Discovering insights within a Blue Ocean based on Business Intelligence

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Abstract

At this moment we are seeing a confluence of practices and technologies into smarter computing capabilities that enable organizations to accomplish intelligent actions to address time-sensitive business processes and benefit from analytics. Business Intelligence processes within companies allow obtaining blue oceans where a strong growth and high business benefits are pursued through the creation of a new demand in an unknown strategic space, instead of facing competitors pursued to achieve customers in an already developed activity. This article describes a case study where the behavior of virtual visitors from the BRIC (Brazil, China, India and Russia) market into one of the most important country websites focusing its activity on tourism. Through the study of web analytics on the website, it will be showcased different interests identified via digital footprint left by the virtual visitors and depending on their country of origin. This fact will allow harmonizing the content and supply of tourism resources of the web site with regard to virtual visitors from these markets. Ultimately, it will allow to direct actions of specific e-marketing to the BRIC market.

Keywords: e-marketing, business intelligence, Blue Ocean, digital footprint

1. Introduction

The increasing economic importance of the tourism sector together with the growing number of tourism destinations prompts vast competitiveness among territories. According to Buhalis, Morgan, Pritchard, and Piggott,
tourism has reached the maturity stage, facing fierce rivalry among destinations (Buhalis, 2000; Morgan, Pritchard, & Piggott, 2002). These authors agree on that a large number of tourists (70%) visit the top major destinations, and that only the remaining 30% of the tourists visit the rest, implying an even stronger competition between them.

Thus, the analysis of official statistics may derive on vantage knowledge when it is about finding new markets to which no web-based tourism campaign has been clearly defined by the country issuing the offer. Within the last decade, the four emerging countries -Brazil, China, India and Russia-, named BRIC markets, have consolidated their economies, and consequently, they are experiencing a steady growth. (UNWTO, 2013).

In the case of Spain, these emerging countries are also consolidating their importance in terms of arrivals and tourism expenditure. BRIC markets represented 1.8 million arrivals (3% of the total tourism arrivals) in 2012, with an average variation rate of 34% compared to the previous year. Especially Russia experienced an exponential growth, exceeding the million tourists (IET, 2012). On the same subject, the positive development of BRIC’s tourism expenditure in Spain shows an annual variation higher than the total average variation rate of outbound countries (42% facing 5%).

All these figures reveal that BRIC countries can be an interesting market to perform custom-made e-marketing in order to satisfy niche preferences within the Spanish tourism industry. The achievement of this process leads to consider the BRIC markets as a vast blue ocean.

Blue Ocean strategy was defined by Kim and Mauborgne as the “uncontested market spaces where the competition is irrelevant” (Kim & Mauborgne, 2007: 124). The consequence of a blue ocean strategy involves the generation of strong growth and high profits to the company by finding new market positions where there are neither direct competitors nor accredited competition rules.

In order to adequately the online tourism marketing strategy to these blue oceans, different tools may be considered. This study focuses on smart computing capabilities that allow getting customer feedback on how website users: think, feel and act through Business Intelligence technologies.

Business Intelligence based on Internet is one of the most robust trends that triggers the awakening of a growing interest in the field of strategic management and eScience (Teo & Choo, 2001; A. S. A. Du Toit, 2003). Accordingly, it facilitates an additional source of information, it provides the opportunity to anticipate and estimate consumer habits on a changing environment (Shih, Liu, & Hsu, 2010; Alzua-Sorzabal, Gerrikagoitia, & Torres-Manzanera, 2013) and a cost-effective means of disseminating information to decision-makers (Teo & Choo, 2001). In this sense, a successful tourism destination website may derive on competitive advantage for the destination by improving its market segments attraction. (Wang & Fesenmaier, 2006).

In short, business intelligence becomes “the engine room of interactive marketing” (Stone & Woodcock, 2014: 9), by which a spread raw data is turned into useful business information which can be used to generate promotional material focused on determined markets. In this study, Web Analytics tools are used for the acquisition of valuable data about the user behaviour based on the destination web. This will later allow analysing website user’s digital footprint on real time (Alzua, Gerrikagoitia, & Rebón, 2013).

In this context, an important Destination Web will be analysed regarding its constitution and structure. Afterwards, the system which facilities the capture of valuable data and the change in enriched information based on BRIC market will be explained. Both points will be further detailed in the methodology section. It then focuses on the results and discussion section which will include an analysis of this enriched information, and where some insights within these markets will be given. Finally, the last section will deal with the conclusions and future works.

