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A GRADUATE MANAGEMENT OF INFORMATION TECHNOLOGY COURSE PROJECT: WEB ANALYTICS

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It is often difficult to create thought-provoking projects that allow students the ability to apply their knowledge in a real-world setting. This is particularly challenging in a graduate level Management of Information Technology course that covers a vast array of topics throughout. In an effort to expand student knowledge of web analytics and to encourage professional development, a web analytics course project is assigned. The project presented within offers a proposed experiential learning opportunity for students enrolled in this (or similar) course. Project learning objectives and specifications are presented. Teaching Notes are also provided.

Keywords: web analytics, management of technology, graduate management of technology course

INTRODUCTION

The web analytics project presented in this paper is included as part of the requirements for a Master of Business Administration course entitled, "Management of Information Technology." Although the class covers a wide array of topics including strategic information systems planning, e-commerce, and the creation and impact of organizational information systems, the underlying focus is on the optimal deployment of information systems and information technology resources necessary to achieve an organization's strategic imperatives. Thus, the project described herein is offered as an extension of this underlying foundation. It also provides a service learning and professional development opportunity for students.

Today, organizations are very mindful of the many strategic advantages a successful web presence offers, but many are not aware of the power of analytical tools designed to help with this endeavor. As Internet use continues to grow, websites continue to be developed, and competition grows, it is important for organizations to have a better understanding of website analytics. How do users interact with the site? Where are those users coming from? What about navigational issues? Answers to questions such as these can help an organization to improve the usability of their website and increase conversion rates. Performance metrics provide necessary support and direction for improvements in website design and optimization strategies, all of which are important determinants of website success.

Importantly, web analytics is a real and emerging element of business intelligence (Chaudhuri, Daya, and Narasayya, 2011). Whether the data is used alone or coupled with other business intelligence data, these insights can lead to more informed decision making, better customer relationships, and improved strategic initiatives (Iyer and Ramer, 2011; Chin, Chiang, and Storey, 2012). Such intelligent analytics can also help organizations to establish a competitive advantage (Iyer and Ramer, 2011). In light of this, the proposed project is beneficial to both local organizations and graduate students as they work to enhance their knowledge in this area.

Various versions of this project have been offered for six semesters spanning over a five-year time period. The project has been modified over the years based on student feedback, comments from the target organizations used in past projects, and instructor experiences and reflections. The project is suitable for use in a graduate level Management of Information Technology or Management Information Systems (MIS) course. A scaled down version of this project may also be suitable for undergraduate courses in these same areas.

The web analytics project learning objectives, specifications, and description of deliverables follow. Teaching notes are available upon request.

PROJECT LEARNING OBJECTIVES

The course project is intended to be completed in groups of four, with each student contributing an equal amount to its completion. The learning objectives for the project are presented below:

1) To provide each student with an opportunity to develop and improve their problem- solving, analytical, and creative abilities.

2) To gain insight about the use of information technology (IT) for strategic decision-making purposes.

3) To deepen knowledge and understanding of the importance of web-based design practices and web analytics as part of the overall strategy of the firm.

PROJECT DESCRIPTION

Students are required to employ Google Analytics to an organization's (nonprofit, for-profit, or governmental) website in order to evaluate and assess the effectiveness and impact of an online presence on the target business. Google Analytics is freely available. In order to allow Google Analytics to work with a website, it is necessary for a particular SCRIPT code (available from Google Analytics) to have been inserted within the organization's webpage. Ideally, Google Analytics Script Code should have been embedded within the site of the target organization for at least one year, as this will allow students to identify trends in the data.

Avinash Kaushik defines web analytics as: *The analysis of qualitative and quantitative data from your website and the competition, to drive a continual improvement of the online experience that your customers, and potential customers have, which translates into your desired outcomes (online and offline) (Cutroni, 2010, page. 5).*

As the definition suggests, all of the data, measurement, and analysis must drive a process of continuous improvement (Cutroni, 2010). Your group must make recommendations on how to take action on the data that is revealed through the analysis. As part of this process, students are required to perform segmentation analysis. Segmentation (e.g. viewing website traffic based on the physical location of the visitors) allows you to delve deeper into the data to understand how specific segments of traffic influence the overall performance of the website (Kaushik, 2010). The use of advanced segmentation involving other relevant variables may provide additional, and more sophisticated, insights as well. Students may also use the Google Analytics social tracking feature and/or other features that will aid in their overall analysis.

