

A SURVEY ON BANK DIRECT MARKETING CAMPAIGNS AND ADVERTISEMENT ACTIVITIES TO ACHIEVE A SUCCESSFUL MARKETING MANAGEMENT USING DATA MINING CONCEPTS

Bharat Gupta¹, Shelly Gupta², Sheetal Sharma³

¹(CSE Dept., Amity University, India)

²(AIM & ACT, Banasthali University, India)

³(IT Dept., Amity University, India)

ABSTRACT

In current Business Scenario, banks use direct marketing campaigns and advertisement activities in the context of corporate reputation and brand name enhancement and to increase the sale of their new launched product by researching more improved market segments which is based on understanding customers' behavior. The competition in market has led marketing managers to invest on the advertisements and campaigns to follow the path that introduce its better products to customers in a successful and economical way. Due to this reason, banks need to identify either to use direct marketing campaigns or advertisements or the mix promotion to achieve its aim looking to concerns and necessities of Customer. In this study a research has been done on direct marketing campaign and advertisement by exploring their relationship and literature survey has been done to identify which one to be in forefront to maximize the investment return by enhancing the product sale.

Keywords— Direct Marketing, Advertising, Direct Marketing Framework using Data Mining, Mass Marketing.

I. INTRODUCTION

In marketing, there are two opposed approaches to communication: mass marketing and direct marketing. In mass marketing, a communication message is broadcast to all customers through media. In spite of large investments in market research and media planning, it is hard to know the benefits of mass marketing. This has led to an increased popularity of direct marketing. The final goal of direct marketing is cost-effective, two-way, one-to-one communication with each and every customer. Hence, it is essential to learn present and predict future customer preferences. In today's chaotic business environment, customer preferences route dynamically and are too complex to derive straightforwardly. In this paper we will do a research study on direct marketing campaign and advertisement by exploring their relationship and literature survey to identify which one to be in forefront to maximize the investment return by enhancing the product sale.

1.1 Advertising

Advertising is a paid form of presentation and promotion of a product using the mass communication that is aimed to inform members of a particular audience. Advertising is useful in communicating factual information

about the product or keep reminding consumers to buy the brand of their liking. Advertising can be expensive; hence, companies need to keep check to ensure their messages are effective.

Types of Advertising

- **Product advertising** is an advertising message which focuses on a specific product. This is the type of advertising which normally the person usually thinks of when talking about most promotional activities.
- **Institutional advertising** is a form of advertising that promotes the image of a corporation, rather than an individual product they offer. This provides more public awareness about the company or improves the image of already existing ones publicly.
- **Informative advertising** focus on enhancing initial demand for a product.

The ultimate goal of an advertisement is to enhance the likelihood that a customer will buy a particular product. Advertising explains the close relationship between marketing communications and promotional strategy.

1.2 Direct Marketing

Direct marketing is direct non personal communication between focused targeted consumers or organizations and sellers designed to obtain an immediate response and develop lasting relationships. The response could come in the type of an order, a request for more information, a visit to a store or other place of business for purchase of a product. For buyers, direct marketing is convenient, easy to use, private, immediate and interactive. For sellers, direct marketing is a powerful tool for developing customer relationships. Using database marketing, market managers target small groups or individuals, identify their needs, and promote these offers through personalized communications. Direct marketing offers sellers a low-cost, efficient option for reaching their markets. Hence, direct marketing has become one of the popular types of marketing promotion.

Types of Direct Marketing

- **Catalog marketing** is direct marketing via print, video, or electronic catalogs that are mailed to select customers, made available in stores, or presented online. Catalog is an efficient and expensive way to do business.
- **Direct-mail marketing** is direct marketing through sms, letterbox drops, direct mail or email to reach the customers. Direct mail is best fit for one-to-one communication.
- **Telemarketing** is direct marketing which involves the use of the telephone in which a salesperson solicits prospective customers to buy products or services over the phone and customers make a call to gain information or place orders. This way is cheap and easy In comparison to door-to-door selling.

