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Review of Different Approaches for E-Commerce Website Ranking

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***Abstract:** In recent years E-commerce industry has grown rapidly. With the assistance of data mining and its integration with E-commerce technology, organizations are increasing their revenues day by day and they are able to attract new customers. Enterprises are deploying new strategies to retain or rebuild relations with their old customers and persistently focusing on new customers. By these strategies enterprises are permeating themselves. Keeping in mind the thought of blending of data mining and E-commerce a tool, "E-Commerce Website Priority Determination Tool" that can extract keywords, links, and HTML tags of various websites with comparable statistics, with the help of which data analyst can find out the problems areas or missing important links or keywords in their websites to restructure their websites. The purpose of this paper is to discuss some of the earlier proposed Ecommerce website ranking technology, models and concept of webpage recommendation.*

I. INTRODUCTION

Now days E-Commerce sector is prospering in various dimensions. It is considered as bright and fastest growing sector in some of the developed countries. Various E-Commerce statistics shows that now India is moving form nascent stage to more refined and advanced stage. There are many reasons for sudden growth of this sector like busy lifestyle, high income groups, high computer literacy rate, feedback availability of products, cash back and easy exchange policies. Now day's business transactions over internet are considered as comfortable and reliable. [1][2] It is apt to say that some of the online businesses are popular because of their well-structured and customer friendly websites. Hence to focus on an effective and optimized website is a real challenge for this industry.

In today's world E-commerce sites are becoming capital of market. No buddy wants to go outside for the market, just because of the reliability of these website, these websites are more trusted then market. In market when customer goes, it may be confused by the sellers by listening their greedy things or quote, may be customer over charged by the shopkeeper, sometimes customer may feel shy in front of shopkeeper, but E-commerce sites never do this, Customer never forced by any one. E-commerce person try to provide the best item to their customer and they maintains believe to their customer. All the rules and thing are same for every buddy as far as E-commerce are concerned. Some businesses such as catering suppliers, retailers and travel agents etc. rely on e- commerce websites for part or most of their revenue. A typical e-commerce site provides product search, coupled with query suggestions i.e. In the search field and automatic generation of recommendations. E-commerce sites are sometimes custom-built database applications.

Customers are more precisely looking towards Ecommerce sites and wait for the product to come on the site numbers of well-established and reputed companies are launching their product on this platform, maintaining faith about these websites is a tough task and this the problem, these websites having huge amount of data and to recognize this data is the big task for the stakeholder, every item has a huge data like an item has approximately eight hundred to five thousand comments , if these user review do not taken seriously by these companies and do not take serious action about the product, so that the quality of product may get affected and these E-commerce companies may lose the trust of the customer, from this to know which item is good for the customer, which item should launch on their platform.

By reviewing all the comments of all the product a decision can be made whether the respective product having quality to place on the E-commerce website or not, but this process is time consuming and required extra man power or a team to recognized it.

There are different technologies to the solve the problem it can be work as an artificial brain but explicitly for the respective work only, by using this approaches we can recognize all the user reviews without doing any kind of mistake, without wasting any kind of money or without wasting time. At a single click we can recognize thousands of reviews. In these days soft computing techniques are heavily deployed in the Ecommerce business in the form of data warehousing and soft computing is the heart of data warehousing or any other advance technology today. Same as artificial neural network is the heart of this problem. Excellent work has been done in the area of E-commerce like product filtering, web personalization, Electronic

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negotiation, collaborative filtering, Product taxonomy etc. Various types of techniques used here, whether it may be artificial neural it may be data warehousing or it may be any other technique which is used to complete the objective of these approaches.

II. RESEARCH WORK

There are number of E-commerce companies in the world and they acquires different techniques of personalization Shuchih Ernest chang proposed a new area of personalization in which customers knowledge is used into personalization process as a part of overall Electronic commerce strategy for business [6]. This technique is used to know the customer's knowledge by filling questionnaires. To recognize customer's navigational behavior a pre trained neural network is used, two methods are used to know the accuracy rate to detecting the customer's product knowledge level by filling a questioner. Knowledge level assessment system (KLAS) and hybrid KLAS. Both the methods responsible for navigation pattern mining but sometimes KLAS is not accepted by some users so for that kind of users hybrid KLAS is used to know their product knowledge level.

