

Intelligent Marketing Analysis

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Abstract--Intelligent marketing represents one of the most productive ways of the company's market communications with real and potential buyers. It is based conceptually on stating precisely the target segments of consumers where the key mechanism is the database marketing. The database marketing is an interactive approach to marketing which uses marketing media and channels through which it can establish the contact with individual buyers with a view of giving information to the target auditorium, stimulating demands and being in the close relation with buyers recording data relevant for their consumer behavior. Database marketing includes names, addresses, phones, faxes and e-mails of individual consumers and potential buyers for market communication having sale and profit as the result. The basic principles of the database marketing are targeting – stating target markets precisely; selectivity; personalization; active consumer participation; testing; easiness in answering questions; possibility of measuring and the so-called relationship marketing.

E-mail marketing is a mixture of classic direct marketing and telemarketing. It is based on databases representing information-guided marketing process which takes position in the context of concern on consumers' data privacy. Thustit includes the way of managing fundamental marketing tasks in finding new markets; stimulating market requirements and delivering products to buyers; combining numerous media for advertising and measurable reactions and answers of potential buyers.

Keywords: Email Marketing, Clustering, Customer

1. Introduction

The main purpose of using the e-mail marketing tool can be a brand development, viral marketing, stimulating sale, creating and increasing the loyalty of consumers, online market research, increase of the Web site visiting, giving further information on products and services. Email marketing requires constant and continual dialog with the identified buyer, with a view of establishing growth and maintaining interrelationship with buyers. Creating long-term cooperation requires from marketers to communicate clearly with buyers in order to try to sell products

In terms of world-wide reach, it remains the most cost-effective marketing strategy at your disposal[1]. Some companies have given up their more traditional marketing approaches such as billboards, cold calls, and ads in the Yellow Pages, in an attempt to leverage the vast platform provided by email marketing. Even the smallest businesses have turned to email marketing to improve sales and revenue.

It represents a direct way of communication with the target population, which affects the creation of stronger and more loyal relationships with prospective customers, compared to traditional marketing methods. It has become an essential tool for business ever since the introduction of internet to the world. This system automatically sends emails to your leads every few days in order to provide valuable information to your prospects and keep in touch with them. Direct e-mail marketing is not aimed at momentary sale, but at boosting certain product preferences due to the engagement of numerous electronic media. The main goal of e-mail marketing is building long-term "one to one" relationships with current and prospective customers.

In this paper we raise the challenges and propose architecture to enable practical realization of E-mail based

services. Then we further illustrate the key issues in the architecture and discuss the corresponding solutions. The idea is to provide a customized solution to a marketing head, which can serve as buttress for future marketing strategy.

2. System Architecture

The system architecture consists of Email Sending Daemon (ESD), Bounce Handling Daemon (BHD), Click-through Daemon (CTD).

- 1) The email sending daemon arranges each outbound e-mail message for a particular campaign, which is chosen by the marketing head . The e-mail sending daemon should be able to communicate with one or more outbound mail transfer agents to send mailings over the Internet.
- 2) The bounce handling daemon tracks e-mails sent by the marketing head which were not delivered in designated way, parses the returned e-mail messages, and identifies the probable reason for the e-mail bounce.
- 3) The click-through daemon tracks clicks made by the e-mail recipient on traceable URLs included in the e-mail content. Web proxy servers can be used to send the HTTP requests to the click-through daemon server.

3. Background And Related Works

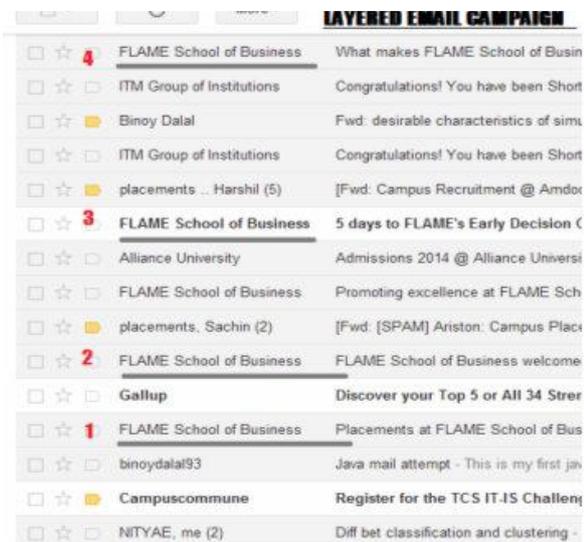
a. Clustering

Clustering basically groups data having similar characteristics together. The characteristics can be predetermined.

A clustered block which consists of similar data elements, which is optimized information of raw data set, can now be used for further analysis. This analytical approach can help in many aspects of decision making.

b. Implementation of Clustering

The email campaign is designed to be layered in which the emails are sent multiple times to the end user. This helps in forming clusters of target audience. The email can be sent to the customer in stages as per the campaign strategy or repetitively. For example if a customer is sent 4 emails in succession, we calculate the opening frequency. If the customer opens 2 of the 4 emails, the campaign for that particular customer is 50% successful. Thus (O.F) is 2, we calculate the O.F's for the entire customer in the campaign email set and then perform a clustering algorithm on them.



