Factors affecting the choice of cell phone

The mobile phone industry is one of the most dynamic industries that exist in the country today. This can be attributed to the constant change and competitiveness that the market has. Thus, it is vital that we look into the key consumer buying decision process and cast light on the factors that finally determine consumer choices between different mobile phone brands. On this basis, this report deals with consumers choices in mobile phone markets by studying factors that influence the need to acquire new mobile phones. With the use of a series of in-depth interviews followed by a survey of 144 respondents, it was found that although the choice of a mobile phone is a subjective choice situation, there are some general factors that seem to guide the choices. The studies show that while price does not have a huge impact in choice of brand, style, connectivity and existing brands are the most influential factors affecting the actual choice between brands

Introduction

According to Garnter Inc, the sales of mobile devices in in India are forecased to reach 138. 6 million by the end of 2010, an increase of 18. 5 percent over 2009 sales of 117 million units. The mobile handset market is also likely to show steady growth through 2014 when end user sales could surpass 206 million units. Over the last few years, the Indian cellular market has been very dynamic. Many new carriers and many new local mobile device manufacturers are looking to penetrate into this dense market. Most new entrants are targetting the bottom of the pyramid since this is where the demand lies. As a result, we are witnessing intense competition and price wars. Apart from that, it becomes imperative for companies to come out with modern devices that meet the requirements of the customers. Previously

dominated only by a few players such as Nokia, Sony Ericcson and Samsung, the market is now wide open for a lot of small companies.

With the advent of 3G technology to India, it is highly likely that the scramble for buiding novel mobile devices will aggravate. The Indian cellular market is highly voice-centric with just 10 percent of carriers' revenue coming from data services. Within that, 85 percent of revenue comes from Short Message Service, leaving less than 2 percent of overall carriers' revenue coming from data access on mobile devices. This corroborates the fact that the Indian mobile device market is driven by the lowest rates in the world and dominated by low-cost devices, which account for 80 percent of overall sales in India in 2010. Although 3G technology has not been introduced in India yet, 3G device sales are expected to increase the total sales of mobile devices. The need to adapt to the high-speed 3G networks is bringing in more challenges in terms of innovation and keeping up with fast changing consumer demand. Therefore it is vital towards identifying the key features that customers require before purchasing a cell phone. This market research project would help in identifying the aforementioned requirement and rank the key attributes that customers require.

Purpose of Study

The purpose of this study is to examine mobile phone usage and its users' motivations and gain more information about characteristics common to the mobile phone user. As a manufacturer, one needs to know the importance of various features such as Hedonic, Brand Equity, Promotional Campaign, Price and Familiarity on sales. By performing market research, the manufacturer can come to know the significance of these factors and the weights given to

them by the customers before deciding upon a product. Based on these factors, a manufacturer can make following decisions to boost his sales:

Include factors currently missing in the product, but important in the eyes of the customer.

Budget to allocate for various promotional campaigns and advertisements.

Remove factors which neither leads to satisfaction and neither causes dissatisfactions when removed.

Trade off between price and features to be included in the product.

How to segment the product, to suite the requirements of various customer segments and how much expenditure to incur on each of them.

Thus, this paper investigates the relationship between that motivation and the potential applications of mobile phone service. Understanding consumers' motivations for accessing their mobile phones is important to the success of m-commerce. This study significantly contributes to our understanding of why and how consumers use their mobile phones. Most commonly, the natural function of mobile phones seems to be communication with others, as well personal business use and entertainment. The motivation framework is useful for assessing consumers' likely uses of mobile phones and its m-commerce interfaces. This study, therefore, provides empirical confirmation that the mobile phone can be treated as a new multidimensional marketing communication technology used to fulfill wellunderstood needs in novel ways.

Advances in mobile phone technology and applications have led to the development of mobile commerce and involve location based m-commerce. It is important for business managers to create opportunities for building a new marketplace. This progress could become a major issue in the academic field, since how and why consumers use certain communications media remains an important field of study. Coyle and Kalakota define m-commerce as the use of wireless devices to conduct electronic business transactions, such as product ordering, fund transfers and stock trading. Many marketers and companies predict that people will purchase goods and services via their cell phones. In addition, the number of mobile phone users has continued to increase rapidly as mobile commerce gains recognition as a potential marketing tool. Some scholars think that mobile platform enable people to interact with and access anyone at any time and the mobile internet technology has greater potential to build a strong customer relationship and thereby increase the revenue stream. Hence we can say that primary function of mobile phone could extend to transaction between individuals and suppliers at different companies and stores.

