

# POTENTIAL CUSTOMER DETECTION-BASED ON PURCHASE BEHAVIOUR

Sujay Thakur<sup>1</sup>, Prockrti Zutshi<sup>2</sup>, Raghav Mahajan<sup>3</sup>, Nyein Wai Han<sup>4</sup>, Mrs. P.N.Adhav<sup>5</sup>  
<sup>1,2,3,4</sup>*B. E Students, Department of Computer Engineering, SCOE, Savitribai Phule Pune University, Pune, Maharashtra, India.*  
<sup>5</sup>*B. E Professor, Department of Computer Engineering, SCOE, Savitribai Phule Pune University, Pune, Maharashtra, India.*

**Abstract:** Potential clients are future sources of benefits. The supervisor can settle on choices and oversee client relationship explicitly when finding those individuals. In this Project, a novel help vector machine (SVM) calculation is utilized in web mining, so as to discover potential clients who visit the sites. What's more, those potential clients are separated into two classes. Bolster Vector Machine (SVM) develops an ideal hyper plane using a little arrangement of vectors close to limit. Be that as it may, when the two-class issue tests are lopsided, PSVM will in general fit better the class with more examples and has high mistake in the class with fewer examples. To address the issue, an improved SVM calculation, DFP-PSVM is exhibited in this Project. Computational outcomes show that the changed calculation has a solid ability of order for the uneven examples of the two-class issues.

**Keywords-**Web Mining; Support Vector Machine; Classification; Potential Customers; Unbalanced Data

## I. INTRODUCTION

A market consists of all the potential customers sharing a particular need or want who might be willing and able to engage in exchange to satisfy that need or want. In advertising, customer value proposition (CVP) comprises of the whole of advantages which a seller guarantees a client will get as an end-result of the client's related installment (or other worth exchange). Client value management was begun by ray Kordupleski during the 1980s and talked about in his book, mastering customer value management. A client offer is a business or advertising proclamation that portrays why a client should purchase an item or utilize an administration. It is explicitly focused towards potential clients as opposed to other constituent gatherings, for example, workers, accomplices or providers. Like the novel selling suggestion, it is a plainly characterized proclamation that is intended to persuade clients that one specific item or administration will include more worth or preferable tackle an issue over others in its focused set.

### 1.1. Scope

The system helps to configure the customers purchasing behaviour using machine learning approach that take up to

the customer satisfaction further their future growth .The system cannot be maintaining large amount of customer data that has been limited for the specific reason.

### 1.2. Motivation

The focus of modern grocery superstore business has been shifted to the customer-centric organization. Customers are the most important factor for a business. Some customer can help the business to generate more profit compared to the others. A loyalty-prone customer intends to stay with the supplier who can provide the quality products. On the other hand, a deal-prone customer will always look for a better offer from a competitor. Customers can be classified into profitable and unprofitable.

In this Project, we will analyze the purchase behavior of a customer using machine learning. Machine learning techniques can be divided into supervised and unsupervised learning. A supervised machine learning model is built based on previously known purchase behavior. Once the model is built, it can generate potentiality score for a new customer purchase pattern. A supervised model is built using labeled data. On the other hand, an unsupervised model does not have any labeled data, rather classifies customers into clusters based on similar purchase behavior.

### 1.3. Objective

This system is mainly used to provide better CRM block chain.

1. It helps to managing a huge number of Customers at the same time.
2. Production rate manage according to the shop keeper as per the requirements.
3. Advertising can make customer attraction that helpful for shop keeper to increase the feasibility of the system.

## II. LITERATURE SURVEY

[1] "WEB POTENTIAL CUSTOMER CLASSIFICATION BASED ON SVM",LEI SUN, ZHU DUAN

In this paper, a novel support vector machine (SVM) algorithm is used in web mining, in order to find potential customers who visit the web sites.

[2] “The Dynamic Competition Diffusion Model of B2C E-commerce in Potential Customers”, Yuantao Jiang, Zhisheng Li

Various models have been constructed to explore the principles of competition diffusion of B2C e-commerce (hereafter e-commerce) in customers.

[3] “Clustering and Profiling of Customers Using RFM For Customer Relationship Management Recommendations”, Ina Maryani, Dwiza Riana

This research aims to perform clustering and profiling customer by using the model of Recency Frequency and Monetary (RFM) to provide customer relationship management (CRM) recommendation to middle industrial company.

[4] “The Calculation of the Customer Potential Value Using Association Algorithm”, YongLi Zhang, Gang Lu

Based on the analysis of purchased products or services, we use Association Algorithm to predict the purchasing products or services that customer will buy in future and purchasing probability, then calculate the potential value of customer. Finally we accomplish the data mining process.

[5] “The Evaluation of Customer Potential Value Based on Prediction and Cluster Analysis”, BI Xing, WANG Xin-feng

This paper for the first time proposed the method of the calculation of wallet size and wallet share: on one hand, the corporate customer’s growth rate is obtained by the use of forecasting technology

[6] “Mining Important Association Rules on Different Customer Potential Value Segments for Life Insurance Database”, Jian-Bang Lin , Te-Hsin Liang , Yang-Goo Lee

To maximize customer profitability, companies should exert effort to acquire new customers, as well as to retain existing customers and add value.

[7] “Customer Knowledge Management and Research in E-commerce Environment”, Feng Kong, Liya Cai

We will demonstrate how companies can benefit by adopting strategies that harness the potential of knowledge management technologies to transform their e-business activities.

