**DEVELEOPMENT OF A VISUALIZATION FOR TRACKING WEB TRAFFIC IN CONNECT AMERICAS.**

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*Abstract: As social networks keep growing at such fast rate, the traffic of data that they have become more valuable every day. Connect Americas is a company who connect companies around Latin-American and the Caribbean, and has a very powerful database who needs to be unified and easier to understand. In this project we try to exploit this dataset to increase the knowledge of how the users behave and what they are interested so that Connect Americas can improve their experiences.*

**STATE OF THE ART**

**Applications of Data Mining Techniques to Identify Relevant Key Performance Indicators.** Jesus Peral, Alejandro Maté, Manuel Marco. (2014):

Nowadays the most common tool to monitor business performance are Dashboards. This include visualizations of many techniques, where we can find Key Performance Indicators (KPI), which are very important information in order to compare the current performance of many businesses, but there are many problems defining which KPI’s are relevant. In this paper they explain different techniques using Data Mining to obtain specific KPI’s for semi-automated objectives in a business, this approach is better because doesn’t use existing KPI or test them over cycle and rather use existing data.

**Visualizing Key Performance Indicators Using GKPI Procedure.** Brian Varney (2010):

This paper presents the new GKPI procedure, which can be used to create graphical key performance indicators charts including new marks and channels which can help identify these indicators. This paper is an introduction to the integration of the GKPI procedure to the SAS environments.

**Key Performance Indicators: Developing, Implementing and Using Winning KPI’s.** David Parmenter (2007).

In this book the goal intended is to help minimize the risks that working with a KPI and balanced scorecard projects have. It is designed for the project team, senior management, external advisors and team coordinators whose role is to succeed with this projects. In this book it will be explain the most efficient ways to obtain KPI’s according to the needs of the projects and how to implement them in order to achieve the success that could have a legacy inside an organization.

**Visualizing Web Navigation Data with Polygon Graphs.** Jiyang Chen, Tong Zheng, William Thorne, Daniel Huntley, Osmar Zaïane and Randy Goebel.

Data Visualization is connected with the world of machine learning in order draw the inferences from large datasets located in WWW. In this paper they describe the process of creation of a WebViz system, that allows to use visualizations in order to have better navigations using data mining techniques. They created a Polygon Graph which is a tool who helps to discover knowledge patterns of implicit relations among different data variables.

**CZWeb: Fish Eye Views for Vizualizing the World Wide Web.** Brian Fisher, Makrina Agelidis, John Dill, Paul Tan, Gerald Collaud, Chris Jones.

With the growth of the interconnected information in the web, is necessary to find new forms to organize these connections, that’s why it is implemented CZWEb a system that traces the user’s web paths of the using a Fish Eyes technique. A technique that allows the user to zoom different parts of the map that the user is creating in order to see in more detail the path of navigation. To create this maps the system include clustering techniques and creates a network that interconnect nodes.

**Evaluating Social Navigation Visualization in Online Geographic Maps.** Yuet Ling Wong, Jieqiong Zhao, Niklas Elmqvist.

“Social navigation enables emergent collaboration between independent collaborators by exposing the behavior of each individual. This is a powerful idea for web-based visualization, where the work of one user can inform other users interacting with the same visualization. We present results from a crowdsourced user study evaluating the value of such social navigation cues for a geographic map service. Our results show significantly improved performance for participants who interacted with the map when the visual footprints of previous users were visible.”

**Model Based Clustering and Visualization of Navigation Patterns on a Website.** Igor Cadez, David Heckerman, Christopher Meek, Padhraic Smyth, Steven White.

They present a new methodology for exploring and analyze the navigation patterns on a web site. They analyze the patterns of sequences of URL categories that the users explore, where they placed similar paths into a same cluster and then they present the users that are inside that cluster. The cluster approach is a model-based and portions the users in the way the requested the URL, with this cluster technique they arrange to explore thousands of items and they visualize in a system that they called WEBCanvas.

**Visualizing and Discovering Web Navigational Patterns.** Jiyang Chen, Lisheng Sun, Osmar Zaïane and Randy Goebel.

“Web site structures are complex to analyze. Cross-referencing the web structure with navigational behaviour adds to the complexity of the analysis. However, this convoluted analysis is necessary to discover useful patterns and understand the navigational behaviour of web site visitors, whether to improve web site structures, provide intelligent on-line tools or offer support to human decision makers. Moreover, interactive investigation of web access logs is often desired since it allows ad hoc discovery and examination of patterns not a priori known. Various visualization tools have been provided for this task but they often lack the functionality to conveniently generate new patterns. In this paper we propose a visualization tool to visualize web graphs, representations of web structure overlaid with information and pattern tiers. We also propose a web graph algebra to manipulate and combine web graphs and their layers in order to discover new patterns in an ad hoc manner.”

**WebOFDAV – Navigating and Visualizing the Web Online with Animated Context Swapping.** Mao Lin Huang, Peter Eades, Robert F. Cohen

“This paper presents a novel navigation approach that helps the user, not only by providing a visual aid to guide the Web journey, but also by preserving the user's mental map of the view while the user interactively navigates the Web by swapping of views. This approach does not predefine the geometry of whole visualization at once; instead it incrementally calculates and maintains a small local visualization on-line corresponding to the change of the user's focus. This feature enables the user to explore the Webspace without requiring the whole Web graph to be known.”

**Interactive Visualization.** Bill Ferster.

This book present different techniques to create interactive visualizations that can solve questions and create knowledge about the dataset presented. In this book the author shows the importance of knowing what is the type of data that it will be used and how to approach the best solution for the problems that this data present.