2. Methodology

Firstly, the destination web is contextualized, and the most representative sections used in the experiment are discussed. Then, the architecture of the system which will allow analyse the obtained digital footprint is explained. And finally, the variables which are part of the analysis are presented.
2.1. Context and composition of destination web

In order to evaluate the digital footprint use for e-marketing website development, the monitoring was applied to a Web based on a Destination Management System (DMS) in Spain. This website aims at promoting the country’s tourism brand in diverse markets. Taking into consideration that Spain is the fourth biggest country in terms of tourism arrivals worldwide, its website may be considered an important driver for tourism visitors within the country. In this sense, the adjustment of the site to the potential BRIC markets preferences may generate greater value for these origins to visit the destination, persuading them through a tailored communication.

Within this context, a description of the website composition is provided for the subsequent footprint analysis. The studied website is designed for many for different audiences, as the language selection shows the site is focused on many web cultures. The site susceptible of study is currently available in 16 languages.

The site’s content organization is regular; it is possible to find one page for each section, one page for each destination resource, etc. In the same vein, pages contain links to go from one to another providing an easy navigation process. Every page contains a collection of well-organized links in the top of the page.

The website organizes the main information by means of pull-down tabs, for whom the structure is shaped by four key sections: “What are you looking for”, “Where to go”, “Spain for...” and “Practical information”. These sections at the same time include/contain numerous subsections and the information is expanded by clicking on each tab.

The online channel is properly designed, it integrates 2.0 elements with a bidirectional communication, where the user is a receptor but may become an emitter by means of the section “Share your experience” present in the headline. The Web content includes more advanced capabilities such as commercial information about the prices and offers. It even integrates a booking service that redirects the customers to different booking sites using a reservation system.

Google Analytics is used as a tool for the capture of the digital footprint aiming to analyse the navigation behaviour of the virtual visitor. These data will be imported to the Destination Web Monitor (DWM).

2.2. Definition and architecture of DWM

DWM is defined as “a system to measure, analyse, and model the behaviour of visitors in different virtual areas where a destination is promoted and with the objective of providing benchmarking ratios that facilitate strategic surveillance and intelligent marketing policies” (Alzua-Sorzabal, Gerrikagoitia, & Rebón, 2014: 64).

According to these authors, the design of the DWM satisfies the five levels of the Web Analytics Maturity Model (WAMM) (Gassman, 2008); a set of best practices that covers the entire lifecycle of a product or service from conception to delivery and maintenance.

The mechanics are simple, the user accesses the website with any available device (PC, smartphone, tablet, etc.) and the monitor starts capturing the interaction between the user and the website.

The gathered data is treated in external servers through a JavaScript routine that is incorporated on each destination website in order to record all the actions made by the user on real time. This technical solution facilitates that solution makes it easier, when the access is not straight to the website, the DWM can capture information before the user enters the destination website by recording the search engine and the word that has been searched and leaded to the destination web. The following step is to analyse and evaluate the netted information in order to get insights based on user profile. When these data are transformed in valuable information, it can be monitored. These stages are based on internal process of DWM and are represented in Fig. 1.
Starting from the raw data, the process filters the data by removing all the erroneous requests, meaning that all the observations pertaining to websites that were not chosen for the study are excluded; all the records whose IPs have a total connection time equal to zero are deleted; and those visits that pass through all possible navigation paths having high connection times are discarded, considering that this is the usual behaviour of a Web-robot (Tan & Kumar, 2004). The lean-up step can supply the raw information or can apply Web Mining techniques that empower the compression of the information.

Currently three approaches can be recognized into Web Mining: Web Usage Mining, Web Content Mining, and Web Structure Mining.

Web Usage Mining techniques are based on the process of discovering patterns of usage on web data (Srivastava, Cooley, Deshpande, & Tan, 2000; Iváncsy & Vajk, 2006; Arbelaitz et al., 2013). Web Content Mining techniques define processes that try to discover useful information from the content of web pages (T. Srivastava, Desikan, & Kumar, 2005). This set of techniques is also called Web Text Mining because the main areas of research are carried out on the items of the text: being Natural Language Processing (NLP) (Chowdhury, 2003; Burke et al., 1997) and Information Retrieval (IR) (Salton & McGill, 1983) the most common technique.

Web Structure Mining techniques are focused on inferring knowledge from websites analysing the hosted “links”. In this context, we remark the work carried out by Pizziano (Piazzì, Baggio, Neidhardt, & Werthner, 2011) and Rodríguez (Rodríguez & Fernández, 2009). All these technical solutions empower the data and make easier the growth of the knowledge. Ultimately, this result might be displayed on a scoreboard constituted by reports.

