the customer with the service provider as a determinant of churn.

The second equation tests the affective triggers of churn i.e. emotional aspect of customer churn related problems. The third equation tests the rational triggers of customer churn. Churn is a reality in a dynamic market place that marketers have to live with. This paper attempts to profile the causal influences on churn i.e. the triggers of churn.

Table 1.2 Churn Models Results

Model – I	**R^2**
$Churn_{t+1} = 0.048T\ 1.290\ CS_t + 0.314AO_t + .210\ CL_t$	.585
(.000) (.042) (.015)	
Model – II : -	
$Churn_{t+1} = 0.402 + 0.391\ Imp\ C_t + ß_2\ MB_t + 0.496\ A_t + 0.340\ AO_t + 0.746\ IR_t$	.640
(.044) (.001) (.008) (.026) (.000)	
Model – III : -	
$Churn_{t+1} = 0.263 - 0.196\ CD_t - .196\ NW_t + 0.374\ CC_t + 0.13\ CCH_t - 0.011\ DS_t + 0.129$	.608
(.008) (.006) (.000) (.039) (.107)	
$RC_t + 0.342\ CON_t + 0.080\ VA_t + 0.090\ FM_t + 0.098\ FT_t + 0.125\ FV_t + 1.206\ CS_t$	
(.042) (.000) (.046) (.132) (.099) (.061) (.000)	

*The values in the Paranthesis denote the p values of the coefficients of the respective models.

Customer churn is found to be increasing with satisfaction. The results are consistent with Johnson and Fornell 1991, Fornell et al 1996, Mittal and Kamakura 2001. Customer satisfaction has been taken as a uni-dimensional scalar property in this study. Such a relationship effect not only supports the past researches but also opens vistas for further investigations in to the various functional and non functional determinants of such satisfaction. To the marketing organizations the implications are that a slight drop in prevailing satisfaction levels of the customers could lead to instant churn on the part of the customer.

Attitude of the customer towards the service provider captured by AOt is the composite output of a multi-dimensional scalar measurement of customer attitude on several churn inducing functional as well as non functional aspects of service delivery. The results support the linkages between customer attitude and churn. The relationship between the two is inverse and strong i.e. marginal change in customer attitude in any direction i.e. negative or positive can result in churn or retention respectively. The findings point to managing the triggers to churn and controlling for them.

Attitudes are shaped over a reasonable length of relationship, and have sufficient resistance to change. Effective CRM

strategies must continually establish the dialogue with the customer to track significant shifts in their attitude, because each moment of truth experience is capable of reinforcing the current attitude or changing it significantly.

The third measurement of relationship strength is the intention to recommend which again has been taken in the study as a uni-dimensional construct. We believe that intention to recommend could be used a sound proxy measure of customer loyalty. The results indicate a somewhat strong and inverse relationship between customer loyalty i.e. intention to recommend and future churn. Equation 1 indicates significant results i.e. future customer churn is significantly and inversely determined by the prevailing level of satisfaction, customer attitude and loyalty. This research makes an attempt to link the most vital three acid tests of relationship strength.

The study also explored the affective triggers of churn i.e. the emotional and behavioral aspects of churn. It is found that age and intensity of usage are very strong determinants of churn. Intensity of usage shows an inverse relationship with future churn i.e. higher the amount of monthly billing lower shall be the urge to churn; although age and future churn are directly related i.e. the older a customer gets more likely is he to churn (it may be noted that majority of our sample is in the age group of 25-55 i.e. earning).

These findings could thus be interpreted as; as the customer grows in stature and hierarchy, his tendency to ignore deficient customer services decreases, perhaps because the urgency of communicating and the dependence on efficient services increases. We welcome future researches to further investigate the phenomenon.

Stated churn i.e. churn if future services fail to satisfy is found to have a direct and strong relationship with future churn. Customer loyalty (i.e. intention to recommend) and attitude have a very strong relationship with future churn such that customers who do not wish to recommend their existing service provider to someone close, are most likely to churn.

The findings have clear implications for churn management. Any CRM programme may distinguish between the customers not only on the basis of their monthly billing or nature of connection (institutional or retail), but the intended and stated attitude and behaviour. It seems imperative to hold continuous dialogue with the

customer.

