

ITEC 811 Project Proposal:
Web Analytics Dashboard and Analysis System
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13th March 2009

SUMMARY

Modern web analytics tools collect vast amounts of information about website visitors; these reporting systems make it difficult to identify trends in data due to the number of reports available. By developing a system that logically presents automated analysis based on trends and patterns, web analytics users will be able to implement improvements to their websites. In order to develop the web analytics dashboard and analysis system, data will be collected by a third party web analytics tool. Research will be undertaken into existing web analytics dashboards used to visualize data. The project will consider the collection, use and display of data and how these elements can be automated.

1. PROJECT DESCRIPTION

1.1. Background

In the last 15 years the use of the Internet for marketing has increased significantly because of the small amount of money needed to invest and the short time to earn money. This fact has caused the growth of business competition and as a consequence people owning websites have become more concerned about improving their site to at least match the level of their competitors. Hence, there were created methods called web analytics to analyse and report data collected from the websites visitors.

In the mid 90's people started measuring the number of visitors in their websites using web counters, very soon some companies offered statistics that not only provided information about the total number of visits but also other data from their visitors sourced from search engines. Nowadays, companies such as Google, Microsoft and Yahoo have developed sophisticated tools that generate reports allowing websites' owners to monitor their site usage [Mortensen 2008].

In order to generate the reports, those tools use information stored from the visitors through cookies or log-files. However, due to the enormous and diverse amount of data, most of the time businesses spend more time trying to understand and unify the information displayed in the reports instead of taking actions to improve their site. In addition, although the tools offer dashboards, some of them are not sufficiently clear and most of the standard tools have limitations. Therefore, users continue to look for different ways to obtain the information unified in ways that make more sense for them. The project aims to study the main metrics used by web analytics tools as well as the key concepts for creating successful dashboards to develop a system that logically presents useful information that allows web analytics users to improve their websites.

1.2. Aims, Significance and Expected Outcomes

E-marketing trends change continuously, and to maintain successful businesses on the Internet, website owners need to monitor and analyse their visitors in order to create effective marketing strategies. Businesses make use of web analytics tools to know more about their website such as, what is failing, which pages are the most visited, what are the trends, and of course what do their clients (visitors) want.

Without web analytics tools businesses cannot have real knowledge of their web traffic. In contrast, identifying what visitors are looking for when they navigate through the website and cross matching that information with the business goals makes it easy to design successful marketing strategies. Unfortunately, understanding the information provided by web analytics tools is in some cases a task that demands a lot of time due to the vast amount of data provided in the reports and dashboards designed for purposes outside of business development and processes.

The expected outcome of this project is to develop an analysis system to automate the processing of web analytics data based on recognisable patterns. To achieve this goal, three elements are required

in the process. Firstly, it is necessary to have an understanding of the main metrics used by the most common web analytics tools. Secondly, it is essential to explore the best practices, techniques and methods to design web analytics dashboards. Finally, in order to implement the system that is going to be designed, the information will be collected and processed from a third party web analytics tool.

There is a high likelihood of finding different good practices to design a dashboard depending of the objective stated and key performance indicators (KPIs) defined by each business [Vermehren 2008]. The scope of the project will limit the implementation of the analysis system based on one of the most relevant KPIs found following research and data collection.

This research and development project has real-world applications in the commercial sector. The system will have the potential to be used in a number of scenarios including online marketing, website improvement and bench marketing.

2. RESEARCH METHODOLOGY AND PLAN

2.1. Approach

The objective of this project is to develop a tool demonstrating that it is possible to design an analysis system that will help users to take decisions to improve their website usage and performance easily from a vast amount of web traffic information.

Research will be undertaken into existing web analytics dashboards used to visualize data. For the third party data collection Google Analytics will be used. Google Analytics, as an onsite reporting tool, measures a visitor's journey, website performance and visitor drivers [Clifton 2008, p4]. Google Analytics was chosen for this project because it is a free tool, used by several small businesses that do not have web analytic experts and it is also capable of providing information from other website marketing tools such as Google AdWords, Google AdSense, and Google Website Optimizer.

2.2. Task Plan

This is a research and development project. Therefore, it has a first phase associated with the research and analysis of different web analytics concepts and dashboard designs. The second phase of the project is related to the collection of data, specification, design and implementation of the software (Web Analytics Dashboard and Analysis System) to make tangible the hypothesis defined for the project. The breakdown for the task plan is shown in the APPENDIX A.

Task 1: Study of Metrics used in Web Analytics Tools

This task involves the identification, analysis and understanding of the main metrics used by different web analytics tools [Tyler & Ledford 2006, pp. 16 -22][Levene 2006, pp 176 - 192]. After this task, the metrics to be used in the analysis system should be chosen.

Task 2: Research of Processes to Design Web Analytics Dashboards

As the aim of the project is to design a tool that displays the most important web traffic information required to achieve objectives defined by a business in a single screen, or dashboard [Few 2006, p. 34], it is essential to know the best practices of web analytics dashboard design and to look for future trends.

Task3: Dashboard and Analysis System Design

After having an understanding of the main metrics provided by web analytics tools, and the knowledge and skills to create dashboards, the outcome of this task is a concrete design for the web analytics dashboard and Analysis System.

Task 4: Analysis and Identification of Data Collection Techniques

In order to test with real data, the information will be collected from Google Analytics. However, at the moment there is not an API (Application Programming Interface) for Google Analytics [Google 2009]. The objective of this task is to identify the way to extract the information from Google Analytics without using a manual process.

Task 5: Collection and Data Base Storage of Third Party Data

This task involves the development of a program to extract the information from Google Analytics and store that information in a MySQL database. Therefore, it involves definition of the database structure and security matters associated accessing the Google Analytics account.

Task 6: Development of Analysis System

The tool is expected to be developed in a web environment, hence it can be located in a host and be accessed from any place in the world with an Internet connection.

- a. Look and Feel: Graphic Design of the tool
- b. Security Issues: Connection to Google Analytics accounts, connection to local data base in MySQL, login, logout and forgotten password procedures.
- c. Data Analysis and Processing: Data processing, computing and refining of information to generate dashboard.
- d. Dashboard and Suggestion Module: Graphical implementation (e.g. Charts) and implementation of a module with suggestions for the user to improve performance based on information processed.

Task 7: User Testing

This task involves the functionality test for the application and comparison of results provided by the tool with the answers that an expert (human being) in Web Analytics would give having the same information that was collected.

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APPENDIX A (TimeLine)