This study identifies the motivations of mobile phone users and how effectively a particular mobile phone satisfies those needs. The main purpose of this study is twofold:

1) To examine mobile phone users' motivations and

2) To identify the potential applications of mobile phone services based on the motivations of mobile phone users.

Literature Review

Mobile services can be classified in many ways. One of the easiest is to distinguish between text messaging services, such as push and pull messages, and other more advanced forms of mobile services. These include Multimedia Messaging Service (MMS), accessing the Web with XHTML browsers, email, JAVA and WAP, which is used for accessing the Internet on the mobile. > From the point of view of the customer, mobile services will enable the user to make purchases, subscribe to services, access news and other information, and pay bills with the help of mobile communication devices such as mobile phones and PDAs.

When looking at the study conducted on the features of the mobile phones used by the consumers, majority of the studies are conceptual and limited to specific areas such as technological usage. Many scholars have proposed that there is a need in the field for more rigorous studies, namely ones that give a deeper understanding of consumer behaviour in general and differences in user characteristics and the demographics of the consumers. To date, there are only a few large-scale consumer studies available on how consumers use different text messaging services. Partly due to the lack of extensive studies, there is still some confusion in the literature regarding the impact of socio demographic factors or the impact of handset technology on mobile service usage. Many authors propose that socio-demographic factors are not significant determinants of mobile service usage. However, this contrasts with other scholars and theories, such as the diffusion theory and recent studies on mobile service usage and demographics. The lack of consensus on this issue indicates that further studies are required in order to

investigate the impact of demographics on the use and adoption of mobile services.

Another gap in the literature relates to the fact that previous studies have been conducted some time ago, which means that they might not be representative of the present situation. The objective of this study is to examine the interaction between consumers' mobile phone and mobile technology usage, thus contributing to the existing knowledge of the use of mobile services. In other words, this research attempts to contribute to our understanding of how mobile phone users' handset models affect their use of various mobile services. We limit our analyses to the extent of how consumers use various features in their mobile devices. The study continues, then, with a discussion of the hypothesis and the rationale behind them.

Further we discuss about the research method and results. Finally, we provide implications to both theory and practice; outline the main limitations of the study and present suggestions for further research.

Focus on Mobile Phone Usage by Youngsters

Today, mobile phone is not just a substitute of land line telephone, but more than that. Users can use it not only for calling and messaging but for sending pictures, updating sports and news, playing games, listening to music, watching movies, photography, transferring data and pictures, doing calculation, reminding important days and organizing their day to day activities. Scholars state that mobile phone is used to facilitate several functions. It helps users to know the news headlines, TV and movie listings, horoscopes, directory and address, weather forecasts, sports scores and

dictionaries. In addition, users can make inquires for banking and flight or train schedule. Message collecting, circulating chain messages and collective writing and reading the messages are increasingly being performed by them. Many young people copy their messages into calendars, diaries or special notebooks designed by handset manufacturers.

Young people generally become tech-savvy after possessing a mobile phone. They frequently use it for calling, messaging and several other functions such as downloading software, playing games and listening to music, updating news and sports scores. It is important to mention that consumers differ in terms of using the mobile phone, where the frequency of use is determined by several demographic and behavioural variables.

According to Ling and Yttri (2002), mobile phone is used by young people to coordinate activities as well as to organize a range of interactions taking place in one's daily life.

Consumers use it to send and receive personal messages that range from birthday greetings to vulgar jokes. In addition, they also mention that the mobile phone has taken multiple forms of entertainment and communication among young people. It is observed that mobile phones perform vast functions. Young people as mobile users, receive or make six to eight phone calls per day, and send or receive more or less, the same number of messages. Several other functions which are mostly used are: alarm, calendar, calculator, and exchange of new logos and ring tones. One of the important findings of the study is that young people have graduated fast in terms of using mobile phones for more than the basic functions of calling and

messaging. Consequently, telecom service providers begin to use value added service to lure the tech-savvy youth. Similarly, handset manufacturers have started to incorporate vast number of attributes to position themselves in the market uniquely (Wilska, 2003). A recent study done by Grant and O' Donohoes (2007) reveals that mobile will become even more indispensable for youngsters as it is enabled to perform more functions.