Excellent work has been done in the area of E-commerce like product filtering, web personalization, Electronic negotiation, collaborative filtering, Product taxonomy etc. Various types of techniques used here, whether it may be artificial neural it may be data warehousing or it may be any other technique which is used to complete the objective of these approaches.

Advance adaptive E-Commerce search is a personalized search for retrieval and ranking of relevant E-commerce websites by using intelligent technologies like semantic web, neural networks. The personalized search mechanism requires big data analytics to retrieve useful association rules from data in text, images or videos format as available on social media and purchase history of various customers to retrieve customer specific E-Commerce website ranking patterns efficiently. There are different types of traditional personalized search systems as discussed in the literature [7].

III. LITERATURE REVIEW

E-Commerce websites are considered as face or representatives of their respective companies. A well designed website is considered as successful website. It is designed in such a way so that it can satisfy user needs. Hence to have an optimized, updated and structured website is the ultimate goal for all E-Commerce organizations now days.

In this regard we are going to discuss improved mining strategies which are required to maintain optimized website structure which in turn is helpful for businesses to increase their revenues, to keep check on competitor's websites, comparison of various brands, attracting new customers and to retain the old customers.[3]

In order to improve the precision of ranking web pages, after analyzing the original PageRank and its improved versions, we record the visited time of the page to check the degree of importance to the users. It means we use the time factor to improve the precision of the ranking, what we call Time Rank. It can be treated as the combination of content and link structure in another way. [8]

There is proposes a method of reranking the search results that have been primarily ranked using either conventional algorithms that use link structure and user clicks or semantic algorithms, using a combination of general webpage features and user interests. The features of web pages like images, videos etc., are extracted by crawling them and the user's general interest in those features are learnt from past queries made and clicks on particular results. Using the degree to which each feature is present and the corresponding interest of the user, the user's interest in a particular search result is predicted and consequently the results are re-ranked in such a way that it augments the efficiency and effectiveness of conventional intent / meaning driven semantic search concept.[9]

With the extensive expansion in the number of E-commerce websites, applying Web Usage Mining techniques to improve business is imperative. Also, employee as well as visitor satisfaction is important for an enterprise. This satisfaction is usually depended upon both, the effectiveness and efficiency of the search technology and how that information is published.[4]

ANN is a widely used technology in computing world and there are number of areas where it is applicable. ECommerce sector is also a kind of an area where ANN based algorithms can be applied. Quality of product is very essential thing for the customer as well as stakeholders of the company. Customer of an E-Commerce website has no way to assess quality of a product accept to read huge number of reviews. This research work focus over developing a decision making algorithm which can evaluate quality of a product by categorizing previous reviews on a scale of numbers and display it over an E-commerce website. Customers can make use of this ranks provided with products over any E-Commerce website to make their own decisions.[5]

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This web site was created for the sole purpose - to implement and test all main SEO techniques. The main objective of this paper is to find whether search engine optimization increases rank of website in search results and subsequently leads to bigger traffic. This research question is supported by testing and verification of results. The final part of our paper concludes the research results and proposes further directions. [10]

IV. AN APPROACHES FOR E-COMMERCE WEBSITE RANKING.

In this section we discuss the different approaches using for e-commerce website ranking. An innovative approaches like web Mining, Data mining, neural computing, etc.

machine learning and data mining techniques with which the system give the results to new users by mining the data of old users having same inputs/query and by giving them semantic results in the form of ranked e-commerce websites. This system is best from user point of view because it is implicitly dependent on the user action and improves itself by using data mining algorithms based on user actions.

Table I
Implementation of Various Data Mining Techniques.

Data Mining Techniques	Description
Path Analysis	• Helps to determine frequently visited path browsed by user. • Improves the design of web pages and thereby assist to implement the well-structured and competition resistant websites.
Association Rule Mining	• Helps to determine relationships among various items from vast data. • Helps in improving websites design and cross selling, purchasing suggestion to customers etc.
Classification and Prediction	With the available historical data produced by E-Commerce websites, future data can be predicted, which is helpful to classify items according to customer needs.
Sequential Analysis	• Uses the scheme of “some items following others". • Promotes idea like targeted advertising.
Cluster Analysis	• Enhance the future marketing strategies, such as sending marketing e-mail related to sales automatically to a particular group of customers. • By extracting rules from clustered customers, personalization services can be given to customers that are also helpful to improve the website design.

