© 2018 IJSRST | Volume 4 | Issue 2 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technology

Implementation of Cloud Computing (Software as a Service) for Product based Search Engine

Dr. Birajkumar V. Patel*1, Dr. Dipti B. Shah2
*1Department of Computer Science, Sardar Patel University, Vallabh Vidyanagar, Gujarat, India
2Department of Computer Science, Sardar Patel University, Vallabh Vidyanagar, Gujarat, India

ABSTRACT

There are many search engines available on the web. All are providing solutions in the form of list of URLs, text, images, videos, etc. But no one is providing facility of data warehousing and data mining with implementation of SaaS for decision making. There is a need of new model with user-friendly interface for industry people. The new model will allow user to get domain specific and decision making information based on past transactions stored. Designing new model incorporates optimizing business strategies for future survival of business. There is also need to automate data warehousing, by allowing organizations to keep their operational database with proposed model for real time updates.

Keywords: Search Engine, Cloud Computing, Data Mining, Forecasting, Demand Pattern Analysis

I. INTRODUCTION

This research paper presents a model for implementation of Cloud computing (Software as a Service) for Product based Search Engine.

Search Engine provides better support to the user to search information from the WWW (World Wide Web). And it is well known that results are presented in a list. That list can contain information related to web pages, images or other type of information related files, etc.

Search Engine Optimization refers to improving results provided by Web Search Engine. In Web Search Engine it provides results list, instead of that here The proposed Product based Search Engine will provide some specific conclusion / decision for data related to demand pattern of different types products of different organizations or companies.

The goal of designing new model incorporates optimizing business strategies for future survival of business. For that it needs to create an interface for industry people. The new model will allow user from industry to get domain specific information based on their data uploads. This proposed model is for analyzing data of online as well as offline business transactions. The main purpose of this to provide better decision making result.

II. ORIGIN OF THE RESEARCH PROBLEM

Number of industries start, survive and die. Starting business is good. Surviving business is very good. But end of same business is the worst. There is need to identify the causes for the same. Like every system (including natural systems and artificial systems) each system has its own birth, life and death. In today's era to save life of human being from certain disease various medical solutions available. In industry for survival of business periodical solutions are required.

Various e-Commerce platforms available on the Web, which offers people to buy and sell products online. People who want to run business online may adopt business models like, B2B – Business to Business, B2C – Business to Consumer, C2C – Consumer to Business, C2B –Consumer to Business.

Here, the motive is to design domain specific search engine on cloud for searching and analyzing sales data of e-Commerce (B2C) regarding demand pattern of different products of same category. This will finally conclude with health of business and suggestions.

III. PRODUCT LIFE CYCLE AND RELATED FORECASTING

The product life cycle is always dependent on its demand pattern. It always starts with start up phase. Product life cycle phases are as given below need to cover for proper decision making while analyzing periodical records. [1]

And that includes concept of forecasting.

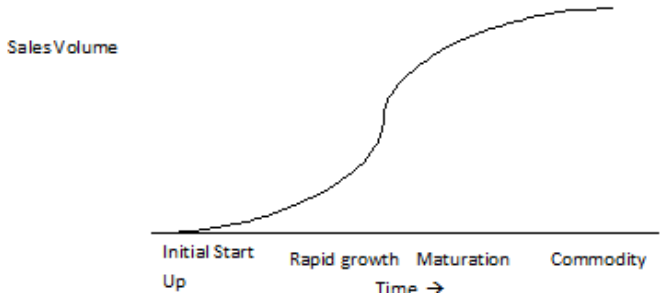

Figure 1. Product Life Cycle

- ✓ Start Up [Job Shop Technology]
- ✓ Rapid Growth [Batch Technology]
- ✓ Maturation [Assembly Line Technology]
- ✓ Commodity [Continuous Technology]

The start up phase is initial phase for any new product and period of that phase is very short that is way out of various process technologies Job Shop technology is most suitable because if product is new there is no past transaction history and related demand pattern. So, to minimize operating cost of company it makes arrangement of resources to manufacture new product in low volume. At entry level industry needs to perform lots of experiments. After initial short period it requires to analyze performance. Accordingly next road map can be prepared. Likewise at the beginning of each remaining phase needs to make arrangement resources as required based on demand pattern using relevant process technology as shown in figure 1 and at the end of each remaining phase it needs to analyse records of transactions performed for a fixed time.

Forecasting is an estimate of a future event achieved by systematic analysis of past data. [1] Using forecasting following types of analysis possible.

- ✓ Time series analysis: In forecasting problems, analysis of demand data plotted on a time scale to reveal patterns of demand. [1]
- ✓ Demand pattern types: (Constant, Cyclical and Linear)
- ✓ Analysis of demand pattern with high noise (Major difference) / low noise Minor difference).
- ✓ Analysis of dependent demand pattern.