II. DATA MINING AND KNOWLEDGE DISCOVERY

A The terms Knowledge Discovery in Databases (KDD) and Data Mining are often used interchangeably but in real data mining is an important step in the KDD process. Data mining (also known as knowledge discovery in database-KDD) has been defined as the non trivial extraction of implicit, previously unknown and potentially

useful information from data. Data mining involves the use of sophisticated data analysis tool to discover previously unknown, valid pattern and relationships in large data sets. Data mining uses machine learning, different techniques of statistical and visualization to discover and present knowledge in a form which is easily comprehensible to humans. These tools can include statistical model, mathematical algorithms and machine learning methods (algorithms that improve their performance automatically through experience such as neural network or decision tree) consequently; data mining consist of more than collecting and managing data.

Data mining can be performed on data represented in quantities, textual or multimedia form. Data mining applications can use a variety of parameters to examine the data, they include association (patterns where one event is connected to another event) sequence or path analysis one (patterns where one event lead to another event), classification (identifications of new patterns), clustering (finding and visually documenting group of previous unknown facts) and forecasting (discovering patterns from which one can make predictions regarding future activities). Data mining has been broadly and successfully applied in a wide variety of applications, including finance, marketing, banking, biomedicine, medical diagnostics and etc.

III. STUDY ON ADVERTISING AND DIRECT MARKETING CAMPAIGN

3.1 Advertising Campaign

An advertising campaign is a series of linked advertisement messages which share a particular idea and theme. Advertising campaign is typically broadcast through several media channels over a specific time frame. It requires many skilled people from various companies to do the work correctly.

Developing an Advertising Campaign

Advertising campaigns need to be carefully planned and executed with maximum effectiveness and return on marketing investment as they are related to the organizations' overall promotional goals. The three things that all advertising campaign has are they stay in budget, original and lead the consumer down the path to purchase or sale. The various steps that organizations take to develop and implement the advertising campaign:

- **Identifying the Target Market** The target market of an advertising campaign is identified from research and segmentation decisions.
- **Setting the Budget** The organization needs to set the advertising budget. As it is costly activity, a percentage of total promotion budget is set for advertising, depending on how much and type of advertising it can afford.
- **Setting Message Goals** Message goals for a campaign can be increasing awareness on brand, enhancing sales by some minimum percentage, or changing the outlook of a product. The objective is simply to attract people and recognize their need for the product.
- **Designing the Ad** An effective advertising message should get *attention*, hold the *interest*, create a *desire*, and generate *action*. Through this ADIA concept customers reach a purchase decision.



Fig. 1 AIDA concept

- **Pretesting** To identify whether the campaign ideas will work or not. In this pretesting, the research that goes on in the starting stages of a campaign, focus on gathering basic information by surveys and discussions among focus groups.
- **Media Selection** To broadcast the organization's message to its audience, the selected media must have good expertise of achieving the communications objectives of informing, persuading, and reminding potential customers of the product going to be advertised.

3.2 Direct Marketing Campaign

Direct Marketing is an art of selling to targeted customer market. An effective Direct Marketing campaign makes organization brand closer to focused customers and lead to customer action, by email, direct mail or telemarketing. Direct marketing strategy focus on studying customer behaviour and identifying certain customers for product marketing. But the changing dynamics of the marketing environment makes customers nature, behaviour unpredictable which in turn results as the difficult task for managers to plan marketing campaigns. In this case, a specific direct marketing framework model can identify and predict changes in customer behaviour which can develop long-term and strong relationship between organization's businesses and understanding customers' behaviour to support managers to plan effective campaigns for direct marketing.

3.3 Direct Marketing Framework

It is a systematic, simple and well-integrated framework that uses direct marketing concepts to ease the development of marketing knowledge and support in taking marketing decisions. A well defined approach for the data model is essential to achieve marketing objectives by leading marketers to migrate along pre-determined and desirable paths. The main goal of the framework model is to let marketers finding the interesting patterns on the basis of customer behaviour. The direct marketing framework model which explains the different phases in direct marketing area are:

- **Direct Marketing Planning** The initial step in the framework involves the marketer to understand the requirement of the project.
- **Data Preparation** The data preparation phase includes data sampling, record and attribute selection, cleaning of data and transformation.
- **Data Mining Technique Selection** By this step, direct marketers must have chosen one of data mining main purposes in direct marketing i.e. customer profiling, deviation analysis and trends analysis.
- **Analysis, Evaluation and Interpretation of Model** Marketers can use predictive accuracy for model analysis and evaluation.
- **Presentation of Marketing Knowledge** This stage focus to simplify the clearness about the marketing model and hence the retrieval of knowledge.

