

Improving Customer Relationship Management Using Data Mining Technique in Direct to Home (DTH) Television Sector

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ABSTRACT- *Customer Relationship Management (CRM) refers to the tools that help organization to maintain customer relationships in a structured way. Data Mining is the process that uses a variety of data analysis techniques to generate new rules & patterns and describe the relationships in data that may be used to make accurate forecast for future. It can help to select the right persons on who to be focus*

.Customer satisfaction plays an important role in any organization to improve the CRM. The purpose of this paper is to maintain personal and profitable relationship between DTH (Direct To Home) television providers and customers forever by using segmentation, classification and clustering technique of data mining .This study is going to find out valued DTH customers and offering them some extra packages as well as It focuses on some value added services, like to develop pack on hourly basis, to avoid unnecessary channels cost, to improve customer service and satisfaction, and to offer channels according to customer requirements in affordable price.

Keywords: *CRM, Data mining techniques: segmentation, classification and clustering technique, DTH (Direct to Home) television.*

1. INTRODUCTION

Customer Relationship Management (CRM) is a process which creates the business strategy to build a long term and profitable relationship with the customer. Customer Relationship management (CRM) is an important management technique, the reasons for the rise of CRM and analyses its role on enterprise management through implementing database marketing and data mining strategies, based on information technology, customer relationship management may facilitate companies to build long-term customer relationship, maintain customer loyalty, and achieve competitive advantage and sustainable development.

Data mining:

Data mining is the extraction of meaningful information from huge amount of databases and finding out valued customers for investigating future behaviour of customers [5]. Already data mining techniques are used in banking, marketing,

mobile telecommunication system, automobile sector, health system ecommerce for customer relationship management. Actually it plays very important role in customer relationship management in any sector, so in this research it plays role in DTH service for maintaining profitable relationship with DTH customer. Data mining involves typical use of predictive modelling, forecasting and descriptive modelling as key element.

DTH stands for “Direct to Home” television services and is defined as the receiving satellite signals on individual Dish TV. Nowadays DTH is a very big source of entertainment. In India there are near about 7 players providing DTH services to the customer are given in table 1[13].

| Sr. No | Players |
|--------|---------------------|
| 1 | DD Direct Plus |
| 2 | Reliance Digital TV |
| 3 | Airtel Digital TV |
| 4 | Sun Direct |
| 5 | Dish TV |
| 6 | Tata Sky |
| 7 | VideoconD2H |

Table 1

In above rank 2 to 7 players are private means providing paid services on customer demand. There are 18 million DTH subscriber households in India.

In current system services provided by DTH providers are not up to the mark to keep customers more satisfied and maintaining profitable relation with them for forever, so some value added services DTH providers need to provide because of that most of the customers will attract towards them and that will be more beneficial to DTH providers. Providing prompt customer service in case of technical disturbances is also a big issue in current as well as they are applying high basic charges to any disturbances.

Nowadays Day basis, month basis, six months and year basis recharge packs are available in DTH market in this there is wastage of pack in case of technical disturbances, environmental affects (i.e. Cloudy environment, rainy season), During night hours and when we will be out of home. Here that can be overcome by hourly basic pack and through this proper utilization of channels is possible. It's like mobile recharge. (I.e. No Use no charge)

In this research data mining techniques will be

used to find out valued customers and offered them by some extra DTH services like different festival packs (i.e. Diwali Dhamaka, Sunday Pack, Vacation Pack and all) as well as minimum 2 to 3 services will be offered freely without any basic cost because of this customers will be more satisfied and they will happily continue their service.

II. RELATED WORK

HaiYingXie in 2009 focused using of data mining technology in the travel agency customer relationship management [15]. In famous cosmetic retailing data mining plays a very big role in marketing strategy to get good market for cosmetic product. In 2012 S.Balaji, analysed customer preference towards insurance products and K-means clustering method is used to discover knowledge and for improving product selling strategy [21]. The paper published by Dileep B.Desai in 2013 studied the areas in which data mining tools can be used in the banking industry are customer segmentation, banking profitability, cash management and forecasting operations [22]. In 2013 Lipsa Sadath studied E-commerce with data mining proposed architectural model integrating an improved CRM system for handling business predictions and enhances best customer relationship management [23]. Customer Relationship Management (CRM) is very important for any organization through which the companies wanted to know the relationship between customers and their organization. A good company needs to identify the problems of customers and enhance the cohesion between customers and their organization. In the past years the CRM has become the successful part for every organization [13]. Using CRM in 2014 researcher studied that it is easier to select the right customer from a large set of potential customers. Data mining helps the organization to offer the most appealing product to the existing customer. A. S. Al-Mudimigh has proposed a Data mining Engine (DME) for customer relationship management and because of this companies are at top position in this all types of

customer queries are analysed and action will be generated from both sides(i.e. customer and company)[13].In 2015 Pratik Biswas did research on