IV. BASE MODEL OF PRODUCT BASED SEARCH ENGINE

The structure of the proposed model is as shown in Figure 2.

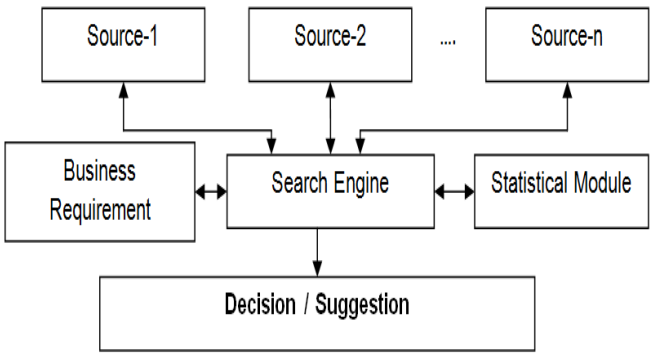

Figure 2. Product based Search Engine

As shown in Figure 2 search engine takes input from different sources where different sources are past transaction records of different companies. Also takes input from industry administrator regarding business requirements and their expectations based on performed transactions. Model also uses statistical methods to take decisions for health of industry.

V. OBJECTIVES OF PROPOSED MODEL

- ✓ Providing facility Software as a Service (Cloud computing)
- ✓ Identification of demand pattern
- ✓ Analysis of demand pattern
- ✓ Identification of business health
- ✓ Providing decision
- ✓ Offering suggestions

VI. WORKFLOW OF THE PROPOSED MODEL

The workflow of the proposed model is as shown in Figure 3.

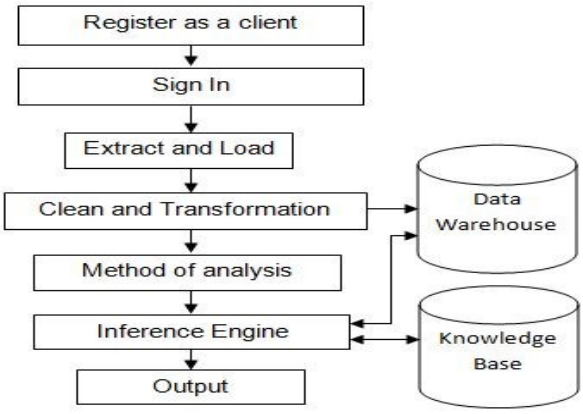

Figure 3. Workflow of proposed model

Figure 3 shows workflow for proposed model where industry or company can register as a client and can upload their past transaction records for data mining purpose and capacity planning which also incorporates selection of particular process technology to minimize operating cost. Model also uses concept of Knowledge Based System (KBS) having two major components (Inference Engine – Software program – with queries and Knowledge Base – with decision making knowledge).

VII. OUTCOME

Following are screenshots of developed modules.

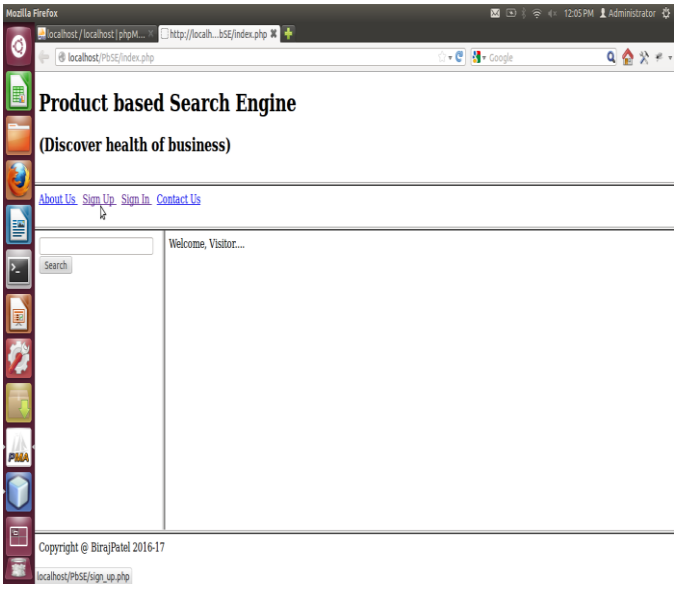

Figure 4. Client-side main interface

Figure 4 shows main interface of client-side from where company can register as a client to work on Software as a Service (SaaS).

