DEMAND AWARE AUTOMATIC DIGITAL MARKETING

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Abstract Advertisements are not reached the targeted audience in right time even though lot of revolutions exist in marketing strategies. But the demand is increasing rapidly. In order to fill the gap in this, we need an intelligent advertising strategy. I propose a digital marketing strategy which will find the target audience from different domain based on user analytics. An intelligent demand aware fuzzy system (IDAFS) will publish the advertisement automatically after getting the target audience. Advertising cost, Number of audience and their Age can be prioritized by the user and which act as the factor to decide the demand. The IDAFS intelligently filter the domains depend upon the demand factors, where the advertisement will be triggered.
Keywords: fuzzy system, IDAFS, Electronic Marketplace

I.INTRODUCTION

As the internet gained popularity and became more widespread, scientists were not the only group benefiting from it any more. People and businesses alike started using the Internet as a means to communicate with one another. Towards the end of the 90's, the internet had become widely accessible. This rise in usage was perceived by many as a niche in the market[1]. There was money to be made. Many internet firms sprung up. They put traditional business models aside, and started providing free content and services on the web, in an attempt to generate some revenue from advertising; this eventually led to the "dotcom crash". 2003 saw a well-known technical writer, Nicholas Carr, produce sound arguments encouraging businesses to cut IT spending. In his highly-debated article "IT Doesn't Matter"he claimed that increasing levels of IT spending would not necessarily help companies gain a competitive advantage [2]. Low levels of investment were threatening the future of the internet and IT spending.

In 2004 however, with the listing of Google on the stock market, a new bubble was inflated. Google had come up with an innovative way of targeting and placing text advertisements next to search results. Google's success had validated many business models thought to have been flawed after the dotcom crash. The markets started re-gaining their lost confidence[3]. "The only reason it had not worked the first time around, it was generally agreed, was a shortage of broadband connections. The pursuit of eyeballs began again, and a series of new Internet stars emerged: MySpace, YouTube, and Facebook. Each provided a free service in order to attract a large audience that would then at some unspecified point in the future attract large amounts of advertising revenue. It had worked for Google, after all."[4]

The internet, in its relatively brief history of existence, has found a way into most if not all aspects of human life. At its most basic level of functionality, it has enabled us to manage information, communicate, and be part of an enormous global network, which otherwise would not have been possible. The internet has allowed us to make huge strides in many areas of science and technology. We can perform numerous commercial transactions online, in a manner and speed incomparable to any other alternatives. The internet's lurking presence can even be felt when we make highly personal decisions such as "who to vote for in an upcoming election". According to the Pew Internet & American Life Project, a polling organization, "Some 74% of internet users--representing 55% of the entire adult population--went online in 2008 to get involved in the political process or to get news and information about the [US] election".

II. LITERATURE REVIEW
2.1 CURRENT TRENDS IN INTERNET MARKETING

"E-commerce involves buying and selling processes supported by electronic means, primarily the Internet... E-marketing is the marketing side of ecommerce. It consists of company efforts to communicate, promote, and sell products and services over the internet."E-commerce and internet marketing bring a number of benefits both to buyers and sellers of goods and services. For the buyers, the web is a convenient, interactive, immediate, and private medium in which they are able to perform comparative shopping. Customers have greater access and selection and won't need to deal with sales personnel, or go to a physical store [5]. The sellers also enjoy faster, more efficient transactions at lower costs, and may take advantage of the numerous tools available for customer relationship building."Although online commerce still represents less than six percent of all retail sales, its growth and future prospects show that it has finally become as established and mainstream as a trip to the local mall."[6] Despite the economic crisis we are currently facing, many internet research companies have predicted a steady growth in e-business. According to Forrester research "web businesses are certain to fare better than their offline counterparts as consumers continue to shift their daily activities online."

2.2 ELECTRONIC MARKETS AND ELECTRONIC HIERARCHIES

In Neoclassical Economics, perfect competition is defined as a market which has the following characteristics:
1. Many buyers/sellers
2. Homogeneous products
3. Low entry/exit barriers
4. Perfect information
5. Transactions are costless

In 1987, Malone et al. in, predicted the emergence of electronic markets, and the conditions under which these are likely to take place [7]. This article argues that with information technologies being utilised to a greater extent, the "electronic communication effect" will take place. Consequently communication costs will be reduced, allowing larger amounts of data to be transmitted in the same amount of time, tending towards perfect information conditions [8].