“Application of data mining and CRM in banking sector medical insurance” and suggested how to improve relationship between bank and its customer by using data mining technique along with customer relationship management[6]. S.Balaji proposed data mining model for insurance trade in CRM system for this K-means clustering method is applied to analyse customer’s preferences towards insurance product and it improves the product selling strategies [21].Data mining plays an important role in CRM so it is applied on each and every part of a CRM which gives profitable results hence in this model association mining technique is used for finding loyalty and background of the customer. The history of television started Doordarshan in the year 1959.Television was considered as entertainment part offered to only highly income groups in India, then in 1992 colour television invented and cable TV industry started, After that one by one no of channels has increased[13].Regarding DTH service first licence got to Dish TV in 2003 and started operating in 2004.After some days HITS(Head end in the sky) model was developed in 2007 to overcome Cable distribution .It contains bundle of channels broadcasted in the satellite[13].In current studies on “Application research of data mining in DTH for customer relationship management in region

Navi Mumbai” only few papers and articles found in journals .The review of research is given as follows:

In 2010 Myilsamy had suggested that consumers are giving preference towards DTH because of more number of channels and for this they should create their image by better advertisement [3].

Nagarajan N.R. and M.J.Senthil Kumar (2012) did research on “subscriber’s attitude towards DTH

services” and concluded some recommendations are as follows [9]:

Entry cost should be reduced by DTH provider, They need to provide on demand movie/programme.

Antenna should be coated by water proof coating to avoid disturbances in rainy season.

They should provide service to attracts new customer and maintain existing customer.

DTH provider should offer different packages to rural and urban areas.

Rajput US and Sharma A.K. (2012) studied on

“Customer satisfaction towards quality of DTH “and suggested how DTH market will improve [10]

Appoint literate and Tariff plan knowledgeable people as an employee.

Provide training to employees about customer relationship management.

Focus on maintaining clarity in picture and in sound quality.

Keep reception counter in DTH center.

Shrikant R and Pannaga V (2013) stated on “A study on customer perception towards DTH service” and concluded as [11]

DTH service was mostly used by middle and high level people only.

Offers more local channels in affordable price.

They should remind about renewal of service by any kind of sms.

Provide more HD channels to attract more customers.

In 2014 Jothswari et al suggested that DTH is providing well services to customers but they should provide [2]

Choice of channels, charges and packages.

Signal quality without signal breakage in rainy and cloudy environment.

Necessary information promptly.

In 2015 Lekh Raj studied Assurance, Empathy, Network Quality, Convenience and Tangibles are main factors for DTH quality service and affordable price is the big issue to make customer satisfied[1].

III. FINDINGS OF THE STUDY

So the key parameters for improving customer relationship management are

There is a need to maintain better customer relationship for long period by improving customer service, for that there is a need to find out valued customers for particular DTH provider and offer them some extra service by using data mining technique.

There is a need to develop services affordable to all kind of people.

Customers should not suffer for cost during technical disturbances and environmental effects.

Customers should not suffer for cost in case of unused service.

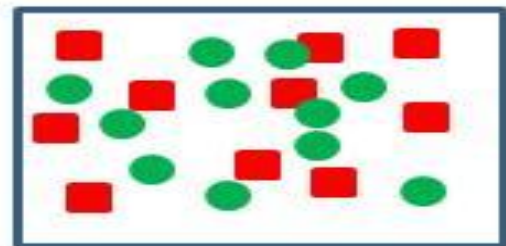
Remove unwanted channels with its price on customer demand.

In expanding growth of DTH market customers faced some problems like sufferings cost in breakdown of service, utilization of provided pack, lagging in maintaining relation between user and service provider, lack of service satisfaction,

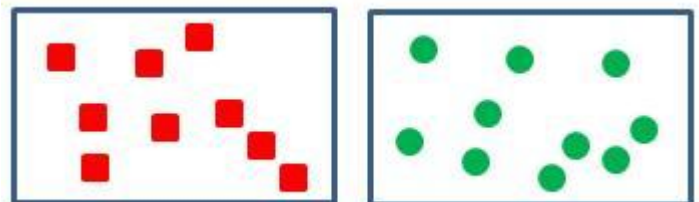
unwanted channels with high basic cost, wastage of pack etc. This study helps to find out valued customers for maintaining forever relationship with customer by providing them some extra offers, Helps to develop hourly basis pack, remove unwanted channels with its cost, avoid sufferings in breakdown of service. So intension of paper is that to improve customer service and to build profitable relationship with customer with the help of clustering technique of data mining.

