

The Application of Network Link Analysis in Enterprise Competitive Intelligence

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Abstract. In this paper, the principle of the network link analysis, steps, application field is analyzed, on the basis of Lenovo and Samsung two business enterprises as the research object, similar in nature, scope, link analysis, through the analysis of selected samples for enterprise network link data, the data is system analysis conclusion.

Introduction

Since the 1990 s, with the speeding up of economic globalization and the rapid development of information technology, the popularity of Internet and the wide application of e-commerce, the human race has entered the era of network economy. The rapid growth of news information, the rapid increase of scientific and technological information, the rapid increase of entertainment information and the rapid increase of advertising information, the constant updating of information on the Internet has made people's eyes open. Under the Internet economy, "fast" has become a key factor in the competition among enterprises, and the Internet economy has increased the competition between enterprises. Thus, an era of continuous generation, transmission and use of information intelligence, namely, in the Internet era, centered on "intelligence"[1].

The development of network economy promoted the enterprise products and brand publicity and promotion, online advertising displays rich contents, various forms of characteristics, such as links, games, embedded, bidding, etc. For by each enterprise Internet web link analysis can further mining and use of the Internet information. Foreign scholars have found that web links contain useful business information [2].The number of links to the site and the business revenue, as well as the associated [3] on the performance metrics of profits and other operations. And people through the research on corporate websites such as Vaughan discovered the link between enterprise motivation, most of the website links set for commercial purposes, links can be used as a mining enterprise competitive intelligence tools [4].Therefore, the frequency of links between enterprise websites can be used to measure the similarity of enterprises in product categories and business scope, and to reveal certain competition relations between enterprises.

An Overview of Network Link Analysis

The Complexity of Network Link Relationships. Web links play a link between web pages and are an important part of the Internet. Network links make it easier for people to get information, and people can access information from different physical regions via web links. All web pages are linked together through links, creating an intricate network known as the Internet. According to the external characteristics of the site, the type of link can be divided into: 1 recommended links: was the chain web page on the chain of a real affirmation, chain web pages as the "recommended sites" web, "popular website page" or a "wonderful website page".2 cooperation link: the main reason of the cooperative link: the service function of the linked web page is used; One of the organizers; Information source; The contents are relevant. Related links: the links between the links and the web pages are most correlated with each other. Resource link: links to a certain resource of the linked web page. For example: communication link (QQ, weibo, BBS, WeChat, mailbox, etc.).5 AD link: a Banner is usually set up on the channels and web pages that are more visited. There are

three main types: one is advertising for other enterprises; advertising their commercial services; Personal website sponsored sexual advertising.

The Principle of Network Link Analysis. Link analysis, also known as structural analysis, the numerous links to each other on the WWW page to be viewed as a huge links directed graph. On the WWW links in an implicit information on references, if a hyperlink to the referenced or being more authoritative website reference more than the number of times, show that the web site or web quality and the grade is higher. The principle of link analysis is based on the assumption that the hyperlink as it points to the approval of the page, under this assumption, if a page N M through hyperlinks pointing to the page, then the implicit meaning is: the page N and M is the theme of the interrelated, page N page for page M is notable, which implied the valuable information for M [5].

Steps for Network Link Analysis

Sample Selection. In order to ensure objectivity, the general scope of the research object is determined, and the statistical sampling method is used to extract the representative parts from the whole.

Sample Raw Data Acquisition. Because of the different research purposes and objects, the network link analysis of sample data can be web sites, web pages and other entities such as various types of digital resources, can also be related to network link attribute data abstraction.

Parsing of Network Links. The existence of the network links and file types are diverse, in addition to HTM, HTML files as the filename suffix, such as PDF, JPG as suffix graphics file, using the script file written in javascript, and vbscript, doc, SLS, PPT, etc. as the suffix of office documents and so on are likely to have different forms of network links. The variety of document representation types presents a great challenge to the analysis of network links. You can now use a special link analysis software such as webstat for analysis, and parsing of dynamic and static web links can be resolved by installing plug-ins. In addition, from the perspective of information statistics, the link statistics can be analyzed through the Internet search engine.

