



Competitive Intelligence Gathering in Strategic Decision Making

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Abstract. Over recent years, due to globalization and the increasingly fierce market competition environment, organizations have started to capitalize on the significant use of competitive intelligence (CI) systems to provide valuable information resources for strategic decision-making. The process of CI includes gathering and analyzing intelligence about both internal and external information of organizations. In this regard, CI gathering, as the premise and foundation of CI analysis and strategic decision-making, is a key link in the establishment of CI systems in organizations. In this paper, the authors aim to find a systematic methodology to form a comprehensive CI gathering system. The authors firstly sort out the existing CI gathering channels by literature reading and case collection, and then this research adopts a process-tracing method in the case study: after an in-depth study of Microsoft's CI gathering strategy, the authors conduct the reduction and analysis of the case to supplement and materialize the theory. Overall, the research findings systematically summarize the channels of CI gathering; affirm the positive effect of the synchronization and reintegration of information resources within the enterprise; and indicate that the innovation of collection tools also plays an important role in CI gathering. In addition to filling the academic gap, this paper also provides the managers of CI programs a context for building a systematic CI gathering system, understanding which tools are better suited for CI gathering; and helping them maximize the benefits of CI resources as well as the internal enterprise resources.

Keywords: Competitive Intelligence · Strategic Decision Making · Data collection · Management

1 Introduction

Nowadays, because of the further deepening of international trade and the continuous reduction of product life cycles, the market environment has become more turbulent with increasingly fierce competition. Only by making correct strategic decisions in a timely and effective manner can enterprises obtain sufficient competitive advantages for their

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development. The competitive intelligence (CI) system plays an important role in the process of strategic decision-making. It pulls together data and information from a very large and strategic view, allowing a company to predict the moves of competitors, the upcoming industry changes, and possible responses to broader environmental changes. As a result, many organizations are actively improving the competitive intelligence system, making it strong support for strategic decision-making.

Competitive intelligence is defined as “a combination of defining, gathering and analyzing intelligence about products, competitors, suppliers, regulators, partners, and customers of an organization”, in which “gathering” is an essential part. The gathering activities include identifying potential sources of information, collecting the right data legally and ethically from all available sources, and putting it in an ordered form [1]. While the traditional ways of CI gathering relied on a whole lot of facts and figures provided by third-party reports and survey results, which lacks a systematic collection network and diverse collection channels, and can only collect information with poor timeliness and very limited use-value, the advancement of information technology in recent years have provided abundant channels for enterprises to obtain external information, which greatly facilitates the collection of intelligence. The Web has become a crucial source for CI gathering. In recent studies, a context for developing Big Data frameworks and process models for CI in organizations is provided [2]. Different sorts of information from text data, such as news, blogs, and social media, can be transformed into usable chunks of information with text-mining algorithms [3].

Traditionally, it is believed that the distinction between BI (business intelligence) and CI lies in that the former is internal intelligence about and within one’s own company, whereas the latter focuses on external intelligence about the firm’s competitors [1]. In this regard, CI gathering pays more attention to predicting competitors’ movements and the external business environment, and companies are therefore more reliant on external data and research. However, given the changing business environment and the ubiquitous availability of information on the internet, it has become necessary to include broader data -both internal and external- into competitive intelligence sources. Recent studies generally consider the internal path and external path as two main directions for collecting competitive intelligence. In addition, social networks such as Facebook and business networks such as LinkedIn are increasing sources of data that may be utilized to extract competitive intelligence and combined it with internal data [3]. Furthermore, most of the existing articles on the collection of competitive intelligence are aimed at a specific method or approach, and always focus on the acquisition of external resources. However, there is a lack of integrated analysis of various channels and therefore a systematic methodology to form a set of competitive intelligence collection channels is not formed.

The purpose of this paper is twofold. First, to study and report the widely used channels for gathering competitive intelligence and then to make them summarized and classified. And second, to provide an integration of various channels, analyzing how they interact to serve the entire competitive intelligence system. The rest of the paper is organized as follows. We first try to review the core concepts of this paper, that is, the relevant theories of strategic decision-making and competitive intelligence, and then we sort out the mainstream competitive intelligence gathering methods. Next, we attempt to summarize and analyze the existing competitive intelligence collection

channels from a holistic perspective, dividing them into three categories: internal path, competitor approach, and the social-ecological approach. Thereafter, through restoring and analyzing key cases, we test our theory and further expand it by analyzing the specific process and diffusion force of intelligence gathering. Finally, the paper concludes with the implications of the study, future research directions, and the limitations of the study.

