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Analytical Study of Information Retrieval techniques and Modified Model of Search Engine

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ABSTRACT:

The concept of Information Retrieval is very vast and too many models of search engines are available in the market. In this research various information retrieval techniques used in search engine were studies and modified model of search engine were developed. In web mining most of the web search engines retrieve the documents or information first without knowing the meaning of the keyword and then ask for the relevant meaning of the keyword entered by the users. That means without understanding the exact meaning of keyword if it has synonymy or polysemy meanings. Search engine retrieve the documents as per its perception and then ask for did you mean? Due to that it takes more time to retrieve the relevant or quality documents. As in existing search engine there are too many problems by using previous techniques; there is need to develop, modify or combine more than existing algorithm. The proposed model; preference mining is based on existing model with few modifications. In this model first user's preference will be taken into account and then information gets retrieved. By using this model knowledge seekers will get relevant documents as per their interest within short period of time.

Keywords: synonymy, polysemy, Web crawlers, indexing, ontology

Introduction:

Web search is very different from normal information retrieval search of a printed document because of some factors like Bulk, Diversity, Growth, Dynamic, Demanding users, Duplication, Hyperlinks, Index Pages and Queries etc. Search engine do not search the web, they only search their databases.

Designing and building a good search engine is challenging task because of the scalability and performance. Search engines are huge databases of web pages as well as software packages for indexing and retrieving the pages that enable users to find information of interest to them.

The search engine databases of web pages are built and updated automatically by Web crawlers. Nobody is searching the entire Web. Instead one is only searching the database that has been compiled by the search engine. Huge database is searched using some kind of index and update their databases by using Web crawlers to find pages that have changed.

Web search engines either build directories like Yahoo! Or build full text indexes like Google to allow searches. There are also some meta-search engines that don't build and maintain their own databases but instead search the databases of other search engines.

Stemming algorithms can be quite complex and generally deal with prefixes as well as postfixes and must decide which affix is applied first. These algorithms are not perfect since they are based on heuristics.

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The proposed model; preference mining is based on existing model with few modifications. In this model first user's preference will be taken into account and then information gets retrieved. By using this model knowledge seekers will get relevant documents as per their interest within short period of time.

Literature Review:

Devi et al. (2014), The PageRank and HITS algorithm give importance to links rather than the content of the pages. Both algorithms for ranking of web pages against the various parameters such as methodology, input parameters, relevancy of results and importance of the outcome, it is concluded that these techniques have limitations particularly in terms of time response, accuracy of results, importance of the outcome and relevancy

RESEARCH JOURNAL

Indexed By :

J-Gate

Study of Information Retrieval techniques of Search Engine with Special reference to different Institutions in Pune Region

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ABSTRACT:

The concept of Information Retrieval is very vast and too many models of search engines are available in the market. In this research various information retrieval techniques used in search engine were studied and reviews from different institutions / organizations about information retrieval has been taken into consideration. By this study many organizations knowledge seekers agreed with two major problems of efficiency and effectiveness due to retrieval without understanding meaning and stemming problem respectively. In web mining most of the web search engines retrieve the documents or information first without knowing the exact meaning of the keyword for synonymy or polysemy and then ask for the relevant meaning of the keyword entered by the users. That is it retrieve the documents as per its perception and then ask for did you mean? Secondly at the time of stemming some irrelevant stem has been taken into account and irrelevant documents gets retrieved. Due to this efficiency and effectiveness of search engine gets degraded.

Keywords: stemming, polysemy, synonymy, Indexing, Text Transformation and Text Acquisition, crawler

INTRODUCTION:

Web search is very different from normal information retrieval search of a printed document because of some factors like Bulk, Diversity, Growth, Dynamic, Demanding users, Duplication, Hyperlinks, Index Pages and Queries etc. Search engine do not search the web, they only search their databases.

Designing and building a good search engine is challenging task because of the scalability and performance. Search engines are huge databases of web pages as well as software packages for indexing and retrieving the pages that enable users to find information of interest to them.

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Sharma D. K. and Sharma A. K. (2010), In this paper existing page ranking algorithm techniques have limitations particularly in terms of time response, accuracy of results, importance of the results and relevancy of results. An efficient web page ranking algorithm should meet out these challenges efficiently with compatibility with global standards of web technology.

