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PROGRESS IN COMPETITIVE INTELLIGENCE RESEARCH UNDER THE ENVIRONMENT OF SOCIAL MEDIA

Proceedings of International Conference on Competitive Intelligence'2012

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PROGRESS ON COMPETITIVE
INTELLIGENCE RESEARCH UNDER THE ENVIRONMENT
OF SOCIAL MEDIA

Excellent Conference Papers of the Tenth International
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编 委 会

Preface

The changes of global economic environment put forward new challenges for the development of enterprise. The competition between enterprises will turn from the competition about production line, product and technology to the all-round information competition. As a consequence, the globalization competition of enterprise will face the big data era, and CI(competitive intelligence) will play more and more important role in the course of competition. To boost researching and innovation about CI in China, and also bring over the new content and new idea to Chinese CI undertaking with a view to promote the CI is used widely in all walks of life and speed up the construction of CI support system, Peking University and Beijing Academy of Science & Technology held twice ICCI (International Conference of CI) in the year of 2008 and 2010 respectively successful. And these twice ICCIs have achieved fruitful results and good social repercussions, and established a good brand image among the field of CI.

To further promote and strengthen the communication and cooperation between the colleagues at home and abroad in the field of CI, and also boost and accumulate the practical and theoretical achievements about CI research as well, ICCI (2012) was held by Peking University and Beijing Academy of Science & Technology jointly on 29-30 October, 2012. The conference organized by Research Center for Competitiven Intelligence & Competitiveness, Peking University, Beijing Institute of Science & Technology Information, Beijing United Information Center for Science-Technology-Economy and Beijing Society for Science and Technology Information. And the conference attracted extensive attention and far-ranging support from the field of CI around the world.

The conference invited more than 30 renowned experts in the field of CI including the experts from the field of online public opinion research, technological innovation and technological management, business competitive intelligence consulting service. And they are from Society of Competitive Intelligence Professionals of U. S. A. , University of Pittsburg, Japan University of Economics, Shizuoka University in Japan, Berlin University, Competitive intelligence workroom, ESCEM, France Business School, Complexium company from German, Peking University, Chinese Academy of Science, Wuhan University, Renmin University of China, Nanjing University, Nankai University, Hua-zhong Normal University, Shanghai Intelligence of Science & Technology Information.

The paper calling opened up to higher education institutes, research institutions, enterprises, technological intelligence service providers and so on, and received more than 70 papers. Papers presented in the conference concerns seven topics. And these seven topics are 'the development of internet public opinion and competitive intelligence', 'competitive intelligence and enterprise internationalization', 'competitive intelligence and enterprise competence', 'patent analysis and technology mining', 'technology transfer and technological competitive intelligence', 'intelligence analysis in scientific and technological innovation', 'methods, techniques and tools of competitive intelligence'. Finally, 50 papers were accepted in the proceedings through prudent review by the academic committee of the conference.

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Session 1
主 题 一

The Application of Social Media in Compatitive Intelligence
社会化媒体在竞争情报中的应用

Social Media's Competitive Intelligence Function

Xie Xinzhou[1], Liu Kun[2], Wang Qiang[3]

Abstract　Social media is the platform on which users can produce, share and exchange information, and it has become people's main medium of communication and access to information at present. Competitive intelligence is an important means for enterprises to achieve strategic objectives and economic benefits, and the sources of information as well as the access to information in competitive intelligence play a key role. The emergence of social media has opened up a new field of information sources and access to information in competitive intelligence. By exploring the features of social media and extracting its functions as enterprise user's analysis, competitor tracking, opportunity discovery as well as intelligence early warning, the study formats a service frame of social media's competitive intelligence, and discusses the content and method of social media's competitive intelligence. By analyzing the critical issues and main difficulties faced in the competitive intelligence service, the authors finally make an outlook of the future work.