References for Literature Review

Article on ' The Impact of Mobile phone capabilities on mobile service usage, Empirical Evidence from Finland' – Jaakko Sinisalo, Heikki Karjaluoto

Understanding Mobile phone usage pattern among college goers – Subhash Jha

Mobile phone users' behaviours: The Motivation Factors of mobile phone users – Chang Hyun Jin, Jorge Villegas

Research Approaches to Mobile Use in the Developing World: A Review of the Literature – Jonathan Donner

General patterns of Cell phone usage among college students: A four state study – Jeff W. Totten, Thomas J. Lipscomb, Roy A. Cook, William Lesch

Qualitative Analysis

To conduct qualitative analysis of the topic, it was decided that in-depth interview would be the ideal solution considering that we were measuring factors for purchase decision. Another important driver was the need to understand the reasoning process followed by customers to arrive at a particular decision. In-depth interview is a qualitative analysis technique that

is designed to reveal the underlying motives of an interviewee. It is conducted one-on-one and lasts between 30 – 45 minutes. It is considered as one the most flexible methods of analysis as it provides an interviewer the opportunity to change direction of thought flow of the subject. Also, when asking questions it becomes easier to note subtle changes in respondent's behaviour in real time.

In our qualitative analysis phase, in order to formulate the hypothesis we conducted in-depth interviews with 5 respondents. The setting for interview was selected to create comfortable environment for the respondents. Interviews were carried out for 30 -40 minutes each.

Following were the themes of questions in the interview:

Attributes of cell phones

Opinion about brands in cell phones

A walk though of cell phone purchase decision

From the interviews it was concluded that brand, price and familiarity with an existing brand or interface were some the important factors affecting cell phone purchase decision. Our hypotheses were mainly derived from this knowledge and knowledge gathered through literature review.

Hypotheses

Hypothesis 1: Importance of Price in cell phone purchase decision.

Questions used:

Allot points to the following factors according to their importance in your purchase decision (PRICE)

Scale: (Hundred Point)

Price is an essential factor when comparing two cell phones with similar features?

Hypothesis 2: Brand loyalty influences consumer's choices of cell phones

Questions used:

When buying a new phone, would you prefer buying the same brand of phone or check out a new phone?

For a given price range, how willing would you be to buy a phone with additional features offered by a new brand.

Allot points to the following factors according to their importance in your purchase decision.

(BRAND)

Scale: (Hundred Point)

Hypothesis 3: Consumers choices of cell phones are influences by advertisements

Questions used:

Using celebrities in ads for cell phones would enhance the brand reputation.

Do you purchase a cell phone after assessing the marketing campaign of the company?

Hypothesis 4: Consumers consider Cell phone design to be more important than its style.

Questions used:

Features in a cell phone are more important that its design/style.

Would you be willing to pay additional price for a stylish looking cell phone compared to a not so stylish cell phone with similar features?

Allot points to the following factors according to their importance in your purchase decision.

(DESIGN)

Scale: (Hundred Point)

Allot points to the following factors according to their importance in your purchase decision.

(FEATURES)

Scale: (Hundred Point)

Hypothesis 5: Familiarity with a brand impacts purchase decisions.

Questions used:

Allot points to the following factors according to their importance in your purchase decision.

(FAMILIARITY)

Scale: (Hundred Point)

Scales Used in questionnaire design

Likert

Advantage of Likert Scale:

An effective method for obtaining consistent survey responses is to use a Likert scale. A Likert Scale allows a participant to provide feedback that is slightly more expansive than a simple close-ended question, but that is much easier to quantify than a completely open-ended response.

A Likert Scale lists a set of statements (not questions) and provides a 5-point or 6-point scale for which the participant can rate his/her level of agreement or disagreement with the statement.

Because there are a limited number of responses, each response can be translated into a numerical value that can be used for easier statistical data analysis.

Hundred Point Scale

Question Used:

Allot points to the following factors according to their importance in your purchase decision.

Brand

Price

Design

Features

Familiarity

Quantitative Analysis

In order to perform data analysis on the responses collected we have used factor analysis and Multiple linear regression techniques.

Factor analysis is used to describe variability among observed variables by grouping the correlated variables in a potentially lower number of unobserved variables called factors . It helps in reducing the number of observed variables. The observed variables are represented as linear combinations of the potential factors, plus " error" terms. Factor analysis originated in psychometrics, and is extensively used in behavioural sciences, social sciences, marketing, product management, operations research, and other applied sciences that deal with large quantities of data.