2 Literature Review

Practices' recursive nature frequently releases inertial forces inside companies, preventing strategic transformation [4]. The framing of strategic choices (SDs) and the strategic decision-making process (SDMP) is required due to the limitations of decision-making based on subjective experience. We define a strategic decision as one that is "important, in terms of the actions taken, the resources committed, or the precedents set," as defined by Mintzberg, Raisinghani, and Theoret [5]. The strategic decision-making process (SDMP) can be defined as a set of traits, such as rational, comprehensive, and political, or as a series of tasks [6] that include receiving information, formulating options, and selecting among them [7]. Executives reach strategic judgments in a logical decision-making process following a planned process of careful consideration of circumstances, alternative lines of thought, and the ramifications of the decision taken [8]. Information on topics influencing the company, including competition, markets, technologies, and societal trends, is required to assess the implications of the viable alternatives for the decision [9].

From an organizational standpoint, competitive intelligence (CI) may be described as the timely gathering, analysis, interpretation, and distribution of strategic information for use in decision-making [10]. CI is both a process and a product. As a process, CI is a collection of legal and ethical procedures for gathering, creating, evaluating, and sharing actionable information about competitors, suppliers, customers, the company itself, and the business environment [11]. As a product, information regarding the current and future behavior of competitors, suppliers, consumers, technologies, the government, acquisitions, the market, and the overall business environment is referred to as CI [12]. The research of Ching Seng Yap and Md Zabid Abdul Rashid (2021) proved that competitive intelligence practice has a beneficial impact on business performance: firms with a formal competitive intelligence unit outperform those with an informal unit in terms of organizational growth and profitability [13].

Enterprises can collect competitive intelligence mainly through three ways: Internal path, Competitor approach, and social environment approach [14].

On the inside intelligence network, each enterprise can establish an internal intelligence network about itself, competitors, competitive environment, and competitive strategy according to its development direction, personnel quality, business needs, and other factors. The directors of each department can be organized as core members of the competitive intelligence group to provide suggestions for the decision-making level of the enterprise and evaluate and select the information collected. The main aspects of this kind of information acquisition that need to be investigated and analyzed include: how many management levels there are in the company, the responsibilities and operation status of each level; Whether the various departments at each level operate effectively,

and how effectively they operate; The composition of personnel in each department of the company and their work skill level; The provision of raw materials, production equipment, production technology, and information services; Product sales area, sales situation, the market share occupied by the enterprise and the field involved in providing services; Evaluate the current shortcomings and bottlenecks in development, as well as the strategies and actions that can be taken to get rid of difficulties [15].

Competitor enterprise is the most important source of competitive intelligence. The company can obtain intelligence on future goals, current strategies, assumptions, and capabilities from competitors through competitors, suppliers, customers of competitors, and industry experts and consultants. In addition, competitor information can be collected through market and field investigation, interpersonal networks, various conferences, expositions and talks, government agencies, professional consulting agencies, information departments, and rival advertisements and media reports.

The collection of competitive intelligence can also make use of external competitive intelligence service agencies, government agencies, information agencies, and third-party profitmaking institutions. Through these channels, enterprises can obtain industry intelligence, international intelligence, government intelligence, patent intelligence, regional intelligence, and human intelligence. The collection and analysis of competitive intelligence in the context of big data puts data at the core of analysis to reveal the hidden correlation between data [16]. The most important is the development and use of big data such as Knowledge Discovery in Database (KDD), which can help enterprises extract practical intelligence from a large amount of data [15].

CI gathering is an indispensable component of strategic decision-making, and most of the previous studies have conducted in-depth research and interpretation on a certain aspect of CI gathering. It is undeniable that these studies are of positive significance for improving the quality of competitive intelligence collection, but there is still a lack of summary and analysis from a holistic perspective. This paper believes that CI gathering is a systematic and comprehensive process, which should be a combination of internal path, competitor approach, and social environment approach. Different paths work together to strengthen intelligence collection and improve the quality of strategic decision-making.

3 Microsoft China's Competitive Intelligence Acquisition Example

Intelligence gathering plays an irreplaceable role in modern companies, among which competitive intelligence will affect all aspects of corporate strategic decisions. For Microsoft, intelligence gathering is also very important.

On April 4, 1975, Bill Gates and Paul Allen started Microsoft, an American global technology firm. The words "Microchip" and "Software" make up the word "Microsoft". Microsoft is based in Redmond, Washington, and it develops, manufactures, licenses, and offers a variety of computer software services. Microsoft is the world's largest computer software company, the world's PC (Personal Computer) software development precursor, with its most famous and best-selling products: the operating system and Office software. Furthermore, on June 23, 2021, Microsoft's market valuation surpassed \$2 trillion, making it the second company in the United States to accomplish so after Apple.

