A Framework of Acquiring Enterprise Competitive Intelligence from Microblogs

Jie Zhao, Xueya Wang, Zheng Ma
School of Business, Anhui University, Hefei, China
Zj_teacher@126.com

Abstract. In this paper, we propose a basic framework of acquiring enterprise competitive intelligence from microblogs. With the rapid development of microblogging services, how to utilize microblogs for business decision has been a hot topic. We first analyze the types of enterprise competitive intelligence in microblogs and classify them into internal intelligence and external intelligence. Then, we propose to focus on enterprise microblogs to extract internal intelligence and focus on event microblogs to extract external intelligence.

Keywords: Microblog, Enterprise competitive intelligence, Acquirement

1 Introduction

Microblogging services have been one of the major information sources in Web 2.0 age. With the increasing development of the volume of microblog data, how to extract valuable competitive intelligence from Web 2.0 source such as microblogs has been a research topic in recent years [1, 2]. Especially, many companies have opened their microblog accounts on microblogging platforms. These enterprise microblog accounts post many messages about the enterprise, which can be used to infer useful information. In addition, as we can find microblogs reporting some specific event about a company or a product of a company, e.g., Apple Watch, it is meaningful to collect such event microblogs and mine information from them.

However, it is not a trivial job to acquire competitive intelligence from microblogs. First, microblogs contain many kinds of information, ranging from daily activities to international political events, thus a right angle for analyzing microblogs is needed. Obviously, not all microblogs include competitive intelligence. Therefore, we need to limit the searching range on microblogging platforms. Second, what kinds of competitive intelligence can be extracted from microblogs? Enterprise competitive intelligence usually involves three types of information, namely competitor, competitive environment, and competitive strategy [3]. Since microblogs are too short to contain a complete description about a company, a reasonable viewpoint is to regard microblogs as one but not the only one source of acquiring competitive intelligence. Finally, how to acquire enterprise competitive intelligence from microblogs? This urges a new framework.
In this paper, we focus on the acquirement of enterprise competitive intelligence from microblogs. In particular, we present a framework that describing the process of acquiring competitive intelligence from microblogs.

The remainder of the paper is structured as follows. Section 2 briefly describes the related work of the paper. Section 3 explains the framework of acquiring enterprise competitive intelligence from microblogs. Section 4 concludes the paper and suggests future work.

2 Related Work

Microblog is one of the new social network platforms boosted in recent years. Generally, microblog has the following properties [4]:

(1) There are a great number of microblog users in the Internet. This number, compared with other types of social communication platforms, is rather a huge one. For example, Twitter has over 100 million users and so do other microblog platforms such as Sina Weibo and Tecent Weibo in China. Those users can generate a large amount of information every day on the microblog platform.

(2) Microblog messages contain rich social network information. This is much different from other types of information, which only present their content. On the contrast, microblog users are connected each other on the microblog platforms via following, reviewing, and reposting behaviors.

(3) Microblog messages are usually very fresh as many users will post microblog message at the first time when they see or meet some special events. Another reason for the real-time property of microblog is that nowadays smart phones are very popular for people to post microblogs in time.

Competitive intelligence refers to the process that gathering, analyzing and delivering information about competition environment and competitors, and then transforming them into intelligence [3]. Competitive intelligence is acquired, produced and transmitted through competitive intelligence systems (CIS).

Traditionally, people will utilize some publications to acquire competitive intelligence, e.g., news paper, magazines, or other industry reports. With the rapid development of microblogging systems, people can search any information in a real-time way, thus it has become an important way to obtain competitive intelligence from microblogos [5].

Recently, researchers introduced Web-based text mining approach into CIS [6]. This approach aims at finding implicit knowledge from a lot of text data by using some fundamental technologies, such as computing linguistics, statistical analysis, machine learning, and information retrieval. Some specific methods have been proposed to process Web pages so far, including extracting text blocks from Web pages and detecting changes of Web pages. Through the text-mining-based approaches, the noisy data in Web pages can be eliminated, and a set of text blocks are obtained and even clustered in some rules. However, this method will consequently produce a large number of text blocks for each Web page, which will bring much more work to experts. Furthermore, if the text blocks are clustered under
specific rules, the information about competitors or competition environment will spread among different clusters and introduce additional work for information analysis. Some other researchers proposed to extract time and location information in Web pages as well as microblogs to obtain valuable information [7-9].

3 Framework of Acquiring Competitive Intelligence from Microblogs

In this section, we describe the framework of acquiring enterprise competitive intelligence from microblogs. In Section 3.1, we analyze the types of competitive intelligence in microblogs. In Section 3.2, we present the details of the framework.

3.1 Competitive Intelligence in Microblogs

Compared to traditional sources of competitive intelligence, microblogs have a larger volume of data, which is frequently updated and can be regarded as near-real-time data. According to the time requirement of competitive intelligence, more fresh means more valuable.

According to the traditional theories about competitive intelligence, there are three types of competitive intelligence, which are related with competitors, competition environment, and competition strategies. However, as competition strategies are difficult to obtain in Web because of security reasons, many researchers propose to focus on competitor intelligence and competitive environment, as shown in Fig. 1.

Due to the special properties of microblogs, we can only focus on extracting competitor intelligence from microblogs. Particularly, competitor intelligence in microblogs can be classified into two types, which are shown in Table 1.
<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Intelligence</td>
</tr>
<tr>
<td>Product Intelligence, Market Intelligence, Operation Intelligence</td>
</tr>
<tr>
<td>External Intelligence</td>
</tr>
<tr>
<td>Cooperation Intelligence, Industry Intelligence</td>
</tr>
</tbody>
</table>

3.2 Acquiring Competitive Intelligence in Microblogs

The overall framework of acquiring enterprise competitive intelligence from microblogs is shown in Fig. 2. We concentrate on two kinds of microblogs, which are enterprise microblogs and event microblogs. Enterprise microblogs are posted by enterprise accounts, and thus contain much information about internal intelligence. We focus on such kind of microblogs for extracting internal intelligence. Event microblogs usually report business news such as company mergence and cooperation, thus we focus on such microblogs to extract external intelligence.

![Fig. 1. Framework of acquiring enterprise competitive intelligence from microblogs](image-url)
4 Conclusion

In this paper, we proposed a basic framework of acquiring enterprise competitive intelligence from microblogs. With the rapid development of microblogging services, how to utilize microblogs for business decision has been a hot topic. We analyzed the types of enterprise competitive intelligence in microblogs and classified them into internal intelligence and external intelligence. Then, we proposed to focus on enterprise microblogs to extract internal intelligence and focus on event microblogs to extract external intelligence.

In the future, we will concentrate on developing detailed algorithms as well as prototype systems for acquiring enterprise competitive intelligence from microblogs.

Acknowledgement. This work is supported by the National Science Foundation of China (no. 71273010), the Doctor Start-up Fund of Anhui University, and the Academic Innovative Research Program of Anhui University (no.yfc100274 and no.yfc100280).

References

7. Qingqing Zhang, Peiquan Jin, Lihua Yue, Extracting Focused Locations for Web Pages, The First International Workshop on Web-based Geographic Information Management (WGIM) (in conjunction with WAIM’11), L. Wang et al. (Eds.): WAIM 2011 Workshops, LNCS 7142, Springer, 2011, pp.76-89