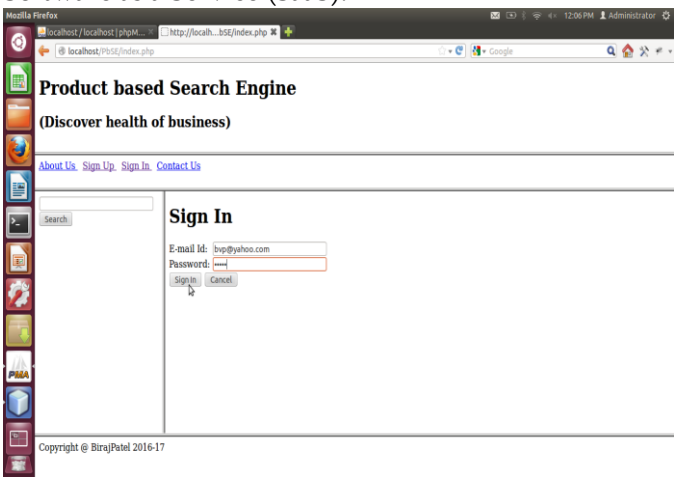

Figure 5. Client-side Sign In page

Registered companies can Sign In as shown in Figure 5, then after company administrator can upload past transaction records and view uploaded records.

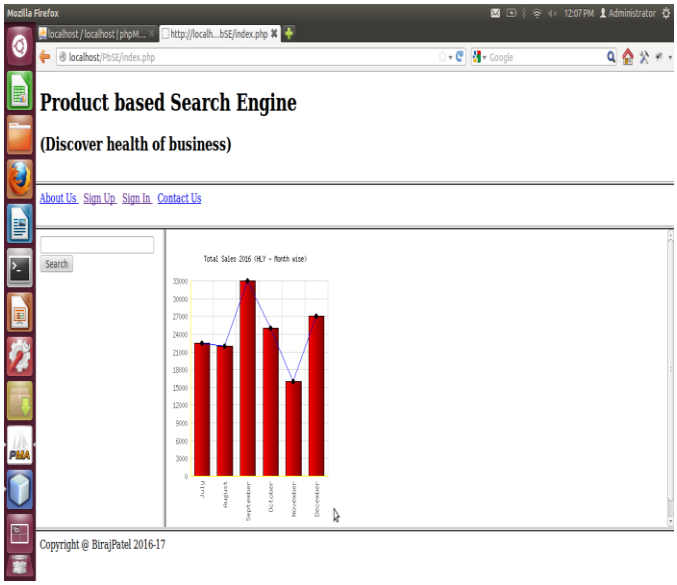

Figure 6. Client-side (Test Output)

Figure 6 shows test output screen. It uses logic using which one can go for comparative study of past performance and current performance for future decision making.

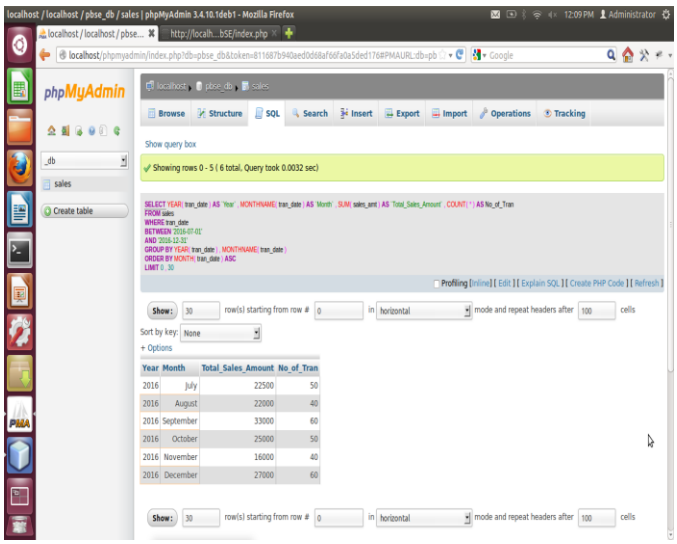

Figure 7. phpMyAdmin browser based CMS showing Test Query format and its output

Figure 7 shows phpMyAdmin browser interface from where one can find catalogs, uploads, summaries, query formats, etc.

VIII. CONCLUSION

The model is developed using PHP and MySQL on Ubuntu operating system. The model facilitates the companies to register as a client to get services of Data Warehousing, Data Mining, Cloud Computing as well as real time operational database of their Transactions Processing Systems. Moreover, this model is working as search engine for companies for taking various operational decisions.

IX. REFERENCES

[1]. Everette E. Adam, Jr. Ronald J. Ebert; Production and Operations Management, Fifth edition, PHI Learning Private Limited (2012)

[2]. James A. O'Brien; Management Information Systems, Fourth edition, Galgotia Pub,ications Pvt. Ltd (2001)

[3]. Sam Anahory, Dennis Murray; Data Warehousing in the real World, Pearson Education

[4]. Paul Hudson; PHP-A Desktop Quick Reference, Shroff Publishers & Distributors Pvt. Ltd

[5]. www.faganfinder.com/products/

[6]. econsultancy.com/blog/67745-15-examples-of-artificial-intelligence-in-marketing/

[7]. www.strategies-for-uncertainty.com/?p=248

[8]. hbr.org/1971/07/how-to-choose-the-right-forecasting-technique