Chapter 83
SLOD–BI:
An Open Data Infrastructure for Enabling Social Business Intelligence

Rafael Berlanga
Universitat Jaume I, Spain

María José Aramburu
Universitat Jaume I, Spain

Lisette García-Moya
Universitat Jaume I, Spain

Ismael Sanz
Universitat Jaume I, Spain

Victoria Nebot
Universitat Jaume I, Spain

Dolores María Llidó
Universitat Jaume I, Spain

ABSTRACT

The tremendous popularity of web-based social media is attracting the attention of the industry to take profit from the massive availability of sentiment data, which is considered of a high value for Business Intelligence (BI). So far, BI has been mainly concerned with corporate data with little or null attention to the external world. However, for BI analysts, taking into account the Voice of the Customer (VoC) and the Voice of the Market (VoM) is crucial to put in context the results of their analyses. Recent advances in Sentiment Analysis have made possible to effectively extract and summarize sentiment data from these massive social media. As a consequence, VoC and VoM can be now listened from web-based social media (e.g., blogs, reviews forums, social networks, and so on). However, new challenges arise when attempting to integrate traditional corporate data and external sentiment data. This paper deals with these issues and proposes a novel semantic data infrastructure for BI aimed at providing new opportunities for integrating traditional and social BI. This infrastructure follows the principles of the Linked Open Data initiative.

1. INTRODUCTION

The massive adoption of web-based social media for the daily activity of e-commerce users, from customers to marketing departments, is attracting more and more the attention of Business Intelligence (BI) companies. So far BI has been confined to corporate data, with little attention to external data. Capturing external data for contextualizing data analysis operations is a time-consuming and complex task that, however, would bring large benefits to current BI environments (Pérez et al., 2008a). The main external contexts for e-commerce applications are the Voice of the Customer (VoC) and the Voice of the Market (VoM) forums. The former regards the customer opinions about the products and services offered by a company, and the latter comprises all the information related to the target market that can affect the company business. Listening to the VoM allows setting the strategic direction of a business based on in depth consumer insights, whereas listening to the VoC helps to identify better ways of targeting and retaining customers. As pointed out by Reidenbach (2009), both perspectives are important to build long-term competitive advantage.

The traditional scenario for performing BI tasks has dramatically changed with the consolidation of the Web 2.0, and the proliferation of opinion feeds, blogs, and social networks. Nowadays, we are able to listen to the VoM and VoC directly from these new social spaces thanks to the burst of automatic methods for performing sentiment analysis over them (Liu, 2012). These methods directly deal with the posted texts to identify global assessments (i.e., reputation) over target items, to detect the subject of the opinion (i.e., aspects) and its orientation (i.e., polarity). From now on, we will consider as *social data* the collective information produced by customers and consumers as they actively participate in online social activities, and we will refer to all the data elements extracted from social data by means of sentiment analysis tools as *sentiment data*.

A good number of commercial tools have recently appeared in the market for listening and analyzing social media and product review forums, for example Salesforce Radian6 (http://www.salesforce.com/

Figure 1. BI contexts and their relation to the Web 3.0 data infrastructure
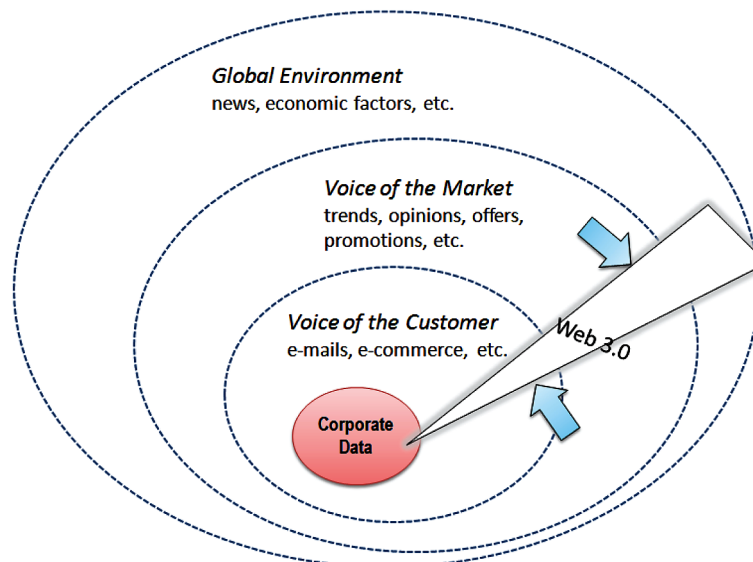
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