Chapter 21
A Framework to Improve Performance of E-Commerce Websites

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ABSTRACT

The growth of the world wide web has made business functions fast and easier. E-commerce has provided cost effective ways of doing business. E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations. The advantage of e-commerce over traditional businesses is faster speed and lower expenses for both businessmen and customers. The main objective of the chapter is to provide an efficient framework to analyse the performance of e-commerce websites and suggest the factors that need to be incorporated in e-commerce websites for better business intelligence. The purpose of business intelligence is to support better business decision making. In this chapter, a detailed description of business intelligence enables the web developer and end user to know the insights of e-commerce web applications. The methodology is comprehensive and it elaborates all aspects of the performance of a website.

INTRODUCTION

The World Wide Web (WWW) has become an important channel for information retrieval, electronic commerce and entertainment. However, long Web page download times have remained a major cause of frustration among Web users. According to the findings of the surveys conducted by Lightner et al, (1996) and the GVU (Graphic, Visualization and Usability) Centre at Georgia Institute of Technology (GVU, 1998), long download times have always been a major problem experienced by Web users. The survey by Pitkow et al, (1996) also indicates that the most widely cited problem using the WWW was that it took too long to download Web pages (i.e. 69% of respondents cited this problem). This problem is worsened by the exponential increase in the number of Web users over the years and the popularity of multimedia (e.g. video, voice) technology. This problem is so noticeable that Web users often equate

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the "WWW" acronym with "World Wide Wait"! According to The long waiting time for downloading Web pages is often not tolerable even in the wired environment. Due to the increasing and excessive use of multimedia data (i.e. audio and video clips) on Web pages, this concern is continuously growing. The problem of 'long download time' is relevant not only to Web users but also to the authors and designers of websites, as websites that take a long time to download are rarely or less frequently visited (Reaux et al, 1997). The authors (G. Sreedhar et al, 2017) suggested in their research work slow Loading pages affects the sales and longer negative effect and 40% on line shoppers feel comfortable to revisit if the website load quickly.

Objectives

- To study and analyze the components of e-commerce application and relevance of web mining.
- To find insights of Business Intelligence.
- To incorporate the idea of Internet of Things.
- To provide a comprehensive frame work for analyzing the e-commerce website.
- To analyze the performance of e-commerce website through frame work.

BACKGROUND

E-Commerce Web Applications and Web Mining

E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations. The advantage of e-commerce over traditional businesses is the faster speed and the lower expenses for both e-commerce website owners and customers in completing customer transactions and orders. Because of the above advantages of e-commerce over traditional businesses, a lot of industries in different fields such as retailing, banking, medical services, transportation, communication, and education are establishing their business in the web. But creating a successful online business can be a very difficult and costly task if not taking into account e-commerce website design principles, web engineering techniques, and what e-commerce is supposed to do for the online business. Unfortunately, to most companies, web is nothing more than a place where transactions take place. All the e-commerce sites have high traffic. People surf the sites very often but the income is not always very high. So, the web data mining appeared and also nowadays much attention is paid to it. It is very important to apply web data mining to e-commerce in order to gather knowledge about users and rank data accordingly. It is advance successful technology through which information is filtered easier. So, web data mining became a publicly accessible source that gives promising results. With the use of e-commerce through internet, companies find a new and better way to do business. After developing the web site thought companies get benefits, they have to implement Web mining systems to understand their customers' profiles and to identify their own strength and weakness of their E-marketing efforts on the web through continuous improvements. Internet is a gold mine, but only for those companies who realize the importance of Web mining and adopt a Web mining strategy now. Web mining technology has many important roles that should be mentioned. It can automatically find, extract information from the variety web resources. The authors Etnoteam S. et al (2000) said that web mining develops, improves and enhances the quality and the efficiency of search engines, determines web pages or files,

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