IV. LITERATURE REVIEW

A literature survey has been done to identify whether advertising, direct marketing campaign or mix promotion should be in forefront to maximize the investment return by enhancing the product sale for the organizations.

Lilian Sing et. al. provided a comprehensive framework to guide research efforts focusing on direct marketing strategy and aid practitioners in their quest to achieve direct marketing success using data mining methods and

demonstrated that data mining is an effective tool for direct marketing which can improve bank marketing campaigns in their DM framework.[1]

Every type of advertising has a different impact on consumers. For a new customer, it is more preferred to use informative advertising, where as the usage of advertisements with a favorable image lead people to associate with a product and has a significant role in influencing customer behavior. In further study the consumer behavior in dynamic market is modeled, by researching and analyzing both prestige and informative effects of advertising. This proves that if advertising provides necessary information it has a major impact on customers' behavior and choice to make a purchase. [2]

As noted by Allison Schiff of the Direct Marketing News Blog, "30 years ago, While a direct mail piece addressed to "dear resident" was enough, people now have expectations of personalized communications that should speak to them on a variety of levels." Theresa Wabler, director of marketing at Parago remarks that segmentation will be applied on to marketing and promotions. "Promotions will become more targeted, making sure that they focus directly on to a brand's loyal base of consumers, or a particular demographic that is on the edge for growth. This will not only keep and protect the brand's value and reputation, but will encourage to more loyal customers." [3]

Elsalamony et. al. has evaluated and compared the classification performance of the two different data mining techniques' models MPLNN and C5.0 on the bank direct marketing dataset to classify for bank deposit subscription. The classification performances of the two models have used three statistical measures; Classification accuracy, sensitivity and specificity to increase the campaign effectiveness by identifying the main characteristics that affect the success . The selected dataset was partitioned into training and tested by the ratio 70%:30% respectively. Experimental results showed the effectiveness of both models. Importance analysis has shown that attribute "Duration" in both models has achieved the most important attribute. [4]

Eniafe Festus Ayetiran et. al. to predict a probability that a customer in Ebedi Microfinance bank will respond to a promotion or an offer, used Ebedi Microfinance bank customers' historical purchase data and developed a predictive response model with data mining techniques. Bayesian algorithm precisely Naïve Bayes algorithm was employed in constructing the classifier system. Both filter and wrapper feature selection techniques were employed in determining inputs to the model. The results obtained shows that Ebedi Microfinance bank can plan effective marketing of their products and services by obtaining a guiding report on the status of their customers which will go a long way in assisting management in saving significant amount of money that could have been spent on wasteful promotional campaigns. [5]

In this paper a deep research on C5.0 algorithm by embedding "boosting" technology in cost matrix and cost-sensitive tree to establish a new model for individual credit evaluation of Commercial Bank is done. Su-lin Pang and Ji-zhang Gong applied their new model on evaluating the individual credit records of a German bank, and compared results of the adjusted decision tree model and the original one. The comparison showed that the adjusted decision tree model is more precise[12].

A Direct Marketing Framework designed using a combination of different data mining methodologies and direct marketing concepts. It is aimed to facilitate marketers with only little data mining skills to effectively plan direct marketing campaigns. This research has presented a key issue in the application of data mining in direct marketing context. It presented a theoretical framework and empirically tested its performance through the use of a case study in supermarket promotions strategy[13].