PROJECT SPECIFICATIONS

1) Select a target organization (for-profit, nonprofit, or governmental). Ideally, Google Analytics Script Code should have been embedded within the site of the target organization for at least one year, with rare exceptions granted.

2) Obtain permission and necessary instructions from the target organization to access Google Analytics Data.

3) Prepare a project proposal that consists of the following: name of target organization, brief background of target organization, outline of tasks to be performed to ensure timely completion of project. This plan/outline should be developed using project planning software such as Microsoft Project or OpenProj.

3) Set up initial interview with key representatives from the target organization. Students need to focus on understanding the mission and strategic imperatives of the target organization first. Students then need to learn the goals of the website (e.g. to provide visitors with information, to seek donations, to sell products or services, etc.). This information must be obtained prior to beginning the analysis.

4) Provide a broad overview of the most pertinent analytics data. At a minimum, you are required to assess the following within the analytics software: unique visitors, new visitors, returning visitors, page views, page views per visitor, geographic location of visitors , bounce rate, referring pages/sites, visitor language, browser type, visit duration, visitor paths, conversion rates (if appropriate goals have been set within the analytics software).

5) Reviewing raw data is only part of this analytical process, as it is necessary to delve deeper to truly understand user behavior and interactions. As such, look beyond the data presented in the analytics software by surveying users and/or potential users of the website in an effort to gain a deeper understanding of the data. Some qualitative data should be obtained through the use of these surveys, as this is often very helpful in the overall analysis of the website.

6) After a careful review and analysis of the data, come up with a list of 5-7 actionable recommendations to improve the website. These recommendations should be supported by the underlying data and academic and/or professional literature on website design and usability. By providing actionable recommendations, the target organization has the information necessary to move forward with implementing the suggestions with minimal effort.

PROJECT DELIVERABLES

Each team must:

(1) Prepare a report that clearly and concisely details the project, results, and actionable recommendations. The inclusion of charts, graphs, interview transcripts, references, survey questions, and survey results is highly encouraged.

(2) Prepare a 15 minute PowerPoint or Prezi presentation that reflects the essence of the project. Students may wish to consider the use of embedded videos within. The presentation should summarize the evaluation and assessment of the target business/organizational website. Please also include some discussion of the actionable recommendations. All of the members of the group should participate in the development of the presentation in some way.

(3) Complete peer evaluations. Students are required to evaluate each of their team members on the following criteria: completion of assigned tasks; contribution of useful ideas; quality/accuracy of work, quantity of work; timeliness of work completion; attendance of group meetings; participation in group meetings; reliability; quality of interactions/support/communications with other team members.

TEACHING NOTES

As mentioned in the manuscript this project is offered as an extension to the material that is presented in the class. As such, I educate students on the basics of web analytics in several different ways (e.g. guest speakers that actively engage in web analytics and truly understand the importance of this data in strategic decision making, educational videos on the art of web analytics, mini-lectures on various elements of analytics) in order to prepare them to begin work on this project. A few links to sample videos that have been either shown in class and/or posted to the electronic learning platform specific to the course follow:

http://www.youtube.com/watch?v=trfp2XdpgXI;
https://www.youtube.com/watch?v=Jx8OChGCtIY&feature=relmfu

YouTube videos featuring the Analytics Academy are also very helpful in helping students to learn more:

https://www.youtube.com/playlist?list=PLpFemNRJ7CfiIOMvA07VGX_urp3YT07D7)

TEACHING NOTES FOR PROJECT SPECIFICATIONS:

1) Project specification: Select a target organization (for-profit, nonprofit, or governmental). Ideally, Google Analytics Script Code should have been embedded within the site of the target organization for at least one year.

> ***Teaching Note:*** *In most circumstances, students will select their own target organization. In some cases, however, organizations will contact the professor and ask to be included. In this case, the professor will assign a particular organization to a group or simply randomly select a group if more than one group is interested in preparing a report for that organization.*

2) Obtain permission and necessary instructions from the target organization to access Google Analytics Data.

> ***Teaching Note:*** *The target organization will provide students with the necessary login information to access their data.*

3) Prepare a project proposal that consists of the following: name of target organization, brief background of target organization, outline of tasks to be performed to ensure timely completion of project. This plan/outline should be developed using project planning software such as Microsoft Project or OpenProj.