Brin et al. (1998), Graph based algorithm based on link structure of web pages. Consider the back links in the rank calculations. Rank is calculated on the basis of the importance of pages. Results are computed at the indexing time not at the query time.

Kleinberg (1998), Rank is calculated by computing hub and authorities score of the pages in order of their relevance. Returned pages have high relevancy and importance with less efficiency and problem of topic drift.

Kim et al. (2002), This algorithm probabilistically estimates that clear semantics and the identified authoritative documents correspond better to human intuition. Well defined semantics with clear interpretation. Efficiently provide answer to quantitative bibliometric questions. Priori should be decided on the number of factors to model. Trades computational expense for the risk of getting stuck in local maxima.

Xing et al. (2004), Based on the calculation of the weight of the page with the consideration of the outgoing links, incoming links and title tag of the page at the time of searching. It gives higher accuracy in terms of ranking because it uses the content of the pages. It is based only on the popularity of the web page.
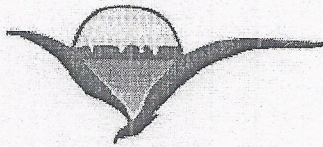
Employee Retention Practices in Selected IT Units in Pune: Case study

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ABSTRACT

Employee retention is referred to retain existing skilled and knowledge worker in their workforce. The turnover leads to hiring and training expenses, productivity loss, customer's loss, diminished business and creates disturbance harmony among existing workforce. Hence, HRD has to play a key role in designing the practices, which can enable an organization to retain human resource to reduce above problems and retaining the knowledge workforce, which will contribute significantly to the business. The competencies and skills of knowledge worker have become extremely vital comparative advantage in the present day of IT units. Pune ecstatically referred to as a 'Silicon Valley of India' has rapidly developed to a dynamic information technology hub housing several IT units. The present study examines the employee retention practices adopted by HRD, which retention tools are most effective, attrition trends at different level at the IT unit hierarchy and most influencing reasons for attrition at selected IT units in Pune.

Keywords— Turnover, HR Practices, Retention, Information Technology units.

I. INTRODUCTION

The Information technology has been in news for many reasons, mainly for generating revenue and the employment it has generated. Due to high profit and well-paid market, lot of small and big industries have come into the market, and therefore a major segment of youngsters have selected their profession in IT sector. When so many IT industries are available, employees have an option of changeover their job very frequently. Before switching the job employees consider some factors, some of which are: working hours, good working conditions, challenging projects, perks, decent salary package, higher education, career growth, salary package, support for pears, employees support for higher education. The minute they feel they are being under utilized they start searching the job which leads to turnover. To avoid such situation, IT units have to give attention on retention.

Turnover of the employees in the IT units leads management to many problems. Retention of the employees reduces the cost of the product, increase productivity and condense brain drain of the particular unit. A high rate of turnover affect the organization in many ways like lead to loss of more expenses, loss of company knowledge, interruption of customer service, as well as the goodwill get effected.

Handling the employee retention issues has got a serious attention at all level of management in IT unit. The problem of employee retention has hit all categories of employees equally. Employee retention is one of the largest universal phenomenon's being faced by the IT units. The HRD of IT units should put in appropriate efforts to retain the employees. This research paper is a line of study on the key retention practices followed by IT units has been investigated as case study.

II. REVIEW OF LITERATURE

Retention is a voluntary move by an organization to create an environment which engages employees for long term (Chaminade, 2007)[3]. The main purpose of retention is to prevent the loss of competent employees from the organization as this could have adverse effect on productivity and service delivery. However, retention of high performing employees has become more challenging for managers as this category of employees frequently move from one job to another as they are being attracted by more than one organization at a time Michael O. Samuel and Crispen Chipunza (2009)[7].