In the mid-1990s, web browsers, as a necessary tool to access the Internet, became the focus of contention among computer software companies. Microsoft misjudged its efforts to develop the program, allowing competitors to grab more than 80% of the market at one point. To recapture the web browser market, Microsoft gave full play to the strengths of the competitive intelligence research department, monthly regular detection of the changes in the market share of the web browser, as a guide for Microsoft to formulate the market strategy of the web browser. Competitive intelligence helped Microsoft finally capture the market leader in web browsers. It was found that competitive intelligence contributed 17 percent to Microsoft in 1997.

Why can Microsoft make scientific decisions in a crowded competitive market? There are many factors, the most important of which is that Microsoft has a rigorous and excellent competitive intelligence gathering network. Microsoft has a very mature intelligence collection system with collection channels throughout a variety of media. Microsoft pays attention to the acquisition of information in the social environment and makes clever use of big data and other technological means in the process. Microsoft works closely with the U.S. National Bureau of Statistics to obtain macro statistical reports on the level of economic development, industry development, regional development, and computer and network applications across the country. Microsoft's branches should upload information, and regularly generate local market situation analysis reports, and the strategy of the Headquarters in the United States to keep consistent. This keeps the whole company informed.

Microsoft's corporate intelligence comes from a variety of sources, the internal information network has a special interface for uploading files to different branches, so that the headquarters can keep abreast of local developments. Companies that work for Microsoft must first sign a nonproliferation agreement, and a specialist consultancy is responsible for regularly uploading information and updating websites. So it can also be said that Microsoft's intelligence management is completely based on the network. Customized keywords based on the policy environment, software and hardware industry dynamics, network industry environment, competitors, partners, and end-market dynamics will be automatically sent to the designated links. Of course, such intercepts of online information are regularly updated, sometimes even increased or decreased. It's by far the fastest way for companies to get information.

In the social environment, Microsoft encourages affiliates to collaborate with American consultants: this ensures the authority of specific research and the sharing of internal information. Microsoft China, for example, has a long-standing relationship with Gallup. Every time Microsoft launches a new product or launches a new development plan, it will be supported by first-hand market research materials. In China, the frequency of research is about 5 times a year on average. However, market research is not only a process of quantifying samples. Before each survey, the company's internal technical personnel, demand makers, and survey project leaders will reach full communication, carefully lock each sample, and summarize the original relevant information of the project, providing the original background information for the collection of quantitative samples.

For competitors, Microsoft attaches great importance to intelligence acquisition and defense. Microsoft will not allow any internal information to be leaked to competitors. Microsoft fired an engineer after he posted on his blog a picture of the company taking

apart ten Apple computers. The publication of the photos and the firing led to speculation that Microsoft was developing an operating system or software based on apple computers. Industry media, experts, and Microsoft's competitors and partners began to speculate on Microsoft's strategic direction and tactics based on this and even influenced the capital market's prediction and evaluation of Microsoft. Bill Gates, Microsoft's chairman, has publicly admitted that his company has people collecting intelligence from bins in competitors' offices.

For Microsoft, its approach is also essential to gaining intelligence. The unique corporate culture of Microsoft promotes the interaction of internal information, which is mainly reflected in the internal information of the enterprise. Intranet forums are often used to communicate with employees, including important information. Individual employees sometimes pay attention to intelligence and push it through internal emails to clarify the impact of each strategy as quickly as possible. Microsoft, meanwhile, makes up for the lack of in-depth reporting with its consulting firms and public relations firms. They integrate many newspaper and industry materials into a unique intelligence service mechanism within Microsoft. Of course, Microsoft will not let go of old rivals, their BD (development specialist), and marketing specialist may become a full-time intelligence of a rival. They have a very sensitive sense of smell, and all kinds of events, such as exhibitions, seminars, and manufacturer promotions, become important opportunities for them to obtain information.

Microsoft, like any other company, has flaws, and as it expands into new markets, it will confront numerous obstacles and formidable competition. It does, however, have several advantages, including the potential to generate unlimited new items while leveraging a large base of old products and customers. Internal issues, external obstacles, and new market opportunities are all actively addressed by Microsoft employees. They shift course as fresh possibilities occur. They don't wait for things to happen; they make them happen. Bill Gates pushed Microsoft forward as if all of the company's current markets would dry up tomorrow. Microsoft does not always succeed, but it does so quite frequently.