V. CONCLUSION

As per the detailed study and literature review done, It has been found that Managers need to study Customers' behaviour depending on their past responses on the campaigns and proper planning should be done to promote a product. For this purpose data mining concepts are very effectively beneficial in illustrating the performances of customer profiling, deviation analysis and trends analysis. Advertising is a favourable presentation and adoption of a product, service, institution or an idea via mass media to the public and Direct Marketing leads to direct contact with the selected customers. The mix promotion by an organization will bring the product more closer to the customers, add to corporate reputation and brand name enhance and will be the best approach to generate the maximum return on investment (ROI). A future study can be done further to identify the best marketing methods to achieve the maximum return on investments for promoting the sale of their product. behaviour depending on their past responses on the campaigns and proper planning should be done to promote a product.

REFERENCES

- [1] Sing L. et. al. "Data Mining Framework for Direct Marketing: A Case Study of Bank Marketing", IJCSI, vol.10, Issue 2, No.2, 2013.
- [2] Ackerberg Daniel A., "Advertising, learning and consumer choice experience good markets: an empirical examination.", International Economic Review, vol. 44, Issue 3, pp. 1007–1040, August 2003.
- [3] Cote. R, Direct Marketing Trends for 2012, Februry 2012.
- [4] Hany A. Elsalamony , Alaa. M. Elsayad "Bank Direct Marketing Based on Neural Network", International Journal of Engineering and Advanced Technology (IJEAT), vol. 2, Issue 6, August 2013.
- [5] Eniafe Festus Ayetiran, Adesesan Barnabas Adeyemo "A Data Mining-Based Response Model for Target Selection in Direct Marketing", I.J. Information Technology and Computer Science ,vol. 1, pp. 9-18, Februry 2012.
- [6] Shaw, M.J., Subramaniam, C., Tan, G.W. & Welge, M.E. , "Knowledge management and data mining for marketing", *Decision Support Systems*, vol. 31, No. 1, pp. 127-137, 2001.
- [7] Ngai, E.W.T., Xiu, L. & Chau, D.C.K., "Application of data mining techniques in customer relationship management: A literature review and classification", Expert Systems with Applications, vol. 36, pp. 2592–2602, 2009.
- [8] Mustafa K. , "The Comparison of Public Relations and Advertisement Activities in a Successful Marketing Management. Which one should be in forefront?", Journal of Naval Science and Engineering, vol. 5 , No.2, pp. 43-54, 2009.
- [9] Han J. and Kamber M., Data Mining: Concepts and Techniques, 2nd edn., San Francisco, Morgan Kauffmann Publishers, 2006.
- [10] Derrig, Richard A., and Louise A. Francis, "Distinguishing the Forest from the TREES: A Comparison of Tree-Based Data Mining Methods," Variance 2:2, pp. 184-208, 2008.
- [11] A. Floares., A. Birlutiu. "Decision Tree Models for Developing Molecular Classifiers for Cancer Diagnosis", IEEE World Congress on Computational Intelligence, pp. 10-15, June 2012.
- [12] Su-lin Pang, Ji-zhang Gong, "C5.0 Classification Algorithm and Application on Individual Credit Evaluation of Banks", Systems Engineering - Theory & Practice, vol. 29, issue 12, pp. 94–104, December 2009.

- [13] Flici A., Kevin L. Fearne A. 2011 “A Framework for Direct Marketing with Business Intelligence: An illustrative case study in Retailing”, *Informatics Engineering and Information Science · Communications in Computer and Information Science*, vol. 252, pp. 545-558, 2011.
- [14] Bose, I., Chen, X., “Quantitative models for direct marketing: A review from systems perspective”, *European Journal of Operational Research* vol. 195(1), pp. 1–16, 2009.
- [15] Berry, M.J.A., Linoff, G.S.: *Data Mining techniques: For Marketing, Sales, and Customer Relationship Management*, 2nd edn. Wiley Publishing, Inc., Indianapolis 2004.
- [16] Chen, M., Chiu, A., Chang, H., “Mining changes in customer behavior in retail marketing”, *Expert Systems with Applications* , vol.28(4), pp. 773–781, 2005.
- [17] Page, C. and Luding, Y., “Bank manager’s direct marketing dilemmas – customer’s attitudes and purchase intention”, *International Journal of Bank Marketing*, vol. 21, no.3, pp. 147–163, 2003.
- [18] Boone & Kurtz; *Principles of Marketing*, Thomson, 2004.