The heavier user may be addressed differently from the light user. As also people could be segmented on the basis of their positions in organizations and urgency of mobile phone usage. Profiles of customers with not just heavy usage, but also high dependence on cellular phones should be definitely served using more personalized and frequently administered CRM solutions. Because these heavy customers if retained and kept loyal, could themselves ensure steady revenue streams to the service providers.

The third equation reflects an interesting finding that the critical factors to ensure customer retention in high growth markets like India; where current penetration levels are very low by global standards (mobile density is under 10% as of now); the customer is tempted to churn not because of basic call quality, as the three purely call quality related variables like network congestion, call drop and disturbance come out to be statistically insignificant as per our model; and customer satisfaction as well as the costs associated with the connection and add ons are reported as highly significant statistically. The marketing implications of this finding are that the customer perceives call quality to

be homogenous across service providers at this stage and hence it can not qualify as a strong determinant of customer churn. However, the cost of the connection is a strong determinant of future churn, such that upward movement in cost to the customer could result in a loss of market share. We would welcome future researches to address the cost benefit analysis of retention vs. churn from the customer's perspective. These symptoms are reflecting a near perfect price elasticity situation. When the call quality is perceived to be homogeneous such a behavior is expected from the customer.

On the other hand allurements in the form of incentives, offers and freebies can significantly influence the future churn. The marketing implication of these findings is to either differentiate the market offering in the eye of the customer regularly, or to create competitive tariff plans as well as to keep the customer humored by continuous supply of surprises.

The majority of our respondents were low billing pre paid customers (this is found to be true of mobile users in emerging economies at large); therefore the ARPU (average revenue per user) in India is among the lowest in the world.

As the market stabilizes the share of mobile telephony is bound to rise; the future points to better ARPU realizations. But until then, engaging the customer's attention is the challenge ahead. As already suggested above the future researches in this area may address issues like determinants of customer satisfaction; cost-benefit analysis of churn vs staying decision on the part of the customer, estimation of the propensity to churn or stay on.

However, the limitations of our study was the use of customer satisfaction and loyalty as uni-dimensional constructs, we hope that the future researches on the theme would address both these measures as composite indices. The other limitation was the confinement of the study to the northern India states only.

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References

Anders Gustafsson, Michael D. Johnson, & Inger Roos; the Effects of Customer Satisfaction, Relationship Commitment Dimensions,and Triggers on Customer Retention *Journal of Marketing* Vol. 69 (October 2005), 210-218

Anderson, Erin and Barton Weitz (1992), "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," *Journal of Marketing Research,* 29 (February), 18-34.

Baron, Reuben M. and David A. Kenny (1986), "The Moderator Mediator Variable Distinction in Social Psychological Research," *Journal of Personality and Social Psychology,* 51 (6), 1173-82.

Bendapudi, Neeli and Leonard L. Berry (1997), "Customers' Motivations for Maintaining Relationships with Service Providers," *Journal of Retailing,* 73 (1), 15-37.

Bolton, Ruth N and Katherine N. Lemon (1999), "A Dynamic Model of Customers' Usage of Services: Usage as an Antecedent and Consequence of Satisfaction," *Journal of Marketing Research,* 36 (May), 171-86.

Bolton, Ruth N. (1998), "A Dynamic Model of the Duration of the Customer's Relationship with a Continuous Service Provider: The Role

of Satisfaction," *Marketing Science,* 17 (Winter), 45-65.

Boulding, William, Ajay Kalra, Richard Staelin, and Valarie A. Zeithaml (1993), "A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions," *Journal of Marketing Research,* 30 (February), 7-27.

Buzzell, Robert D., Bradley T. Gale, and Ralph G. M. Sultan (1975), "Market Share A Key to Profitability," Harvard Business Review, 53 (January-February), 97-106.

Byron Sharp, Erica Riebe, John Dawes and Nick Danenberg Marketing Bulletin, 2002, 13, Research Note 1 A Marketing Economy of Scale – Big Brands Lose Less of their Customer Base than Small Brands

Colombo, Richard, Andrew Ehrenberg, and Darius Sabavala (2000), "Diversity in Analyzing Brand-SwitchingTables: The Car Challenge," *Canadian Journal of Marketing Research,* 19, 23-36.

criteria. *Psychological Review, 81(1),* 29-74.