Statistical Analysis of Data. By using statistical inference method, statistics and statistical figure, statistical description method, quantitative and qualitative methods of statistical description of data, the collected data and information for system analysis and research, through the analysis to describe the sample characteristics, find the rule, and found that based on the statistical data form assumptions, on the basis of the assumption to make reasonable inference, and help to analysis for competitive intelligence.

The Application of Network Link Analysis in Enterprise Competitive Intelligence

Mining Enterprise Information. Enterprise web site home page is often a basic situation of the real reaction, but due to the home page is the main link properties on information below a lot of information resources, so just from the home page is difficult to analysis the features of an enterprise with core business [6]. In general, sensitive information is difficult to obtain in the process of intelligence-gathering, thus the access to the enterprise's core business is often restricted. Network link analysis can through the website links between different enterprises analysis method to obtain relevant information of enterprise, company, group, organization or individual makes cooperation between usually exchange each other on their respective web page links. If the number of links between the two enterprise sites is more frequent, it can be considered that there is some kind of cooperative relationship between them in the business or otherwise. If the two links of the same enterprise in the field of another enterprise at the same time in the website, you can think in our business between them there is a competitive relationship or other aspects, thus the relationship between the enterprise can be revealed clearly by link analysis, network links of an enterprise long-term analysis, can dig out many related to the current business model and the future development of information [7].

Implement Real-time Monitoring of Competitors. By competitors close contact site tracking and detection, are likely to find some sensitive content, the content can often reflect the enterprise the next step is to launch new products or services, etc., through the access to sensitive information can be analyzed out the development direction of the competitors in the future as well as the recent will have what kind of action. In the field of business, organization or enterprise can through the analysis of the information, to grasp the development trend of competitors' products, from the contrast, found that the difference between, so as to timely analysis and adjust their competitive strategy [8].

Predict the Direction of Your Opponent. From a new or rival completely unrelated domain of web information, can determine or predict whether or not a competitor to the development of new industries, or competitors will have what innovations. Assuming that A company's web page links appear in A completely unrelated web page B, it indicates that A business may have to move into the domain of enterprise B. Link analysis in intelligence analysis is a very secluded analysis method, it is only related to specific analysis of the target page is analyzed, the result of analysis is often highly efficient and accurate often won't let competitors see [9].

Identify Potential Competitors. Some new enterprises usually go to the reference for the success of the enterprise management mode and development direction, by comparing the existing enterprise development direction to determine its own development strategy, so as to establish a unique business model and competitive advantage. The enterprise conducts research on specific enterprises through network link analysis, and it is often found that some of the same industries are in the process of rising potential threats against the enterprises. After the prediction, enterprises can adjust their development direction in time to avoid the sudden impact of their competitors.

The Research Instance

Research Object Selection. In this study, two companies with similar operating characteristics, lenovo and samsung, were selected as research objects. Through the analysis of the link analysis of these two enterprises, the paper finds out the information about the business strategy and the future development trend, and concludes the information of the two enterprises. To verify the major function of network link analysis in enterprise competitive intelligence, this article is mainly to lenovo and samsung parts of the domestic market business strategy and future development trend is analyzed, in order to ensure comparability of sample object, only selected the website links of samsung in China as the research sample.

The Research Methods. This study adopts the link query method in the advanced search engine of Google search engine, which includes several parts. Nurl: find a competitor more accurately. Inanchor: to find a competitor for a particular keyword, and these competitors are often optimized for search engines. Intitle : Find more accurate competition pages. Link: Check the external links of the site. You can find a lot of link resources by looking at the external links of your competitor's pages. Through systematic analysis of these links, you can get a lot of information from within and between enterprises to provide intelligence for competition among enterprises. This study mainly used advanced search link to the Google search engine query method of external links, first of all, lenovo (www.lenovo.com.cn) and samsung (www.Samsung.com.cn) external links for collection, then the resulting page data to heavy (here mainly refers to weight the same home page under different page links, the premise is the content of the link difference), then data classification, observes calculate the percentage of each index, based on the contrast to find differences .