According to Osteraker (1999), the employee satisfaction and retention are the key factors for the success of an organization. The Retention factor can be divided into three broad dimensions, i.e., social, mental and physical. The mental dimension of retention consist of work characteristics, employees always prefer flexible work tasks where they can use their knowledge and see the results of their efforts which, in turn, helps in retaining the valuable resources. The social dimension consists of the contacts that the employees have with other people, both
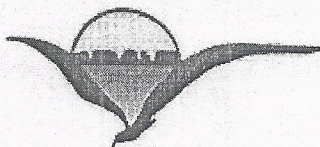
A Study of Employee Retention V/S Demographic Variables in IT-Units of Pune City

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ABSTRACT

Success and failure of any organization depends on its human resource. Global explosion in business creates more opportunities, so people are highly mobile and not restricting to particular job. IT Industry, being a knowledge-based industry, a high intellectual capital lends competitive advantage to a firm. In IT, there are lots and lots of avenues and opportunities available in the hands of IT employees. The retention problem is highly persisted in IT industry. The shortage of manpower both in numbers and skills is a prime challenge for HR managers in IT-units. The compensation, career planning and technological obsolescence are the facts for employee turnover in IT-Units. There are many other factors which influence employees to leave but HRD need to understand employee expectations from the organization, which can make them to stay long back and perform well. The demographic details of the IT professionals should also be considered while designing the retention strategies as some of these variables have proved to have influence on retention. The objective of this paper is to understand that, is there any relation in frequency of job change with growing age and does different retention factors influences on different age group . The result of this study shows that retention factors are same in the different age groups and number of job changed is not constant in different age group. The study area is selected IT-units in the Pune city.

Keywords---- HR Practice, IT Industry, Attrition, Employee Retention.

I. INTRODUCTION

In this knowledge age, human resource is considered as the most important resource of the organizations and retaining them in the organization becomes significant for success of that organization. With all round development in each and every area of the economy and there is stiff competition in the market, so there are lots and lots of avenues and opportunities available in the hands of the human resources. Securing and retaining skilled employees plays an important role for any organization, because employees' knowledge and skills are central to companies' ability to be economically competitive.

Employee turnover is perceived in a number of different ways. Employee turnover refers to the number or percentage of workers who leave an organization and are replaced by new employees. The turnover can be Involuntary, Voluntary, Desirable and Undesirable. The most common reasons for leaving a job are *'poor salary and benefits', A lack of training and development opportunities, Dissatisfaction with management, Not getting along with colleagues, The journey to work, Lack of work/life balance*.

However, the Information technology industry is young and, retention trend has yet to be instituted. Acquiring the right people is rather easy and simple but retaining talent resources in the jobs for which they are hired is much difficult. The expanding global job opportunities, get highly attractive and remunerative jobs elsewhere and highly attractive terms and conditions of employment offered are simply motivates the employees to leave their current jobs. They are also attracted by the career and other opportunities available and provided globally within country as well as outside the country. A qualified IT employee also finds the opportunities up the hierarchy very fast which they wants to grab. In this industry, the knowledge workers/ professional employees constitute the most important resource for an organization must be retained.

The sector has increased its contribution to India's GDP from 1.2% in FY1998 to 7.5% in FY2012. According to NASSCOM. IT the sunshine industry of India that contributed a major share towards the GDP (6.4% in 2011) of our country had faced with the challenge of retaining people as the attrition rate was high. In FY12, IT industry has witnessed an average attrition rate of 17-25% as compared to other sectors in

A Study of retention variables influencing employee attrition for IT-units: with special reference to - Pune City.

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ABSTRACT

In this era of globalization employees are blessed with good opportunities. There are many factors which influence retention and it is required to understand employee expectations. Employee Retention is a process in which the employees are encouraged to be with the organization for the maximum time. To support business optimally, need is to retain existing talented employees who have the essential knowledge, expertise and competencies to do the work. The IT industries are facing the critical challenges of recruiting and retaining the best talents. The retention problem is highly persisted in IT industry. The objective of this paper is to find out the factors which influence employee turnover and reasons for turnover in IT-units. The study is done in selected IT-units in the Pune with the post exit employees. The twelve retention variables have been used for the study. The results showed that some of the retention variables are highly influencing attrition. One gets the trends of attrition in IT-units in Pune and accordingly, HRD can design its retention strategies as suggested in this study.

Key Words: - HR Practice, IT Industry, Attrition, Employee Retention, retention variables.