Cronin, J.J. Jr, Brady, M.K., Hult, G.T.M. (2000), "Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intention in service environments", *Journal of Retailing,* 76(2), 193-218.

Dwyer, F. Robert, Paul H. Schurr, and Sejo Oh (1987), "Developing Buyer‐Seller Relationships," *Journal of Marketing,* 51 (April), 11-27.

Edvardsson, Bo and Tore Strandvik (2000), "Is a Critical Incident Critical for a Customer Relationship?" *Managing Service Quality,* 10 (2), 82-91.

Ehrenberg, Andrew S.C., Mark D. Uncles, and Gerald G. Goodhardt (2003 (forthcoming)), "Understanding Brand Performance Measures: Using Dirichlet Benchmarks," Journal of Business Research.

Ehrenberg, Andrew S.C., Mark D. Uncles, and Gerald G. Goodhardt (2003), "Understanding Brand Performance Measures: Using Dirichlet Benchmarks," *Journal of Business Research.*

Fishbein, M & Ajzen, I. (1974), Attitudes towards objects as predictors of single and multiple behavioural

Fornell, Claes (1992), "A National Customer Satisfaction Barometer: The Swedish Experience," *Journal of Marketing,* 56 (January), 6-21.

Fornell, Claes and David F. Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables

and Measurement Error," *Journal of Marketing Research,* 18 (February), 39-50.

Fornell, Claes, Michael D. Johnson, Eugene W. Anderson, Jaesung Cha, and Barbara Everitt Bryant (1996), "The American Customer Satisfaction Index: Nature, Purpose, and Findings," *Journal of Marketing,* 60 (October), 7-18.

Fullerton, Gordon (2003), "When Does Commitment Lead to Loyalty?" *Journal of Service Research,* 5 (May), 333-44.

Garbarino, Ellen and Mark S. Johnson (1999), "The Differential Roles of Satisfaction, Trust, and Commitment in Customer Relationships," *Journal of Marketing,* 63 (April), 70-87.

Gardial, Sarah Fisher, Daniel J. Flint, and Robert B. Woodruff (1996), "Trigger Events: Exploring the Relationships Between Critical Events and Consumers' Evaluations, Standards, Emotions, Values and Behavior," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior,* 9, 35-51.

Gerpott, T.J., Rams, W., Schindler, A. (2001), "Customer retention, loyalty, and satisfaction in the German mobile cellular telecommunications market",

Telecommunications Policy, 25, 249-269.

Guadagni, Peter M. and John D.C. Little (1983), "A Logit Modelof Brand Choice Calibrated on Scanner Data," *Marketing Science,* 2 (Summer), 203-238.

Gundlach, Gregory T., Ravi S. Achrol, and John T. Mentzer (1995), "The Structure of Commitment in Exchange," *Journal of Marketing,* 59 (January), 78-92.

Gustaffson Anders, Johnson Michael. D., & Inger Roos, the effects of customer satisfaction, relationship commitment dimensions and triggers on customer retention, *Journal of Marketing Research,* Vol. 69 (October 2005), 210-218

Hansen, Håvard, Kåre Sandvik, and Fred Selnes (2003), "Direct and Indirect Effects of Commitment to a Service Employee on the Intention to Stay," *Journal of Service Research,* 5 (May), 356-68.

Heejin Lim, , Richard Widdows, Jungkun Park (2006), "M loyalty: winning strategies for mobile carriers" *Consumer Journal of Consumer Marketing,* 23(4), 208-218.

Heide, Jan and George John (1992), "Do Norms Matter in Marketing Relationships?"

Journal of Marketing, 56 (April), 32-44.

Hjorth, Urban J.S. (1994), *Computer Intensive Statistical Methods: Validation Model Selection and Bootstrap.* London: Chapman& Hall.

Johnson, Michael D, Anders Gustafsson, Tor Wallin Andreassen, Line Lervik, and Jaesung Cha (2001), "The Evolution and Future of National Customer Satisfaction Index Models," *Journal of Economic Psychology,* 22 (April), 217-45.