Keywords　Social Media, Social Media Features, Competitive Intelligence, Function

1　Introduction

With the rapid development of social media, more and more enterprises, governments, non-profit organizations and research institutions begin to use social media to publish the news, instill culture, carry out marketing activities and improve contact with all parties. Compared with the traditional business model, social media has a lower communication costs. This advantage, coupled with its results, makes social media the current business marketing tool. Social media is more than the space for cyber citizen to making and sharing information, but a space for the marketing behavior of enterprises.

Competitive intelligence is an important means for enterprises to achieve strategic objectives and economic benefits, and the sources of information as well as the access to information in competitive intelligence play a key role. The emergence of social media has opened up a new field of information sources and access to information in competitive intelligence. By exploring the features of social media and extracting its functions as enterprise user's analysis, competitor tracking, opportunity discovery as well as intelligence early warning, the study formats a service frame of social media's competitive intelligence, and discusses the content and method of social media's competitive intelligence. By analyzing the critical issues and main difficulties faced in the competitive intelligence service, the authors finally make an outlook of the future work.

2　Features of social media

Social media refers to the method of interaction by which people can publish, share

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and exchange information and ideas in the virtual community and network.[1] Andreas Kaplan and Michael Haenlein made the definition of social media as follows: "A group of Internet-based applications concepts which are based on the concepts and technologies of Web2. 0 and allow the creation and exchange of user-generated content (UGC)."[2]

Unlike traditional media, the social media enables its information producers and consumers to break the boundaries between them, and the information-production threshold is greatly reduced. Social media users living in every corner of the world can achieve the person-to-person contact on the internet in true sense via the internet, which offers the possibility of online access to interpersonal network intelligence. At the same time, social media serves as an interactive platform, and the speed and efficiency of information dissemination and feedback are improved greatly. Social media's content features of fragmentation reduce the threshold of information production further, and improve the efficiency of information production. These features make social media become competitive intelligence information media which can not be ignored.

2. 1 Information interactivity

In traditional mode of information dissemination, the senders and the receivers of the information are playing relatively fixed roles. A large amount of information is produced and released by a small number of specific information producers, and the transmission and reception of information are contact. Although the information recipients have the willingness to producing information as well as the ability to produce information, there are no effective channels of information dissemination. Thus, the dissemination of information is conducted by a small number of producers in an information-centric approach. The emergence of the internet has expanded the range of information producers and the scope of information dissemination and the production and dissemination of information is not just a unique feature of a small number of news media. However, there is still a high technical threshold in terms of the release of information on the Internet, Send-Receive information transfer mode does not appear to fundamental change. Such a delivery model as "send-receive" of information has no fundamental changes.

The development of social media reconstructed traditional mode of information transmission, and the release of information has no threshold at all. Whatever the forms of social media are, as long as you have an account, you can publish information on the Internet. The boundary between the sender and receiver has become increasingly blurred and the dissemination of information is in the tendency of decentralization mode. Users can interact through production and feedback of information. They can quickly form a community based on common interest, and they can fully discuss many topics in this community in a dynamic state.[3] Information users can be informed of the information content completely according to their interests and needs, thus eliminating the process of filtering irrelevant information.[4] At the same time, there is no absolute dominant individual. Instead, in a big community, there are various different ethnic groups, and they get diverse information in a variety of channels. In social media, every user exerts influence on others through interaction.

2. 2 Person-to-person interconnectivity

Interconnection between people initially emerged in the way of Little Boxes. People

contact through the family relationships, working relationship as well as the neighborhood relations. Even though the transmission of information is restricted, the process is also conducted in the corresponding relationship within the group. These groups usually have certain structures, hierarchy or borders, and in this mode of communication, the links between people can be the Door-to-Door interconnection. People usually interact with the members of only one group within a certain period. With the development of transportation and communication technologies, the boundaries of these social relations have been gradually broken and people participate in a wider range of social groups, thus the range of information transfer is broader. Place-to-Place interconnection can be done, but people still can't break through the barriers because of the costs of transportation and technology as well as time cost. Therefore, interconnection between people is subject to certain restrictions. [5]