I-INTRODUCTION

The evolution of HRM (Human Resource Management) can be traced back to the HR movement in the ancient period. Since last 100 odd years, the techniques and study of human behaviour at work has become formal and structured with certain basic practices established as core. Individual business has been designed, implemented and practiced according to business need and their goal. Every organization has its own culture and it is the blue print of its features, its people, its success and its failure. Today, HRM is the key section of an organisation and its role is to develop strategies time to time in rapidly changing global business environment to retain their existing talent employees so that the set organisation goals are achieved. The Information technology (IT) has been in news for many reasons, mainly for generating revenue, high profit and well-paid market. The IT industry in India has gained a brand identity as a knowledge economy due to its IT and ITES sector. The sector has increased its contribution to India's GDP from 6.1% in 2009-10 to 6.4% in 2010-11, 7.5% in 2011-12 and has grown 19% during 2012-13, NASSCOM (2013). A lot of small and big industries have come into the market, and therefore a major segment of youngsters have selected their profession in IT sector. When so many IT industries are available, employees have an option of changeover their job very frequently. Before switching the job employees consider some factors, some of which are: working hours, good working conditions, challenging projects, perks, decent salary package, career growth, salary package, support form pears, support for higher education. The minute they feel, they are being underutilized, they start searching the job which leads to turnover. To avoid such situation, IT units have to give attention on retention.

The retention of high performing employees has become more challenging for managers as this category of employees frequently move from one job to another as they are being attracted by more than one organization at a time Michael O. Samuel and Crispen Chipunza (2009). However the reason for employee turnover varies from one Organization to the other and from one person to another as they are not getting what they expect from the Organization (Ongori, 2007). Mobley (1982) and Dickter, Roznowski and Harrison (1996) also called for more research and theory pertaining to how the turnover process occurs overtime. Turnover of the employees in the IT units leads management to many problems. Retention of the employees reduces the cost of the product, increase productivity and condense brain drain of the particular unit. A high rate of turnover affect the organization in many ways like lead to loss of more expenses, loss of company knowledge, interruption of customer service, as well as the goodwill.

The turnover can be Involuntary, Voluntary, Desirable and Undesirable. The most common reasons for leaving a job are *'poor salary and benefits'*, *A lack of training and development opportunities, Dissatisfaction with management, Not getting along with colleagues, The journey to work, Lack of work/life balance.*

Handling the employee retention issues has got a serious attention at all level of management in IT units. The problem of employee retention has hit all categories of employees equally. Employee retention is one of the largest universal phenomenon's being faced by the IT units. The HRD of IT units should put in appropriate efforts to retain the employees. Apart from conventional retention practices there are non-conventional retention practices followed to

44

A Study of Current Scenario of Cyber Security Practices ad Measures:

Literature Review

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Abstract— Security measures are of prime importance to ensure safety and reliability of organizations. Hacking of data and information has become almost a routine and regular of organizations. Before we think to combat such a situation; to avoid both predictable and unpredictable loss, danger and risk associated, tangible and intangible factors, we have to strategize in keeping cool in the heat of battle and find out the causes attributing to the same; so proactive action need to be taken to exterminate the same. The researchers feel to encircle parameter to have an in-depth insight such as – integrity of network connections and components, telecommunication issues, firewall, filtering, intrusion detection and prevention system, and network maintenance. These are in fact intra and interrelated.

Keywords— Intellectual property, computer security, security risks, vulnerability, antivirus, encryption, cyber terrorism, auditing, reviewing, intrusion detection system and intrusion prevention systems.

INTRODUCTION

In today's information-age, an organization's dependence on cyberspace is becoming an increasingly important aspect of organizational security. As different organizations infrastructure are interconnected in cyberspace, the level of risk to national security has increased dramatically. The threat to cyber security is growing. Computer systems at colleges and universities have become favored targets as they store same record as bank. In academic institute, malicious software (malware), phishing, infrastructure attacks, social network targeting, and peer-to-peer (P2P) information leakage are daily issues. Most university's financial, administrative, employment-related records, library records, certain research and other intellectual property-related records are accessible through a campus network and hence they are vulnerable to security breaches that may expose the institute to losses and other risks.