IV. METHODOLOGY

1. In present study huge data is segmented on the basis of customer parameters and then by using classification method of data mining customers will be categorized into different groups. Clustering technique makes the groups in such a way that similar objects in same group (cluster) and they are very dissimilar to objects in other group (cluster) like fig 1, it helps to find out the valued customers from customer database.



a) Before applying Clustering Technique



b) After applying Clustering Technique

Fig 1



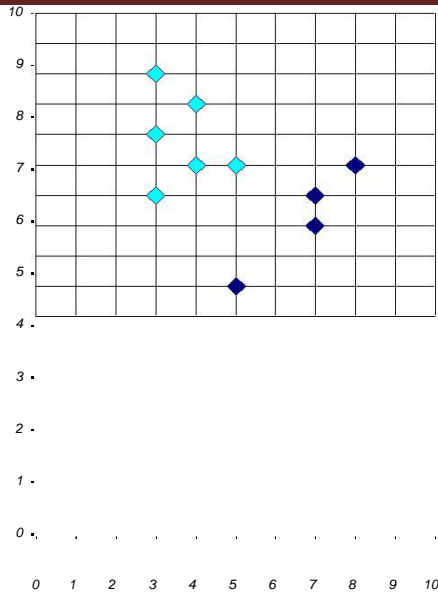


Fig 2. K-Means clustering technique

2. Customer survey is the best method to understand public views regarding any issue. so it is better for accurate result, hence survey of student, service holder, professional, business men and house wives will be taken for further study of research.

3. In this Primary data will collect directly from the customers and DTH providers through interviews or by questionnaires.

4. The Secondary data will be collected from journals, magazines, and internet, published books, research papers, published articles as well as from DTH providers etc.

| Customer | No. of years service used | Past recharge record in (days) | Area Belongs | Service location |
|----------|---------------------------|--------------------------------|--------------|------------------|
| A | 10 | 365 | Urban | Business |
| B | 15 | 180 | Rural | Home |

| | | | | |
|---|---|----|-------|----------|
| C | 2 | 90 | Urban | Business |
| D | 5 | 30 | Rural | Home |
| E | 1 | 1 | Rural | Business |

Table 2

If we declare 4 variables X1, X2, X3, X4

X1=1 if no. of years' service used ≥ 5 else X1=0

X2=1 if past recharge is ≥ 180 days else X2=0

X3=1 if are belongs is = rural else

X3=0 X4=1 if service location = home else X4=0

Note: Parameters will be change according to requirements

Score of individual customer is as follows

| Customer | X1 | X2 | X3 | X4 |
|----------|----|----|----|----|
| A | 1 | 1 | 0 | 0 |
| B | 1 | 1 | 1 | 1 |

Table 3

In above table valuable customer is B because he has highest score of value 1.

Statistical Software tool requirement:

1. SPSS
2. Microsoft Excel

For analysing collected data parameterized and non-parameterized statistical tools will be used according to the requirement of study.

V. CONCLUSION

In this paper huge customer database is segmented on the basis of customer parameters and status of the customer is identified. By applying clustering and classification technique of data mining enormous data base is categorized into different clusters (groups) and valued customers are identified to provide extra services to them. Finally these techniques improves the customer relationship and it will be helpful to maintain personal and profitable relationship with them(customers). This study states that data mining is a backbone for concealed information about most profitable customers.

In this paper enormous customer database is segmented and categorized by using clustering technique to improve customer relationship in an organization and finally clustering generates new rules and patterns for enhancing customer satisfaction.

VI. FUTURE WORK

Application of data mining technique in Direct to home (DTH) sector – a CRM perspective. To develop segmentation model for classifying customers and clustering algorithm for identifying valuable customers and provide them some extra offers in DTH service to improve customer relation. The main objective of this work is to discover meaningful patterns and rules for effective service strategy planning and to support decision making for a DTH sector. Improve loyalty of the customer towards Tata Sky DTH provider. Increasing the value of existing customer personalization via data mining. The customer loyalty is dependent on the satisfaction level the firms provide to the customers. The customer behaviour modelling is possible through the aCRM if DM is effectively applied. This helps to know the buying pattern of the customers. Define customer life time value. The customer life time value analysis is possible only if the customer data is analysed from all points of view.

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