The Data Processing

The study subjects were the websites of lenovo (www.lenovo.com.cn) and samsung (www.Samsung.com.cn), which is the site for samsung's Chinese companies. The data will be divided into the following categories: Business content: including traditional business (service and logistics), product introduction on the homepage, sales of products, new fields, recruitment, etc.

Related links include links to relevant fields of the research object website and related industry groups. For example: some electronic mall, product application website (some game website, software website, etc.), e-commerce website and the link between the industry. Technology research: the professional technology developed by enterprises to develop new products is closely related to the development strategy of enterprises. Publicity and reporting: including external publicity, self-promotion and foreign websites. The external reports are mainly the positive publicity and reporting of some government websites and newspapers. Self-promotion is mainly the company's own advertising, its own organization of marketing activities and sponsorship activities. Foreign sites for both is different, is their own station for samsung and child standing in other countries, and for lenovo is mainly refers to its expansion abroad stand others including some occasional reference.

Put the data in descending order, we know that the samsung website ranked in the top link respectively for self propaganda, business content, technology research, while lenovo's top several is external publicity, related links, foreign sites. From the data of the study isn't hard to see: lenovo as the domestic well-known brand has grown into a mature enterprise, media and various sales outlets have habitual lenovo products as the first choice. Lenovo's main strategy is to continue to consolidate the market. From its construction of foreign sub-stations, it can be seen that lenovo is also trying to expand the foreign market while consolidating the market. Samsung, by contrast, is much different. Although it is South Korea's mature brand, but to enter the Chinese market compared to its competitors, lenovo is still a relatively short time, so need to intensify efforts to promote, from the data obtained, it is easy to see that, for example, a large proportion of the product introduction. Through the analysis and comparison of the data, the following information can be obtained:

Through the testing of closely linked websites, lenovo will be more focused on the construction and expansion of foreign markets. The samsung in the Chinese market's self-promotion strategy, through the sponsorship of the game, in the stadium, the bus station set up large billboards, and even set up on the wall outside the store signage and other activities to advertise themselves, and to expand its influence. Whether or not samsung should consider a lenovo strategy in the future of international markets will make it a place for itself.

lenovo and samsung have different development priorities. As a relatively mature domestic enterprise, lenovo will more focus on providing consumers with better services, in terms of its business content, emphasis on logistics and service accounts for a considerable proportion of the data (accounting for 11% of the total), also truly reflects the lenovo "no sooner said than done, to" enterprise culture. Samsung, on the other hand, is more focused on technology and is likely to be able to deliver high-precision products in the future. In fact, this is in line with the impression that lenovo and samsung products are giving consumers. It is possible to understand its recent development goals by monitoring the actions of enterprises that are closely related to its development trends, and to adopt appropriate strategies for its own situation by understanding its opponents.

From the study found that samsung home page has a product online upgrade introduction and the related software download link, which can be concluded that samsung is likely to software development of the market, or to what trends in software development. Based on this, we will conduct targeted tracking of competitors and collect a lot of information about competition. Through analysis, we can draw the conclusion: lenovo and samsung electronics group, due to the different stage of development, the market positioning and management thought is different, leading to their current development strategy to focus on have very big difference.

Conclusion

The application of the network link analysis in enterprise competitive intelligence has great prospects for development in the future, the study proves that the principle and method of link analysis can be applied to the enterprise competitive intelligence system. With the rapid development of information technology, network link analysis method has become a powerful

means for enterprises to collect information of competitors' development information. But as emerging enterprise competitive intelligence analysis method, the network link analysis itself also has very many shortcomings, for example: the network link analysis can not to analyze the specific content of its links to web pages, the information and conclusions are directional and indicative. Therefore, to really use the network link analysis method to make enterprise decisions, we need to explore and research further in the future.

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