CYBER SECURITY ATTACKS

Cyber attack refers to the use of deliberate actions—perhaps over an extended period of time—to alter, disrupt, deceive, grade, or destroy adversary computer systems or networks or the information and/or programs resident in or transiting these systems or networks. Such effects on adversary systems may also have indirect effects on entities coupled to or reliant on them. A cyber attack seeks to cause adversary computer systems and networks to be unavailable or untrustworthy and therefore less useful to the adversary.

Ponemon Institute presents the cyber crime study which is based on a sample of 56 organizations in various industry sectors in United States. Table-1 shows the statistics of different types of cyber attacks occurred in year 2012 & 2013.

Types of Cyber attacks	2012	2013
Viruses, worms, trojans	100%	100%
Malware	95%	97%
Botnets	71%	73%
Web-based attacks	64%	63%
Stolen devices	46%	50%
Malicious code	38%	48%
Malicious Insiders	38%	42%

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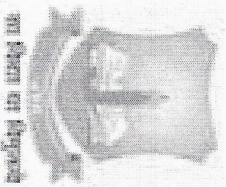# International Journal of Research in Computer Science and Management

Hereby awarding the certificate

Ms. Sarika R. Patil

In recognition of publication of paper entitled

An analytical study of search engine optimization technique for information retrieval

Binod Kumar

Dr. Binod Kumar
Editor in-Chief
JSPM's Jayawant Technical Campus,
Tathawade, Pune

46

AN ANALYTICAL STUDY OF THE SEARCH ENGINE OPTIMIZATION TECHNIQUES FOR INFORMATION RETRIEVAL SYSTEMS

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Abstract-Search engine is the most prominent tool to extract information from web (www).It is a very large distributed digital information .The concept of information retrieval systems is to only receive the input from user as keywords,process it then compared with the database and the information is provided to the user. search engine optimization is the technique which is used to increase the importance of the pages which are most frequently visited which the user come upon regularly.This article introduces and discusses the concept of search engine optimization, features of web search engine and overview of elements and tools used in search engine optimization. In search engine optimization there are mainly two basic algorithms used page rank and Hypertext Induced Topic Search(HITS). In page rank algorithm, links connected to various web pages and websites are given more importance and weightage while in the HITS algorithm query based search is performed.

Keywords: Search engine optimization (Seo,) Information Retrieval Systems ,links, webcrawler.

1. INTRODUCTION

Information Retrieval System is the process of improving the visibility of a website or web page. The general objective of an Information Retrieval System is to minimize the overhead of a user locating needed information.(e.g. query generation, query execution). World wide web provides us with huge amount of necessary data digitally availanle as hypertext data may be web pages, images, information and other type. Search engine is internet based tool that searches an index of documents for a particular term,phrase or text specified by user. Search engine optimization can be referred to as addition and modification of all variables and extended variables of a website to achieve a better position in the search engines. The variables implies to META tags and content. And the extended variables implies to links from other sites. This optimization is done in stages. Search engine optimization is not simple. It is more about strategy, method and structure.

2. RELATED WORK

Generally people visit a website to find out information according to their need, but if they did not find right content they immediately click away from site so in order to draw their attention and bring them back maximum number of times. It fulfills user need as well as improves rank position in search engine.It is the process of improving the number and quality of traffic

to a web site from search engines via natural listing for targeted keywords. It refers to the process of "optimizing" both the on-page and off-page ranking factors in order to achieve high search engine rankings for targeted search terms.cloud to have all information and on the basis of that information the decisions are to be made. So the provenance information leads to the correct decision made by the user.