The "electronic brokerage effect", which takes place through the use of centralized databases, can help connect many buyers to many suppliers [9]. This is also said to reduce the cost of finding alternative products and services, particularly in "computer based markets" [10].

2.3 ELECTRONIC MARKETPLACE RESEARCH

Wang et al, present a comprehensive literature review of electronic commerce research, consisting of 109 articles from 19 journals related to this topic. They identify eight research themes, five methodologies, and six categories of background theories, in an attempt to review the current status of Electronic Marketplace (EM) research [11]. They then go on to propose an integrative framework of EM which concludes EM research is mainly approached from three angles: information systems, inter-organizational/social structures, and strategic management.

2.4 WINNER-TAKE-ALL IN NETWORKED MARKETS

"Winner-Take-All in Networked Markets" is the title of an article by T. Eisenmann, published by The Harvard Business School in 2007. In this paper, Eisenmann introduces a novel perspective on "Networked Markets", and the likelihood of these markets to be dominated by one platform. The following passages extracted from this article provide some definitions of key concepts and terminology [12].

"A platform encompasses the components and rules employed by users across most of their network transactions...two platforms are part of the same networked market, if changing the cost to users affiliating with one platform, influences the volume of transactions mediated by the second platform...every platform facilitates user interaction on one, and only one, network. Every platform-mediated network has one, and only one, platform at its core rival platforms employ non-compatible technologies...by these definitions, Visa, MasterCard, and American Express are three different networks, each served by a distinct platform [13]. Together, the three networks (along with Discover, Diners Club, and a few others) comprise a networked market: the U.S. Credit card industry."

The following platform structure outcomes in networked markets have been identified:

With multi-homing: a networked market in which most users on at least one side use multiple platforms. For example in the Online Music Subscription industry, all music companies tend to support various platforms (e.g. Napster, iTunes, etc.), in order to reach the full range of consumers[14].

With mono-homing: a networked market in which most users on at least one side, use only one platform. Consumers in the video games industry tend to pick one of the available platforms, be it the Xbox, Play Station (PS), or any other available platforms.

With mixed-mode homing: a networked market in which a considerable number of users mono-home, and the rest multi-home. Credit cards provide a suitable example for this, where a significant portion of consumers stick with only one credit card, while others choose to make use of many[15].

Clearly, these platform structure outcomes are present in the absence of a Winner-Take-All (WTA) platform structure, which is defined as 'one in which a single platform captures over 90% of the relevant networked market'. In other words, there are not that many significant rival platforms for users to pick from in the first place. In such cases, we say WTA outcomes have prevailed. The table below, extracted from this article, provides a number of examples for various platform structure outcomes.

2.5 USING POWER CURVES TO ASSESS INDUSTRY DYNAMICS

Michele Zanini's article in the McKinsey Quarterly Journal (2008), describes a long-term tendency of increasing inequality observed in the size and performance of large companies [16]. These observations have been made on the basis of results gathered from plotting the distribution of various indicators of size and performance (e.g. net income, market value, and available assets), among the top corporations in a number of industries. The results from these distribution lay-outs, signify the presence of a power curve, as opposed to a normal distribution or bell curve, which indicate 'a relatively even spread of values around a mean'.

"Such a curve is characterized by a short "head," comprising a small set of companies with extremely large incomes, and drops off quickly to a long "tail" of companies with a significantly smaller incomes [17]. This pattern, similar to those illustrating the distribution of wealth among ultrarich individuals, is described by a mathematical relationship called a power law."

In an attempt to explain such phenomena, Zanini states a number of factors resulting in power law behaviour.

An industry's competitive intensity is an important factor in increasing inequality amongst its players [18]. A larger number of competitors and more consumer choice, (unexpectedly) increases inequality, and the gap between the top rank and the median spot, as opposed to resulting in a flatter curve.