The process of rapid development of the internet can be seen as the continuously expanding process of interconnection, and the development of social media pushes this interconnection to its extreme. Geography, time and even country boundaries are no longer the obstacles for this connectedness, and internet users widely present in any physical location can conduct person-to-person interconnection with others via social media. [6] It has the basic structure of the network, namely, nodes and contact. [7] Moreover, with the interaction between users through social media, we can track and judge the nature of the links in the network of people. In this way, we can not only get competitors' social network through social media and track and analyze their network, but also construct a more ideal human intelligence network which is intense inside and relaxed outside by taking the initiative to contact. [8]

2.3 The universality of information production

In traditional mode, information production is completed by official agencies or related companies, and its production process needs specific technologies, thus only a small number of professionals are responsible for information production. With the emergence of the internet, the technological threshold of information production is gradually reduced, but the internet content is still dominated by a few net editors. Even forums and blogs, two forms of social media, still need some requirements for the technologies for their content production.

The emergence of internet micro-content which is represented by microblog has realized the fragmentation of news[9], reducing the threshold for the use of social media. Theoretically, any users with access to social media can become users and disseminators of information, thus with the growth of users of social media, the information producers in the Internet age is increasing synchronically. On the social media platform, the scope of information production is more and more widely.

2.4 High efficiency of information transmission

In traditional mode of information dissemination, limited to content responsibility system and technology, to achieve the communication of information between the sender and receiver usually has a certain cycle, and new information can't reach the receiver at the first time. A few ways of instant messaging, such as live broadcasting, have high technical

threshold, and it is difficult for more information producers to use. These insuperable characteristics of the traditional information set insurmountable obstacles for promoting the efficiency of information transmission.

Transmission through social media has broken through the barriers. Especially the development of mobile Internet technology, further cuts the time between information production and information transmission. [10] There are live broadcasts of many social events on the microblog platform. Combined with social media's characteristic of broad interconnection, in the social media environment, the dissemination of information has gradually realized from the pursuit of timely dissemination to instant dissemination.

2.5 Upgradeability of information content

In the traditional media, information dissemination is irreversible. Whether it is print media, television media or broadcast media, once the information has been released, it can't be changed. Both updating and deleting information mean that they will pay extremely high economic and reputation costs. This makes the subjects of information release very cautious before releasing behavior. But when they guarantee the quality of information, they potentially increase the delay of information dissemination.

In social media, the release of information is no longer irreversible behavior, and the information publishers can easily delete or modify the information which has been published. [11] In addition, the maintenance of information is not just the behavior of information publishers. Due to the presence of social media interactivity, information receiver can make comments or forwarding on information, and these behaviors can also be considered as the updating of information. The upgradeability of social media's information provides new clues for the tracking of intelligence, but also poses new challenges for intelligence verification.

2.6 The fragmentation of information content

Unlike the traditional media's norms as well as the content and structure of its system, the content of the social media is freer and more casual in terms of content, which makes the release of information present in the form of fragmentation. From the viewpoint of the content of a single piece of information, it can't achieve a systematic and complete sense in meaning. Generally speaking, however, social media's content is equipped with some advantages that the traditional media can't match because of the universality of information sources and the continuity of time. Thus social media pushes the limitations which are caused by the scarce resources, such as published layout and broadcast time of traditional media.

From the perspective of intelligence's demand for information content, to meet requirements of being fast and accurate, it is necessary to cover the range of information production more widely, and to find valuable intelligence content from more sources of information and intelligence clues. Besides, we should look forward that these sources of information can update the latest dynamic information in real time. Social media content's characteristics of being short, adaptable and fast can meet the information need better.

2.7 Social media has formed dynamic communities

In the traditional mode of information production, information content is organized in

the form of special subjects, and topics and frameworks are relatively fixed. Whether the professional medium of information dissemination represented by journals or the medium of extensive content dissemination represented by news reports, information content is organized and disseminated according to the subjective judgments of the content production personnel. For information users, they need to obtain the information content which they are interested in through screening, and at the same time, they are also subject to interference from other information content.