Search engine optimization is also used for getting higher rank in search results from the business information. Corporate sectors and institutions want to become more recognized worldwide through seeing higher ranks for their websites. It is an approach for the retrieval of web pages related to user requests on the internet. Actual objective is to make more preferable website in search result and make more visitors for higher ranks.
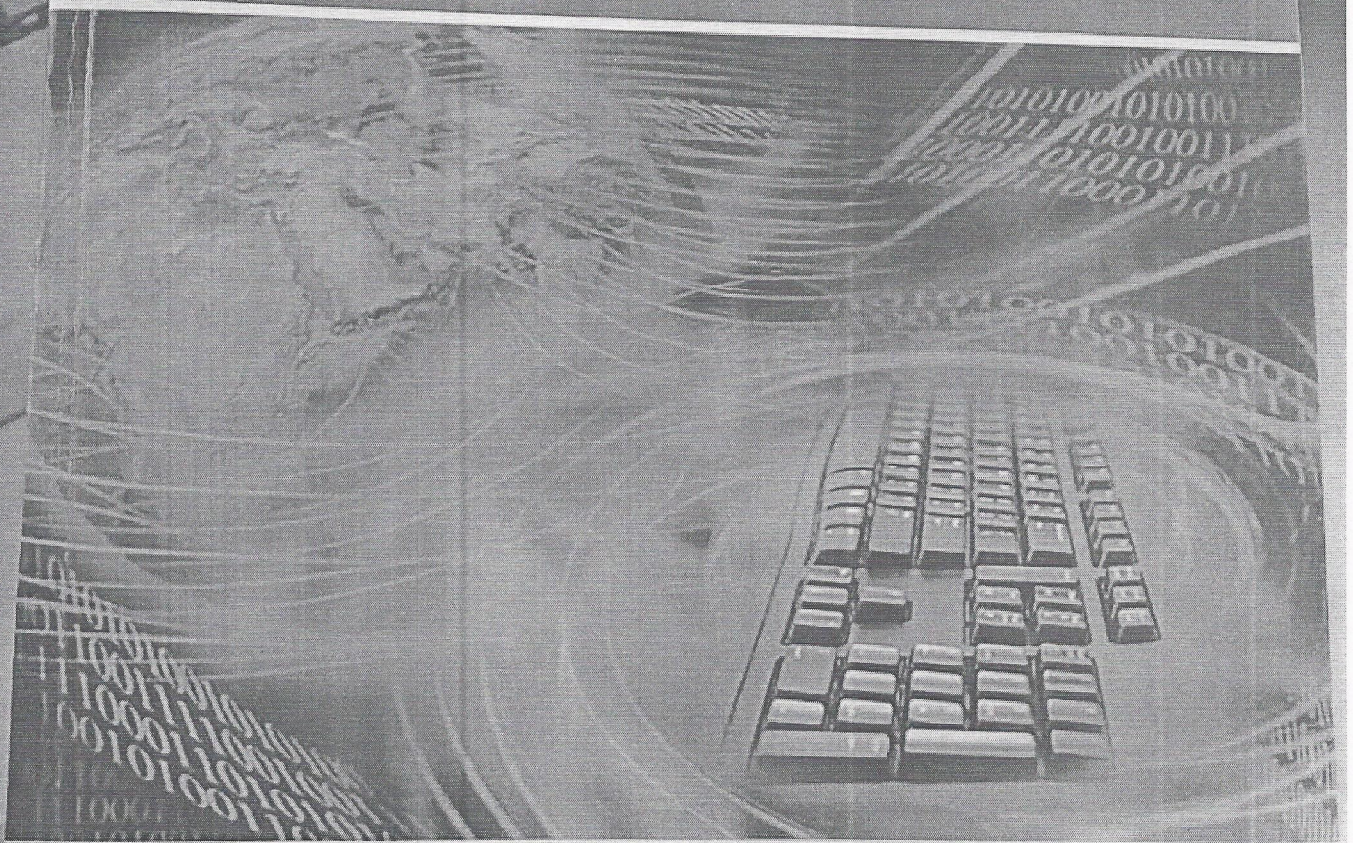Examples for popular search engines

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A STUDY ON DISEASE PREDICTION USING DIFFERENT DATA MINING TECHNIQUES: REVIEW

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Abstract: Data mining is the process of extracting hidden information from a large set of database and it can help researchers gain both novel and deep insights of unprecedented understanding of large biomedical datasets. Data mining can uncover new biomedical and healthcare knowledge for clinical decision making. This paper aims at analyzing the various data mining techniques introduced in recent years for heart disease prediction. The observations reveal that neural networks with 15 attributes has outperformed over all other data mining techniques

1. INTRODUCTION

Data mining is the process of finding previously unknown patterns and trends in databases and using that information to build predictive models. Thus the overall goal of the data mining process is to extract information from a data set and transform it into an understandable structure for further use In healthcare, data mining is becoming increasingly popular, if not increasingly essential. Healthcare industry today generates large amount of complex data about patients, hospitals resources, disease diagnosis, electronic patient records, medical devices, etc. The large amount of data is a key resource to be processed and analyzed for knowledge extraction that enables support for cost-savings and decision making. Data mining provides a set of tools and techniques that can be applied to this processed data to discover hidden patterns and also provides healthcare professionals an additional source of knowledge for making decisions. Figure 1 depicts the basic data mining process model.