The presence of intangible assets (e.g. trademarks, patents, talent, networks, etc) is also said to advance power curves [19]. Intangible assets assist consumers in performing value propositions, and create economies of scope, which among many other benefits, allow firms to promote a wider range of products. Intangible assets also bring about increasing returns to scale; put differently, intangible assets allow firms to continue growing their profit margins as the firm grows. Note that most firms only enjoy constant returns to scale [20].

The rank distributions below highlight the differences in the nature and size of leading players in these industries. As can be seen, capital-intensive industries such as Chemicals and Machinery, have a much "flatter" power curve, compared to intangible-rich industries like Software and Biotech [21].

III. PROPOSEDMETHOD
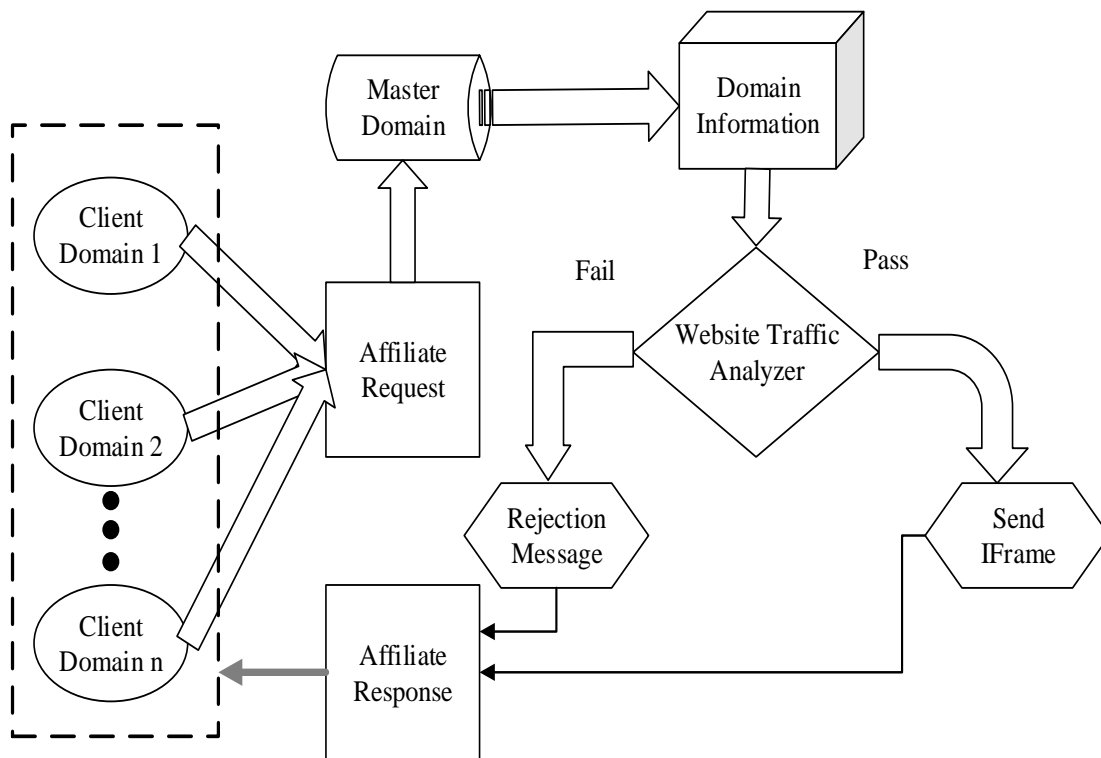
Figure 1 Architecture of digital marketing network

The above diagram illustrates the formation of digital marketing network. It has two major elements. One is master domain and another one is client domain. All the control panels of marketing strategy will be exist in master domain. Client domains can become advertising partner by affiliate request. This requests will be approved with the help of website traffic analyzer. If a domain satisfies the rated traffic, iframe panel will be issued to the particular domain. Low rated domains will be rejected. Thus selected domains will be act as advertising partner for the master domain.