[8] “Understanding the factors of customer satisfaction: An empirical analysis of Telecom broadband services”, M Malook Rind, Aftab A. Shaikh , Kamlesh Kumar , Sadaf Solangi , M.Ameen Chhajro

Keeping in view the tough competitive market, customer satisfaction is one of the most important factors for the survival of any service provisioning organization. Research community has been contributing enough literature with special focus on the analysis of the important predictors that has significant impact on customer satisfaction.

### III. EXISTING SYSTEM APPROACH

Customers always demand more than expected results for what they pay. It has become a crucial issue for service

providers to keep their customers happy with the services and packages they provide. Almost all organizations try to gain more customers but customer satisfaction has not been paid the required attention by telecom service providers, which is causing the loss of increasing revenue on per capita investment.

### Disadvantage

1. Negative Feedback of Customer.
2. Time Consuming.

## IV. PROPOSED SYSTEM APPROACH

We proposed the system architecture for Identify Potential Customer therefore, the customer can identify behalf on their purchasing behavior also we can give samples of products to the customer for store improvements and advertisement for new customer for attraction. The given criteria proposed to maintain the CRM distribution among all the peoples such as buyers as well as sellers even based on purchasing behavior, we can be used classification techniques for separating the potential growth. Customer also satisfied using our system to saves their efficient time although the offers will also attract the view of customers purchasing behavior.

### Customer

This module contains the information about the customer, who are going to visit the shop.

### Products

In this module we are going to maintain information about products which are useful for customers, this is the source to find out pattern in purchasing power.

### SVM (Support Vector Machine)

Machine learning is most efficient tool for data analysis and prediction. We are going to use one of the machine learning algorithm which is SVM and it is the most suitable algorithm for our implementation. The objective of the support vector machine algorithm is to find a hyper plane in an N-dimensional space ( $N =$  the number of features) that distinctly classifies the data points.

To separate the two classes of data points (potential customer and non potential customer) there are many possible hyper planes that could be chosen. Our objective is to find a plane that has the maximum margin, the maximum distance between data points of both classes. Maximizing the margin distance provides some reinforcement so that future data points can be classified with more confidence.

### Checking Frequency

In this module, according to the customer purchase behaviour we are going to find out the customer is potential or not.

### Advantage:

1. Customer Satisfaction

## 2. Positives Feedbacks

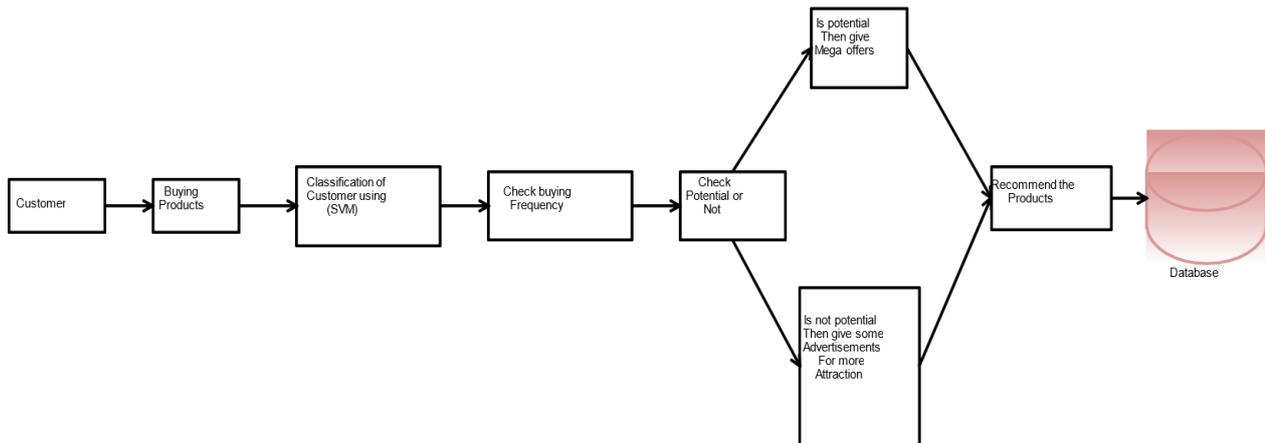


Fig 1: System Architecture

## V. CONCLUSION

Finally we identify the potential growth of customers the product can advertise for new customer for attracting their buying and attraction. The customer has been navigates the products for uses like, we gave them samples as well offers, etc. It can also bagging out the product details that would be affected to the shopkeeper for their purchasing history that will help to reduce the production loss and have good inspiration for all customers satisfaction and as well they can classified using the clustering techniques as potential or not.

## VI. REFERENCES

- [1]. ITU-T,2016. ITU releases 2014 ICT figures. Available at: <http://www.itu.int/en/mediacentre/Pages/2016-PR30.aspx>.
- [2]. Ghobadian, R., Speller, S. and Jones, W., 1994. "Service quality concepts and models". *International Journal of Quality Management*, 11, pp.43–66.
- [3]. Lee, H., Lee, Y. & Yoo, D., 2006. The determinants of perceived service quality and its relationship with satisfaction.
- [4]. Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). *Business research methods*. Cengage Learning.
- [5]. Bhattacharjee, A. (2000). Acceptance of e-commerce services: the case of electronic brokerages, *IEEE Transactions on Systems, Man and Cybernetics*, 30, 411-420.
- [6]. Taylor, S. & Baker, T. (1994). An assessment of the relationships between servicequality and customer satisfaction in the formation of consumers' purchase intentions. *Journal of Retailing*, 70 (2), 163-178.
- [7]. Gebert, H., Geib, M., Kolbe, L. M. and Riempp, G., "Towards Customer Knowledge Management Integrating Customer Relationship Management and Knowledge Management concepts", *The Second International Conference on Electronic Business (ICEB 2002)*, Taipei, Taiwan, 2002, pp. 296-298.