Multiple Linear regressions give the relationship between dependent variable and independent variables and contribution of each independent variable towards the dependent variable which is reflected in its level of significance. In order to determine the contribution of each factor such as brand loyalty, price, familiarity, style, promotion and advertising on choice of brand and price

The questionnaire consisted of 13 different questions to measure the impact of various factors on purchase decision. We decided to conduct factor analysis of the 13 different responses in order to find out any correlation between these responses which could potentially affect the purchasing

decision of the consumer and grouping the correlated variables under factors.

Component matrix derived from factor analysis on attributes

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Using principal component analysis technique on SPSS it was observed that 6 distinct factors emerged. These factors are highlighted in the table above. Factors were labelled as the following based on grouping of highest loaded factors:

Brand loyalty

Price

Familiarity

Style

Promotion and

Advertising

Questions contributing towards factors recognized

Brand loyalty:

Brand: Allot points to the following factors according to their importance in your purchase decision. (Out of 100)

For a given price range, how willing would you be to buy a phone with additional features offered by a new brand?

When buying a new phone, would you prefer buying the same brand of phone or check out a new phone?

Price

Price: Allot points to the following factors according to their importance in your purchase decision.

Price is an essential factor when comparing two cell phones with similar features

Familiarity

Familiarity: Allot points to the following factors according to their importance in your purchase decision.

Style

Features in a cell phone are more important that its design/style

Would you be willing to pay additional price for a stylish looking cell phone compared to a not so stylish cell phone with similar features

Promotion

Do you generally buy a cell phone when it is accompanied with a promotional offer or a discount?

Advertising

Using celebrities in ads for cell phones would enhance the brand reputation

Do you purchase a cell phone after assessing the marketing campaign of the company?

As our next step in data analysis we carried out a multiple linear regression.

Multiple linear regression with dependent variable as choice of brand

Table 2

Coefficients

Model

Unstandardized Coefficients

Standardized Coefficients

t

Sig.

B

Std. Error

Beta

1

(Constant)

2. 271

. 145

15. 667

. 000

REGR factor score

Brand loyalty

-. 576

. 145

-. 307

-3. 963

. 000

REGR factor score price

-. 250

. 145

-. 134

-1. 721

. 087

REGR factor score

Familiarity

-. 416

. 145

-. 222

-2. 861

. 005

REGR factor score style

. 174

. 145

. 093

1. 195

. 234

REGR factor score

Promotion

-. 128

. 145

-. 068

-. 882

. 379

REGR factor score

advertising

-. 020

. 145

-. 010

-. 134

. 893

From the table it can be observed that significant factors that affect the choice of brand of a cell phone are the brand loyalty that a customer has and familiarity of features.

Multiple linear regressions with dependent variable as price

Table 3

Coefficients

Model

Unstandardized Coefficients

Standardized Coefficients

t

Sig.

B

Std. Error

Beta

1

(Constant)

2. 479

. 077

32. 309

. 000

REGR factor score

Brand loyalty

-. 259

. 077

-. 264

-3. 366

. 001

REGR factor score price

-. 102

. 077

-. 104

-1. 324

. 188

REGR factor score

Familiarity

-. 124

. 077

-. 126

-1. 605

. 111

REGR factor score style

. 203

. 077

. 206

2. 631

. 009

REGR factor score

Promotion

-. 110

. 077

-. 112

-1. 433

. 154

REGR factor score

advertising

-. 079

. 077

-. 080

-1. 027

. 306

Please note that the data from above regression indicates that customer wiliness to pay additional price is mainly impacted by brand loyalty and style quotient of the cell phone.

It was observed that our initial hypothesis of choice of brand being strongly correlated with brand loyalty and familiarity with features were proved correct. However, our hypothesis that customer purchase decision was based on advertising campaigns, style and promotional activities were rejected.

Hence the recommendation is to improve a customer's experience by enhancing brand equity and by retaining the basics of user interface in order to maintain or enhance customer comfort level while switching phones. It seems that businesses can cut down on their advertising and promotional activities (Non-core activities) as there is a lack of evidence indicating their impact on choice of phone. It can also be inferred that a customer would be inclined towards a brand due to its familiarity. However, an increase in price may have adverse effects on customer loyalty.

Factor Analysis for Cell Phone Features:

Through our secondary research we identified the need for following features in a cell phone.

Phone Calls, Ring Tone, Games, Calendar, MMS, Connectivity, Address Book, SMS, Calculator, Mp3 Player, Camera, Radio Reminder, Clock.

On account of around 150 responses from the people, we decided to perform a factor analysis to eliminate common factors and group data that causes similar impact. Since some of the features could be clubbed together, a factor analysis was feasible. After performing the factor analysis our output was as follows.

