

Hotels Online Opinion Visualization

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ABSTRACT

Nowadays there are several websites where a traveller can find information about hotels. These websites give an idea about the quality of the hotel in several aspects based on customer opinion. Although helpful, these websites do not offer visualizations in order to actually give a clear insight on available data. It does not really support travellers' decision because the information is generally showed as a text list, with or without some monochromatic symbol, not allowing any kind of interaction or taking into account relevant cognitive aspects. This article proposes a new visual interface for the booking and hotel sector, considering the customers' online opinion as its main input data.

KEYWORDS

Information Visualization, Online Reviews, Sentiment Visualization, Web 2.0

1. INTRODUCTION

One of the most obvious benefits of visualization is helping people see trends and anomalies in data, which can be particularly valuable in real-time environments. Visual techniques such as heat maps and tree maps, which help reveal patterns in homogenous data, were virtually unknown 10 years ago, but are used today in many places ranging from public Web sites to advanced trading applications.

Online reviews, e.g. review about a product or a service, are pervasive on the web and the richness of such data have attracted attention from millions of people around the world. For example, TripAdvisor alone receives more than 60 million unique visitors per month, and over 75 million reviews and opinions (TripAdvisor, 2012) - and the pace is speeding up. Moreover, online reviews are available in a range of domains such as restaurants (e.g. zagat.com and opentable.com), wines (e.g. adegga.com) and cruisers (e.g. cruisecritic.com) which needs to be better explored, mainly in the visualization aspect.

Some of the open questions are: How to visually represent online reviews to support better decision making? Which are the more adequate/suitable information visualization techniques to represent the knowledge in online reviews? What kinds of graphics should be used to represent the knowledge (integrated information) in online reviews? Are both, textual and graphical visualizations useful for customers and business managers?

Standard websites on traveller's hotels opinion present information in text format, monochromatic symbols, without any kind of interaction or taking into account relevant cognitive factors. There are several good examples, such as TripAdvisor, Momondo, Booking or LogiTravel. Figure 1 illustrates one of the typical visualization offered by these websites.

The goal of this work is to have a better knowledge of the multilingual online business reviewers' visual and cognitive model. To achieve this, a visual model based on the evaluation of the sentiment

Figure 1. Logitravel website



expressed with the online opinion is proposed and a prototype implemented, in order to test it. The domain of the reviews is the hotel sector.

Two specific end-users are targeted: tourists looking for the best hotels and managers of these hotels looking to improve their business. The proposed model aims to answer these questions: how to visually represent online reviews to support better decision making, what are the most appropriate information visualization techniques to consider and what kind of charts should be used or different visual techniques should be used according end-user profile.

This paper is organized in six sections. Section two introduces a brief state-of-the-art of the online review field, focusing mostly on the visualization of the sentiment in an opinion. Section three presents the requirements while section four the features and visualization techniques considered for the prototype. Section five describes the prototype itself and the tests that were performed in order to evaluate the proposed visualization model. Finally, section six discuss the main conclusions and future work.

2. BACKGROUND

After the emergence of the Web 2.0, most of the websites began to have the basic requirement for closer proximity to the end-user. Storing and viewing user comments are a current practice. With the proliferation of online business, managers have become increasingly interested in specific aspects of their business, such as attitudes, recommendations or complaints expressed by their clients. A common example is given by tourists who analyse opinions and experiences published by other travellers on different WWW platforms when planning their own holidays. The exponential use

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