2.3. Description of variables

In order to be able to recognize the insights of the virtual visitors belonging to BRIC markets, it is necessary to crossbreed, as a first approach, the following variables: the content and the percentage of page views by country. It is possible to get a deeper insight of the analysis, depending on the granularity of the content item.

In this experiment the sections of the following contents have been analysed: “What are you looking for”, “Where to go”, “Spain for...” and “Practical information”. “What are you looking for” has been disaggregated in the key themes: agenda, learning, art, cities, shopping, sport, gastronomy, inland tourism, nature, nightlife, beaches, routes, health and themed tourism; and “Practical information” in the following key themes: access, accommodation, advices, embassies, Spain, offices and transport.

3. Results and discussion

This section illustrates the results of the data obtained by means of digital footprint and have been transformed into useful information by DWM. The study has been carried out from October 2013 to March 2014. The first table shows the sections within the destination website that were able to reach the highest number for each of the countries belonging to the BRIC markets (See Table 1). In this table, section “What are you looking for” is taken into consideration as it is the most demanded one by virtual visitors of the website.
Table 1. BRIC countries interests on key sections according to DWM.

| Practical information | Spain for... | What are you looking for | Where to go |
|-----------------------|--------------|--------------------------|-------------|
| Brazil                | 32,359       | 2,628                    | 122,071     | 7,288       |
| China                 | 3,514        | 643                      | 19,823      | 602         |
| India                 | 11,287       | 1,887                    | 25,893      | 5,419       |
| Russia                | 12,126       | 1,483                    | 33,632      | 2,965       |

Analysing the “What are you looking for” section, it was discovered that the “Cities” section was the most important one (See Table 2).

Table 2. BRIC countries interests on “What are you looking for” section according to DWM.

| Agenda                  | Art     | Beaches | Cities | Gastronomy | Health | Inland tourism | Learning | Nature | Night | Routes | Shopping | Sport | Themed tourism |
|-------------------------|---------|---------|--------|------------|--------|----------------|----------|--------|-------|--------|----------|-------|----------------|
| Brazil                  | 19,740  | 23,505  | 7,250  | 42,909     | 11,357 | 352            | 1,410    | 618    | 2,933 | 1,105  | 4,337    | 1,174 | 5,556          | 1,848   |
| China                   | 2,238   | 4,385   | 1,458  | 7,824      | 1,014  | 337            | 143      | 520    | 155   | 1,399  | 407      | 399   | 396           |
| India                   | 3,285   | 2,926   | 1,396  | 11,546     | 1,765  | 105            | 438      | 205    | 1,075 | 907    | 1,068    | 736   | 810           | 943     |
| Russia                  | 5,564   | 5,126   | 2,551  | 12,194     | 1,940  | 1,818          | 591      | 328    | 1,405 | 496    | 2,734    | 476   | 953           | 656     |

After the analysis of Table 1, it was found that the second more important section on the number of visits received from the BRIC markets was "Practical Information". A closer scrutiny of the different sections, displays that Brazilians, Indians and Russians focus their attention on “Advise”; by contrast, Chinese lean towards “Spain” as the key section (See Table 3).

Table 3. BRIC countries interests on “Practical information” section according to DWM.

| Access | Accommodation | Advices | Embassies | Offices | Spain | Transport |
|--------|---------------|---------|-----------|---------|-------|-----------|
| Brazil | 533           | 1,890   | 2,409     | 2,409   | 6,726 | 6,221     |
| China  | 54            | 486     | 1,482     | 703     | 703   | 1,863     | 496     |
| India  | 266           | 3,882   | 4,173     | 1,329   | 1,329 | 3,584     | 821     |
| Russia | 386           | 1,403   | 5,817     | 1,975   | 1,975 | 3,463     | 1,677   |

These tabulated data represents the absolute value of the visits. By doing so, the discovery of the main interests of the virtual visitors from the BRIC markets is facilitated. Furthermore, with a deeper reading of the data, the representation of the interest showed for each concept regarding a specific country of the BRIC markets can be extracted.

The main interest for the Russian market is mainly expressed in the section “Spain for...”. However, Chinese and Brazilian citizens are keener on the content showed on the “What are you looking for” section. Finally, Indians present higher interest on the “Where to go” tab (Fig. 2).
By implementing a more exhaustive analysis within the “What are you looking for” section, it can be stated that Brazilians lean towards the sports topic subsection, Chinese are more interested on routes, Indians show attention for nightlife events, and Russians prefer information about health issues when visiting the website (Fig. 3).