The World Health Statistics 2012 report enlightens the fact that one in three adults worldwide has raised blood pressure – a condition that causes around half of all deaths from stroke and heart disease. Heart disease, also known as cardiovascular disease (CVD), encloses a number of conditions that influence the heart – not just heart attacks.

2. METHODOLOGY

This paper exhibits the analysis of various data mining techniques which can be helpful for medical analysts or practitioners for accurate heart disease diagnosis. The main methodology used for our work was by examining the publications, journals and reviews in the field of computer science and engineering, data mining and cardiovascular disease in recent times.

3. RESEARCH OBSERVATIONS

3.1 DATA MINING AND NEURAL NETWORKS

An artificial neural network (ANN), often just called a "neural network" (NN), is a mathematical model or computational model based on biological neural network. In other words, it is an emulation of biological neural system. In this work, Heart disease prediction system has been developed using 15 attributes [4]. Earlier 13 attributes were used for prediction but this research work incorporated 2 more attributes, i.e. obesity and smoking for efficient diagnosis of heart disease. Because the combination of overweight or obesity with smoking may modify other cardiovascular disease risk factors particularly HDL-cholesterol and C-reactive protein.

The data mining tool Weka 3.6.6 is used for experiment. Initially, missing values were identified in the dataset and they were replaced with appropriate values using ReplaceMissingValues filter from 3.6.6 [4]. Further, various data mining techniques have been analyzed on heart disease database. Confusion matrix is obtained for each classifier. A Confusion matrix is a specific table layout that allows visualization of the performance of an algorithm

Table 1 depicts the outcomes of this research work and it shows that neural networks has outplayed over other data mining techniques.

Table 1: Comparison of various data mining techniques

Classification Techniques	Accuracy
Naïve Bayes	90.74%
Decision Trees	99.62%
Neural Networks	100%

3.2 FUZZY LOGIC AND GENETIC ALGORITHM

The term "fuzzy logic" was introduced with the 1965 proposal of fuzzy set theory by Lotfi A. Zadeh. Fuzzy logic is a form of many-valued logic; it deals with reasoning that is approximate rather than fixed and exact. In the computer science field of artificial intelligence, genetic algorithm (GA) is a search heuristic that mimics the process of natural selection. This heuristic (also sometimes called a metaheuristics) is routinely used to generate useful solutions to optimization and search problems.

MARKETING MIX AND LIBRARIES IN INFORMATION AGE

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Abstract

Library and information centers main objective is providing and facilitating right information to right user at the right time with the help of information resources. The paper discusses the marketing mix in library context and components of marketing mix. Further, elicit why marketing mix is needed for the library profession and elaborates the how one can use the marketing mix technique to fulfil the core objectives of the library for which it existed.

Keyword: Marketing mix, Library Services, 4P's, Information Needs, End User

Introduction:

The technological changes have created information explosion, as a result of which clientele interested services and products has been continuously increasing (Singh, 2003). According to Spalding and Wang (2006) libraries around the world are facing the problem of rising costs and dwindling budget. Libraries are intended for providing and facilitating right information to right user at the right time with the help of information resources, such as books, magazines, newspapers, print journals, online journals and databases and access to internet. The libraries are experiencing great changes due to technological advancement and varied nature of user's expectation. In this context application of marketing mix could be very appropriate for library professionals to cope with expectations of the user's community which could lead to increase the effectiveness of libraries in the information age.

Wee (2003) stated that in this information age marketing and promotion of our services are pivotal to our survival and also Martey (2000) implied that libraries must survive and thrive because they still have role to play in the community. Librarians like all other professions