In social media, people can quickly form a community based on common interests, and they can fully discuss many topics in this community in a dynamic state. [12] Information users can be informed of the information content completely according to their interests and needs, thus eliminating the process of filtering irrelevant information. [13]

3   Social media's competitive intelligence function

Social media has the functions and features of traditional media, and at the same time, it shows some new characteristics such as interactivity, "person-to-person" connectivity and universality, which traditional media and the early internet are not equipped with. Therefore, in addition to a number of competitive intelligence functions of traditional media as well as the early new media, social media also has some new competitive intelligence functions. According to the characteristics of the social media, the competitive intelligence functions can be summarized as four aspects: comprehensive customer observation, competitor tracking and analysis, opportunity discovery and market early warning.

3.1   Comprehensive customer observation

Social media is the platform for enterprises user observation. Firstly, there is a growth in the number of social media users, among which a considerable part are enterprise products users, or potential users. Some behavior information of purchasing, recommending, commenting, complaining or reporting, which is related to consumption, is also expressed through social media. Secondly, each user has a separate page, which drives social media to form a consumer-centric data collection and distribution center. Therefore, social media is not only beneficial to improving user information whose main content is the state of business users, but also able to include user behaviors and their social network and to build better user archives. Meanwhile, the behavior information provides key information resources for enterprise user behavior analysis and enterprise user segment.

3.1.1   To establish comprehensive customer archives through social media

Accurate and comprehensive customer archives are the basis for enterprises to make market segmentation and to implement precise marketing. More and more enterprises implement customer relationship management (CRM) according to customer archives. In the traditional media environment, customer archives which focus on demographic information, including gender, age, ethnicity, education, health and income. These contents describe the basic information of a user in a relatively comprehensive way, providing a data base for customer relationship management. In social media environment, however, enterprise customers have found the methods of complaining, and more information related to enterprise products is published by the users. The information includes their feelings after

using a product, evaluation of the product and their expectations or dissatisfactions. In addition, customers exert impact on its social network via social media, and the nodes in the network society also become a source of potential customers.[14] In social media environment, while combining information in a few aspects together, user behavior information, mental state information, social networks information and all kinds of demographic information together will establish a full range of customer archives and ensure marketing behavior more accurately and effectively.

3.1.2 To analyze customer behavior patterns through social media

Social media influences people's lifestyles and consumption behaviors. Before consumption, customers are accustomed to get information about products and services through social media. After consumption, they will evaluate the products and services through social media and spread the evaluation content through social media. It can be seen that, in social media, the behavior information that customers reflect is mainly divided into two types, namely, consumption behavior information and dissemination behavior information.

The analysis of consumption behavior information is the observation of the customers, including the consumption behavior which is reflected by the disseminated information content both before and after consumption, such as what consumers concern about, what they compare, where do they buy, why they purchase it, why they give up the purchasing, what kind of purchasing and using experience do they have, This consumer behavior information is a strong signal of the change from potential customers into real customers, and it is also the important basis for enhancing customer loyalty, promoting cross-consumption and improving products and services.

The analysis of consumption behavior information is the observation of the influence on customers, including evaluation information and its propagation path after consumption. For example, what kind of comment do the consumers make on the products and services? Is it positive or negative? What about the consumers' sphere of influence? How strong is their influence? What is the reaction of the recipients who get this evaluative information? What is the likelihood that these recipients can become new customers? These acts of information dissemination are an important signal of finding potential consumers and early warning of customer loss.

Both consumption behavior and dissemination behavior have high intelligence value for monitoring and analyzing the behaviors of our rivals' consumers, and they are effective means for enterprises to assess competitiveness, improve competitive advantage, and gain market share.[15]

3.1.3 Prediction of market reaction

With its advantage of aggregation, social media can store all the users' information to predict the actual market situation.[16] There is a certain synthetic correlation between the pre-sales activeness and the late actual sales among the social media users in terms of a product. If the amount of comments and forwarding information made by social media users is large enough, after some selections and appropriate processing, they can be used to forecast consumption trends in the future, and the accuracy is higher than question-