Regarding the “Practical information” section, it can be stated that Brazilians take an interest in the country’s means of transportation; Chinese rather focus their attention on general aspects about Spain; while Indians highly focus on the available types of accommodation, and Russians mostly visit the tourism information for accessibility of people with reduced mobility (Error! Reference source not found.).
Once the preliminary DWM data has been analysed, results must be studied more exhaustively. As the analysis period was pretty short, it can be inferred that the interests obtained here, may be related to seasonality. Therefore, a new analysis is proposed here regarding the same data but dividing the semester in two quarters: from October to December 2013, and from January to March 2014.

According to the obtained results, it can be considered that there is a steady pattern regarding interests amongst Brazilian citizens, not experiencing any variation from quarter to quarter. The interests shown by the Russian citizens and the Indian citizens did also remain constant in the two quarters considered.

It is believed that a data interpretation comprising a larger time-space should be implemented in order to analyse the rest of the items, as there is no significant variation between the whole semester and the data extracted from any of the two quarters individually.

Regarding the “What are you looking for” section, Chinese market shows a higher interest on beaches and coastal destinations during the first quarter (October-December 2013). However, during the second quarter (January-March 2014) they focus on all sections related to shopping. Considering the complete semester, the interest of Chinese is focused on “Routes”. Such heterogeneous results make believe that further studies within a greater period of time will be necessary to discern any temporary trend or pattern on data.

Once the previously mentioned analysis of the results has been contemplated, new marketing and communication campaigns can be proposed for those segments who have revealed clear interest patterns. These campaigns may be developed in both, the destination website and other communication media.

Some examples for communication actions that could be deployed are the following: a) website campaigns on virtual visitors, meaning that if the web confirms that the visitor’s IP belongs to a Brazilian, the key section that will be shown when entering the site could be the content of “What are you looking for” part; followed by the content relating to sports and means of transport. If the detected IP is from Russia instead, the main information presented should be about health; for Indians, accommodation should be the initial section, and so on; b) Following the previous premises, prioritising this information is also possible in the Visitor Information Centres if they want/need to focus on these markets; c) The different marketing departments have a primarily starting point in order to create new tourism products that would be of interest for these markets and within it, they will be able to construct innovative actions covering a Blue Ocean.

4. Conclusions and future work

In this piece of the work, by means of the digital footprint, a reliable manner to find patterns of interest based on the behaviour of virtual visitors located in Brazil, India and Russia has been established. Also, it has been shown the need of extending the study of virtual Chinese visitors of the website to draw any conclusions with respect to their
interests as the manifestation of their different interests, as likely a significant correlation with the time when the virtual visit happened.

Additionally, all the countries have shown great interest in the "What are you looking for" section, followed by the section "Practical information". Under the heading "What are you looking for" every country is interested in a different theme. It can be stated that Brazilians lean towards the sports topic subsection, Chinese are more interested on routes; Indians nominate attention for nightlife events, while Russians prefer information about health issues when visiting the website. Finally, in "Practical information" section, it can be stated that Brazilians take an interest in the country’s means of transportation; Chinese rather focus their consideration on general aspects about Spain; while Indians are highly motivated with the available types of accommodation, and Russians mostly visit the tourism information for accessibility of people with reduced mobility.

After gathering all the data from BRIC countries’ behaviour on the destination website, it can be stated that particular communication campaigns to market this virtual users can be designed as they truly represent an opportunity for the country, that can be identified as a Blue Ocean. In this context, reinforcing the tourism positioning of Spain as a tourism destination within the BRIC markets might be profitable as a way to benefit from their expected growth.

In a nutshell, from a more general point of view, Web Analytics allow companies to acquire Business Intelligence in order to get insights about the user’s behaviour and thus permitting objective decision making. In this context, interactive marketing is closely related to Business Intelligence processes; data obtained from the DWM may be converted into useful information for the creation of custom-made experiences into the destination Web site.

Moreover, the DWM allows the following utilities: a) knowing the customer segments; b) defining specific products; c) increasing the number of followers (information adapted to the visitor profile by discovering the indexed or direct traffic); d) creating new brand communication campaigns (when to place the messages).

Future research can work on the virtual behaviour into the website through BI within a larger period of time that may lead to further conclusions about the BRIC markets. In addition to this, it is possible to adjust the tourism destination offer with a more detailed segmentation for each of the core segments, offering a distinct value proposition to every different market considering their virtual behaviour.

It should not be forgotten that the study could be completed carrying out a verification analysis of the impact the communication campaigns are having by applying the information obtained from them.

**Acknowledgements**

The authors would like to thank the managers of TOURSPAIN for their excellent cooperation and provide support to this study.

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