Rotated Component Matrixa

Table 4

Component

1

2

3

4

5

Phone calls:

. 031

. 116

. 757

. 092

. 087

Ringtones:

-. 032

. 121

-. 189

. 785

. 127

Calendar:

. 149

. 559

. 146

. 326

. 035

Games:.

. 594

. 145

-. 153

. 080

. 171

MMS:.

. 441

. 376

-. 365

. 170

. 229

Connectivity (bluetooth/WiFi):

. 771

. 082

. 093

. 051

-. 008

Address book:

. 037

. 125

-. 001

. 061

. 788

SMS:

. 052

-. 007

. 391

-. 064

. 661

Calculator

. 067

. 537

. 080

. 272

. 313

MP3 Player:

. 672

. 016

. 164

. 342

-. 039

Web Connectivity (GPRS / EDGE):

. 815

. 100

-. 049

-. 300

-. 070

Camera:

. 581

-. 332

. 290

. 369

. 143

Radio:

. 197

. 224

. 199

. 578

-. 125

Reminders/notes:

. 041

. 778

. 173

-. 035

-. 009

Clock/Alarm:

. 022

. 210

. 701

-. 049

. 146

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

The output clearly shows that the emergence of 5 factors and the most significant factors are clearly shown in yellow. The most significant factors are those that have a value that is greater than 0. 6. These factors

contribute towards influencing the purchase of a cell phone in a user. From the above figure we find out that the most significant factors together contribute towards cell phone choice. Factor 1 showcases the importance of connectivity in buying a cell phone. Along similar lines, we find that " To Do Features", Call Clarity, Value Added Services and Fundamental phone features are the next most significant factors that influence the choice of a cell phone. Having identified these factors it is vital towards identifying what impact does price or brand have on these feature factors.

Therefore in order to achieve this, we adopted a Multiple Linear Regression Analysis to identify the impact of our Dependent Variable on the Features. After running MLR, we obtained the following output.

Table 5

Model

Sum of Squares

df

Mean Square

F

Sig.

1

Regression

24. 150

5

4. 830

5. 827

. 000a

Residual

113. 557

137

. 829

Total

137. 706

142

a. Predictors: (Constant), REGR factor score 5 for analysis 7, REGR factor score 4 for analysis 7, REGR factor score 3 for analysis 7, REGR factor score 2 for analysis 7, REGR factor score 1 for analysis 7

b. Dependent Variable: Please select the price of cell phone that you currently own

Table 6

Model

Unstandardized Coefficients

Standardized Coefficients

t

Sig.

B

Std. Error

Beta

1

(Constant)

2. 483

. 076

32. 607

. 000

REGR factor score 1 for analysis 7

. 393

. 076

. 399

5. 137

. 000

REGR factor score 2 for analysis 7

-. 067

. 076

-. 068

-. 873

. 384

REGR factor score 3 for analysis 7

-. 071

. 076

-. 072

-. 929

. 354

REGR factor score 4 for analysis 7

-. 011

. 076

-. 011

-. 141

. 888

REGR factor score 5 for analysis 7

-. 080

. 076

-. 081

-1. 047

. 297

a. Dependent Variable: Please select the price of cell phone that you currently own

From the above table we clearly find that only Factor 1 has an impact on the behaviour of people. Factor 1 represents connectivity and this new hypothesis was further achieved in addition to the existing hypothesis mentioned at the beginning of the report.

Willingness to pay additional price for connectivity features – Proved

Recommendations

In tune with the current day and age, it is vital that cell phone manufacturers have the latest connectivity features and chips embedded in their cell phone. This would help increase the chances of sales and thereby increase revenue. New service providers can think of packaging connectivity plans with the phone thereby increasing chances of sales.

Limitations of the study

Despite our in-depth research methodology, we found out that there are some limitations in our research setting. For example, general limitations are raised in regard to the age group of the respondents. The data is highly skewed between the age group of 18-35. This does not provide a perfect representation of the sample set. It should be noted that some of the data collected could be biased and very specific. Also the fact that we used a majority of student sample limits broader generalizations of the findings. Perhaps the most important limitation concerning this study is the relatively small sample size, which makes it difficult to generalize the findings. More research is needed to leverage the findings and provide better and more in-depth implications for both theory and practice. To specify, the research presented measured its subjects' perceptions of different factors affecting their choice of a mobile phone model at a given point in time. In the future