> ***Teaching Note:*** *This project proposal should be brief, but informative. Students need to show an understanding of project planning. Students taking the class have been exposed to basic project management skills and planning processes. In light of this, the professor does not spend any class time explaining how to use project management software. Students not able to prepare a basic timeline and outline of tasks using this software are directed to relevant online educational resources (see https://www.youtube.com/watch?v=sPwURRG9_Gs, for example). Students may include the following in their outline of tasks: date they expect to gain access to analytics data; date(s) they plan to work on preparing interview questions for representatives from the target organization; date of interview; date they plan to take an initial in-depth look at analytics data; date they will prepare usability survey that will be administered by way of an online survey instrument*, date that progress report is due; date(s) they will work on analysis of survey results; date(s) they will take a final look at analytics data: date they will being to prepare final report.*

* Students will either ask their classmates or various other potential users of the website to complete the survey.

4) Set up initial interview with key representatives from the target organization. Students need to focus on understanding the mission and strategic imperatives of the target organization first. Students then need to learn the goals of the website (e.g. to provide visitors with information, to seek donations, to sell products or services, etc.). This information must be obtained prior to beginning the analysis.

Teaching Note: *Although survey questions will vary depending on the target organization, some (general) sample interview questions follow:*

- *What is the mission of your organization?*
- *What are the long-term/short-term goals of the organization?*
- *How long have you had a web presence?*
- *What are the goals of your website?*
- *Do you have a social media presence?*
- *If so, do you attempt to drive traffic to your website from these social sites?*

5) Provide an overview of the most pertinent analytics data. At a minimum, you are required to assess the following within the analytics software: unique visitors, new visitors, returning visitors, page views, page views per visitor, geographic location of visitors , bounce rate, referring pages/sites, visitor language, browser type, visit duration, visitor paths, conversion rates (if appropriate goals have been set within the analytics software).

Teaching Note: *As part of the report, students should include snapshots of various analytics data, with an explanation that follows. Please see the teaching note associated with step 6 for more information on what this explanation should include.*

6) Reviewing raw data is only part of this analytical process, as it is necessary to delve deeper to truly understand user behavior and interactions. As such, look beyond the data presented in the analytics software by surveying users and/or potential users of the website in an effort to gain a deeper understanding of the data. Some qualitative data should be obtained through the use of these surveys, as this is often very helpful in the overall analysis of the website.

Teaching Note: *Students should prepare this usability survey using an online survey instrument such as the free version of SurveyMonkey or Google Forms. Although survey questions will differ based on the target organization, students generally pose questions about the following: overall impression, ease of use/navigation, visual appeal, organization of information, clarity of information.*

Open-ended questions often lead to very useful suggestions for website improvements. Some examples of open-ended questions that may be posed follow:

- What did you like most about this website? Please explain.

- What did you like least about this website? Please explain.
- What changes or additional features would you suggest for this website?

*Students use Likert scales for the more objective questions. Survey questions and results should be included in the final report.

Importantly, survey results/findings are often used to explain the analytics data. For example, if bounce rates are high on the home page, then students will look at the survey results to help determine why. They may also search the web or academic literature to determine 'reasons for high bounce rates.' A combination of the survey results and research findings should be used in the discussion related to all figures, as this helps the target organization to gain a deeper understanding and appreciation of the analytics data. Students are expected to use within text references and prepare a full reference listing at the end of the report.

7) After a careful review and analysis of the data, come up with a list of 5-7 actionable recommendations to improve the website. These recommendations should be supported by the underlying data and academic and/or professional literature on website design and usability. By providing actionable recommendations, the target organization has the information necessary to move forward with implementing the suggestions with minimal effort.

Teaching Notes: Although actionable recommendations vary according to the outcomes of the analysis and the goals of the target organization's website, there are several (more general) recommendations that tend to surface in many of the reports. These are as follows:

- Increase stickiness of the site
- Use Multivariate testing (A/B testing) to determine best layout/design of site
- Set goals in Google Analytics
- Change in color schemes or layout
- Reach out to potential referring sites to increase website visits
- Make the website mobile-friendly

Clearly, some recommendations are specific to the reason for the site's existence (e.g., provide visitors with information, seek donations, sell products or services, etc.). For example, sites that exist to seek donations from visitors should make certain the donate tab is front and center on each and every page of their site.

Students are expected to provide an in depth description of how the company can put these recommendations into action. Again, students are also required to provide the necessary support (e.g., survey data; academic or professional references) for these actionable recommendations.

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