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ScienceDirect

Procedia Computer Science 87 (2016) 221 – 226

Procedia Computer Science

Fourth International Conference on Recent Trends in

Computer Science & Engineering

The implications of Big Data analytics on Business Intelligence: A qualitative study in China

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Abstract

Social media has brought about a revolution and dictated a paradigm shift in the operational strategies of firms globally. It has resulted in collection of massive data from a variety of social media channels, necessitating use of this data for business intelligence purposes. Despite its importance, little research exists on the implications of the use of Big Data analytics for business intelligence purposes. This study fills this gap in knowledge by examining the role and implication of Big Data analytics on business intelligence for the data collected from Social media channels in China. Given the exploratory nature of the research, the study takes a qualitative approach to data collection and analysis. Based on an extensive literature review, the study has developed a robust semi-structure questionnaire. We plan to conduct approximately 35-40 interviews with respondents such as IT managers, IT consultants, and Senior Business managers among others from a wide range of industries including retail and manufacturing settings. The data will be analysed using Nvivo to identify issues that are critical for creating value through Big Data analytics for business intelligence purposes. The results have significant impact for both theory and practice to devise plans and strategies to optimise the benefits of social-media channels for business value.

Keywords: Social media, Big Data Analytics, Customer intelligence, Competitor intelligence, Business Intelligence,, Facebook, Twitter, LinkedIn, Google+, Weibo, Wechat

1. Introduction

Business intelligence (BI) is the ability of a company to make meaningful use of data it collects in the course of its day-to-day business operations (Kimble & Milolidakis, 2015). The BI could play an important role in improving organizational performance by identifying new opportunities, highlighting potential threats, revealing new business insights and enhancing decision making processes among many other benefits (Xia & Gong, 2014; Kowalczyk & Buxmann, 2014). Currently, BI solutions mainly focus on structured and internal data of enterprise. As a result, a lot of valuable information embedded in unstructured and external data remains hidden, which could potentially lead to incomplete view of the reality and resultantly biased business decision making.

The advent of computing and internet technologies have facilitated collection of a large volume of heterogeneous data from multiple sources on an ongoing basis posing new challenges and opportunities for business intelligence.

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Peer-review under responsibility of the Organizing Committee of ICRTCSE 2016
doi:10.1016/j.procs.2016.05.152

This data involve both structured and unstructured, complex and simple information. For example, Wal-Mart can handle more than 1 million transactions per hour (The Economist, 2010). Twitter posts more than 500 million tweets every day (internetlivestats, 2015). Weibo is reported to have over 766 million active users per day in 2014 (Weibo, 2015). The increasing use of social media such as YouTube, Twitter, and Weibo has contributed nearly 90% of the total data available today (Sharma et al., 2014). These unprecedented large and complex data have given birth to the concept of "Big Data" (Sharma et al., 2014).

Given its potential of creating business value, Big data has gained significant attention in recent years. According to a TDWI survey in 2009, 38% of the surveyed organizations have practiced advanced analytics and 85% reported that they would deploy it in three years (Russom, 2011). By using advanced analytics, enterprises can analyze big data to learn, both, the current state of business and the constantly evolving processes such as consumer behavior (Russom, 2011). Big data analytics is expected to handle many challenges that businesses face today (Marín-Ortega et al., 2014).

However, the existing research in use of Big Data for business intelligence is mainly focussed on the benefits and challenges of business intelligence and big data, while the practical implications of using big data analytics in enhancing business intelligence remains comparatively under-researched. Some research exist generally focused on the methods, technical problems and its possible solutions in utilizing big data analytics for business intelligence, but there is a dearth of studies on the practical implications of using big data analytics for business intelligence in general and particularly in Chinese context especially for data collected through social media. This research fills this gap in knowledge by examining the practical implication of big data analytics for business intelligence by using social media data in China, and assess the future developments. Therefore, the research questions are:

1. What are the implications of big data analytics on business intelligence in China especially for data collected from social media?
2. What are the future directions for further developments in use of big data analytics for business intelligence?

This study is significant as it investigates an issue in a largely unexplored research area. The study contributes in multiple ways: (1) it adds to the body of knowledge on the role Big Data analytics can play in BI and will help in understanding the implications of Big Data on BI. The results will help managers and business owners in putting place strategies to use Big Data analytics to understand their business better and improve their decision making and profitability. The ever increased use of Social Media in China provides a strong case for understanding how massive data collected from Social media can be used for furthering business productivity and customer service improvements in China.

2. Literature Review

2.1. Business Intelligence

Business intelligence (BI) is the ability of a company to make meaningful use of available data (Kimble & Milolidakis, 2015). Business intelligence includes a range of areas such as competitor intelligence, customer intelligence, market intelligence, product intelligence, strategic intelligence, technological intelligence and business counterintelligence (Kimble & Milolidakis, 2015). Xia and Gong (2014) cited a survey conducted by Thomson in 2004 suggesting that the major benefits of BI are generating faster and more accurate reporting (81%), improved business decision making (78%), improved customer service (56%) and increasing company revenue (49%).

2.2. Big Data

Big data is typically characterised by three important attributes, namely volume, variety and velocity. The three Vs signify massive data volume, data type variety and diverse data generation velocity (Russom, 2011). In terms of data volume, for example, Nielsen can generate around 300,000 rows of real-time data per second from live viewing and yield more than one billion records per month to do big data analysis (Prescott, 2014). In terms of data variety, big data analytics of, both, structured and unstructured data can help companies generate insights from various sources, including consumer transactions, inventory monitoring, store-based video, advertisement and consumer

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