Johnson, Michael D. and Claes Fornell (1991), "A Framework for Comparing Customer Satisfaction Across Individuals and Product Categories," *Journal of Economic Psychology,* 12 (2), 267-86.

Keaveney, Susan M. (1995), "Customer Switching Behavior in Service Industries: An Exploratory Study," *Journal of Marketing,* 59 (April), 71-82.

Kim, Hee Su, Yoon, Choong Han Determinants of subscriber *churn* and *customer* loyalty in the Korean mobile telephonymarket, Telecommunications Policy; Oct/Nov2004, Vol. 28 Issue 9/10, p751-765, 15p

Kim, M., Park, M., Jeong, D. (2004), "The effects of customer satisfaction and

switching barrier on customer loyalty in Korean mobile telecommunication services", *Telecommunications Policy,* 28, 145-159.

Kohli, Ajay K., N. Venkatraman, and John H. Grant (1990), "Exploring the Relationship Between Market Share and Business Profitability," *Research in Marketing,* 10, 113-133.

Kumar, N., J.D. Hibbard, and L.W. Stern (1994), "The Nature and Consequences of Marketing Channel Intermediary Commitment," Working Paper No. 94-115. Cambridge, MA: Marketing Science Institute.

Lee, J., Lee, J., Feick, L. (2001), "The impact of switching costs on the customer satisfaction loyalty link: mobile phone service in France", *Journal of Services Marketing,* 15(1), 35-48.

Mittal, Vikas and Wagner Kamakura (2001),"Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effects of Customer Characteristics," *Journal of Marketing Research,* 38 (February), 131-42.

Moorman, Christine, Rohit Deshpandé, and Gerald Zaltman (1993), "Factors Affecting Trust in Market Relationships," *Journal of Marketing,* 57 (January),

81-101.

Morgan, Robert M. and Shelby D. Hunt (1994), "TheCommitment‐Trust Theory of Relationship Marketing," *Journal of Marketing,* 58 (July), 20-38.

Oliver, Richard L. (1999), "Whence Consumer Loyalty?" J*ournal of Marketing,* 63 (Special Issue), 33-44.

Rao, Ambar G. and Peter B. Miller (1975), "Advertising/Sales Response Functions," Journal of Advertising

Roos, Inger (2002), "Methods of Investigating Critical Incidents: A Comparative Review," *Journal of Service Research,* 4 (February), 193-204.

Roos, Inger (1999), "Switching Processes in Customer Relationships," *Journal of Service Research',* 2 (August), 376-93.

Roos, Inger , Bo Edvardsson, and Anders Gustafsson (2004), "Customer Switching Patterns in Competitive and Non CompetitiveService Industries," *Journal of Service Research,* 6 (February), 256-71.

Scherer, Frederick and David Ross (1990), Industrial Market Structure and Economic Performance (3rd ed.). Boston: Houghton Mifflin.

Seiders, Kathleen, Glenn B. Voss, Dhruv Grewal, and Andrea L. Godfrey (2005),"Do Satisfied Customers Buy More? Examining Moderating Influences in a Retailing Context," *Journal of Marketing,* 69 (October), 26-43.

Sharp, Byron and Malcolm Wright (1999), "There are Two Types of Repeat Purchase Markets," in 28th European Marketing Academy Conference Vol. Cd proceedings. Berlin, Germany: Institute of Marketing, Humboldt University.

Smith, Amy K., Ruth N. Bolton, and Janet Wagner (1999), "A Model of Customer Satisfaction with Service Encounters Involving Failure and Recovery," *Journal of Marketing Research,* 36 (August), 356-72

Szymanski, David M., Sundar G. Bharadwaj, and P. Rajan Varadarajan (1993), "An Analysis of the Market Share Profitability Relationship," *Journal of Marketing,* 57 (July), 1-18.

Verhoef, Peter C. (2003), "Understanding the Effect of Customer Relationship Management Efforts on Customer Retention and Customer Share Development," *Journal of Marketing,* 67 (October), 30-45.

Yang, Z., Peterson, R.T. (2004), "Customer perceived value, satisfaction, and loyalty: the role of switching costs", *Psychology & Marketing,* 21(10), 799-822.