In the above example, FLAME business school has sent 4 mails out of which 3 are opened so the (O.F) for email id naveenlk.19@gmail.com for campaign 1 is 3. The O.F values for are calculated for all the emails in the campaign set and then cumulated.

c. List Segmentation

Segmentation is a method used to categorize customers into disparate sets. Segments can be based on almost anything - age, gender, email behavior or spending habits. Using segmentation allows for a greater level of targeting and finding relevant data for marketing strategy.

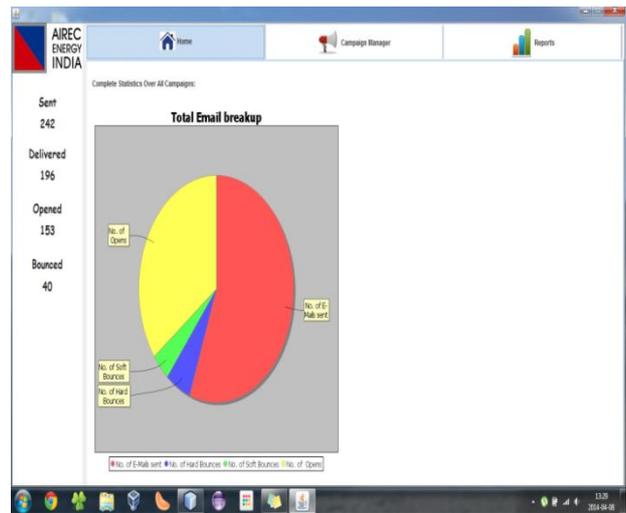
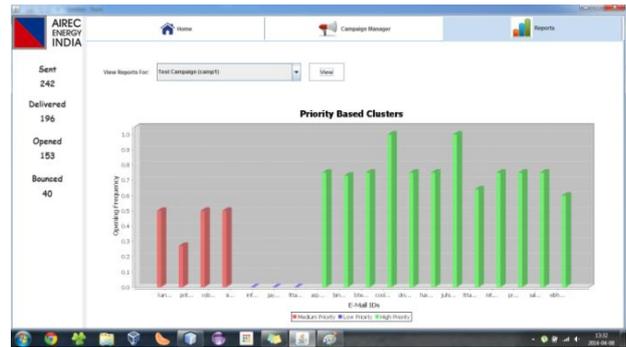


Fig.3 Overall graphical analysis

4. Implementation

Segmentation helps to truncate a large list of individual s to a more terse list of potential customers. By segmenting customers based on their purchase history, marketers have the ability to devise a particular campaign on when customers are expected to repeat purchase.

The segmentation is based on priority. The system clusters disparate email ids according to their priority which is directly proportional to the opening frequency.

The three distinct clusters are high priority, medium priority and low priority.

The tool gives this deduced information in the form of lucid bar charts and pie-charts. It is thus suggests the overall comprehensive view to the marketing head. Equipped with this highly optimized information the marketing head can make calculated decisions which are based on suggestive evidence rather than pure blind instinct.

Previously email marketing was carried only in the context of out-bound mails. There was no particular feedback on the effectiveness and measures to improve the email marketing campaign. There is a profound need to detect an analyze elusive details.. As we seek to deliver the right message at the right time, we must also make sure our content has a high granularity of detail to each buyer's role in the organization.

4.1 PERFORMANCE

This tool has a high-performance message transfer agent (MTA) that incorporates advanced technology, domain throttling and the latest sending protocols for superior deliverability, tracking and management. Its features include High-performance, reliable delivery optimized for today's sending environment, Live Updates for on-going compliance with ISPs and other receiving domains, Smart bounce management to enable best practices and list hygiene, integrated authentication standards, domain throttling and optional certification services, dynamic message assembly for one-to-one messages, robust APIs enabling open connectivity and integration and multi-server management and real-time performance monitoring.

4.2 FEASIBILITY

The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. Database administration, development and performance management will depend on platforms like MySQL, Toad and Weka. These platforms contain tools for data pre-processing, classification, regression, clustering, association rules and visualization. They are well suited for data mining and provide deep functional expertise across multiple database platforms. Its features include reports on recipients, bounces, opens and clicks, anti-spam mechanism for bypassing filters as well as compliance with spam laws, robust customer management, including imports and exports of mailing lists. Third party and open source APIs can be used to detect the geo-location of incoming requests. When used in tandem with the "email opened checking" service, we can find out not only if the email was opened but also where it was opened from, helping us further narrow down potential clients.

4.3 ADVANTAGES

1. Highly informative feedback: The clusters of potential customers on the basis of their email

opening frequency gives a profound insight in real-time and relevant trends of customers.

2. Low cost: Being an integrated and web-based solution, the cost on resources is minimalistic.
3. Highly intelligible: The deduced information is represented in a very lucid manner, thus it is easy to comprehend.
4. Highly scalable: The more data fed to the system, the more it learns.

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