V. CONCLUSIONS

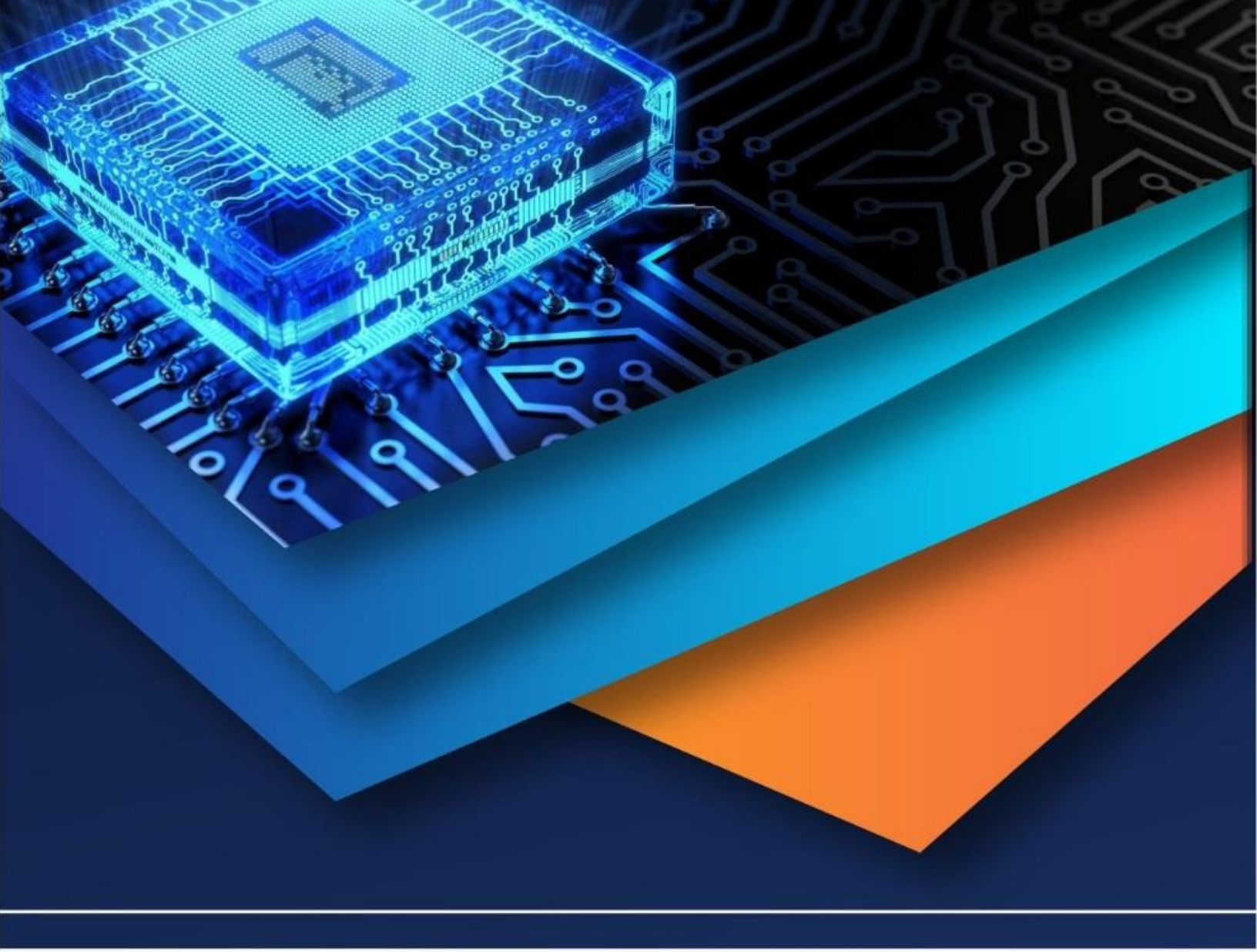
E-Commerce is the sunshine sector of India. Ecommerce is shaping the overall face of enterprises to world. Today’s customers are highly dependent on web. Now for the current scenario, it is the demand of the situation that we should explore more opportunities in web. Companies must pay attention on the customer requirements and their preferences. The purpose of this paper is to discuss some of the earlier proposed Ecommerce website ranking technology, models and concept of webpage recommendation. In this paper we discuss the different approaches using for e-commerce website ranking. An innovative approaches like web Mining, Data mining, neural computing, etc.

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