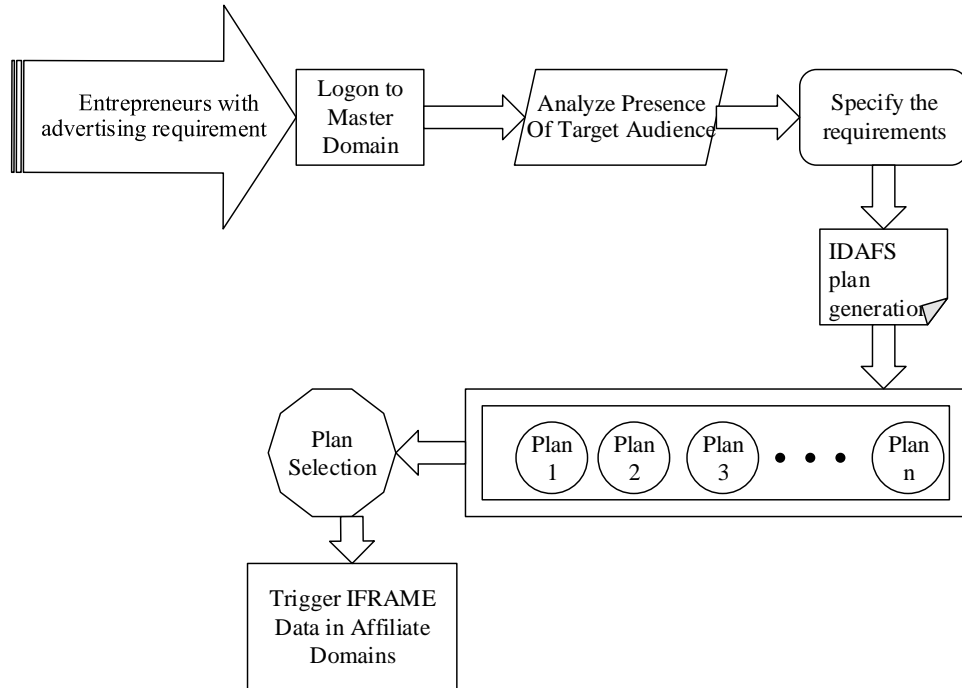
Figure 2Flow chart of proposed method

Initially the entrepreneur's logon to the master domain .Here the users can analyses the traffic of list of client websites. If the customer is satisfied with the traffic information they need to submit the requirements. This requirements are processed by intelligent demand aware fuzzy system and which will produce the possible marketing plans.

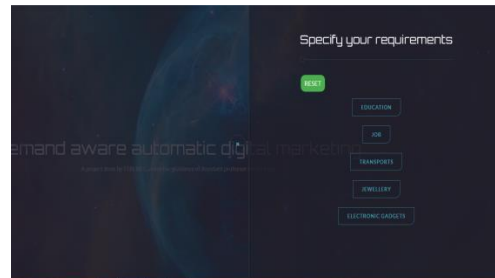*Figure 3 Information panel shows no of visitors in client domain*

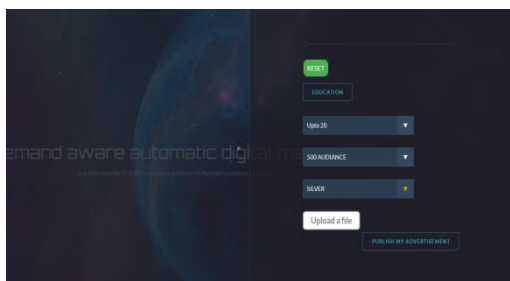*Figure 4 Advertisement category selection panel*

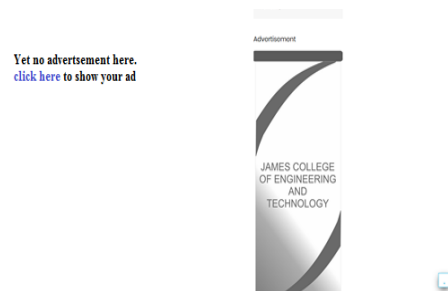*Figure 5 Selection of advertisement plan*

Figure 6 Published advertisement

IV.CONCLUSION AND FUTURE WORK

 The proposed method strongly ensures the presence of advertisement directly to target audience at minimal cost and within short duration. Also age based advertisement can be published, since demand factor has age as an element. Advertising cost is major issue for small startup companies who need high level of brand promotion. The proposed method allows the user to customize the cost depends on their demand. Currently the advertisement triggered at the same instance the advertiser selects the plan. In future the advertisement will be triggered when high number of users present in online.

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