4 Collection Path of Competitive Intelligence

Microsoft has gained a firm foothold in the competitive market with its excellent intelligence gathering network and intelligence defense system. Its model can be copied by other organizations. This study will analyze the internal road of the enterprise, competitors, and social environment from three perspectives, combined with the case of Microsoft. To provide enterprises with a general reference to obtain information operation method.

4.1 Internal Roads

Enterprise scientific decision-making based on information depends on three influential factors. They are a perfect and unobstructed internal intelligence network, good division of labor, and timely and effective response to intelligence at the strategic level.

The source of Microsoft's internal intelligence is the strategic decision of the headquarters, the process of product development, the latest product decision, etc. At the same time, Microsoft often holds thematic meetings where employees discuss ways to respond to a particular competitive intelligence [17]. The company encourages employees to make suggestions and pay attention to their daily comments so that internal information can be obtained smoothly and timely.

In addition, the company also has about 10 special intelligence links. For enterprises at any time to check the macroeconomy, industry statistics, nearly 300 foreign enterprises' strategies, and market dynamics [18]. The internal information network has a special interface for each branch to upload files so that the headquarters can keep abreast of local conditions. This method ensures the timeliness of competitive intelligence.

4.2 Competitor's Approach

Know the enemy, know yourself, and fight a hundred battles without danger of defeat. Intelligence acquisition of competitors is an important part of enterprise scientific decision-making.

Microsoft corporation has an intelligence department, the intelligence specialist through the relevant links at any time to check the macroeconomy, industry statistics, nearly 300 foreign enterprises' strategies, and market dynamics [19].

In addition, intelligence officers cover a wide range of people. American development experts and marketing experts might become intelligence specialists. They are very sensitive, and various occasions such as exhibitions, seminars, and manufacturer promotions become important opportunities for them to obtain information. This oriented approach makes up for the lack of in-depth intelligence. Timely and accurate capture of the opponent intelligence, for the company to formulate development strategy to provide an effective reference.

4.3 Social Environmental Law

In the era of the Internet and big data, enterprises need to work closely with the government to obtain comprehensive and authoritative macro intelligence information. At the same time, a perfect big data intelligence collection, analysis, and feedback system should be established to make scientific decisions through effective data sorting and analysis.

Microsoft has about 70% of the intelligence obtained from the Internet [20]. Keywords customized from the network industry environment, rivals to partners, terminal market dynamics, and intelligence will be automatically transmitted to the established linkages. At the same time, online intelligence is intercepted and regularly updated, sometimes even increased or decreased. In order to keep intelligence accurate, Microsoft has strict requirements on its partners and often conducts accuracy tests on intelligence locked on the Internet. This is beneficial to improving the effectiveness and accuracy of competitive intelligence.

4.4 To Summarize

Microsoft corporation has constructed a strict and efficient intelligence network, which combines attack and defense to promote the cooperation of Microsoft's branches around the world and share development achievements [21]. Through the above analysis, we can obtain the following enlightenment.

First, information acquisition has a strong purpose and selectivity, and the way of information acquisition is mainly determined by direction and target strategy [22].

Secondly, three factors affect the successful application of intelligence in enterprise scientific decision-making: the means of obtaining intelligence, the diversified judgment of intelligence, and the participants' grasp of events. An organic combination of these factors is beneficial to improving decision-making efficiency.

Third, diversified forms of intelligence bring about diversified ways of classifying and storing information [23]. Multi-dimensional and multi-port information collection and the feedback loop can maximize the utilization of information, save labor costs, and help enterprises make scientific decisions.

5 Conclusion

Based on the literature review, taking Microsoft's competitive intelligence collection system as an example, this paper draws the following conclusions:

The channels of CI gathering can be divided into three categories: internal path, competitor approach, and social environment approach. Specifically, the source of the internal path is mainly the internal decision-making and the latest market activities of the enterprise, and its collection relies on a comprehensive internal network, a good division of labor, and an effective response to the intelligence. For the competitor approach, both the acquisition and defense of intelligence should be given enough attention, and in-depth intelligence should be obtained mainly by corporate professionals. For the social-ecological approach, due to a large amount of information, the use of technological means is necessary. In addition, enterprises should actively cooperate with the government, consulting agencies, and partners to grasp reliable macroeconomic conditions and market dynamics.

At the same time, the synchronization and reintegration of information resources within the enterprise cannot be ignored. Enterprises should establish an intelligence network to communicate with branches and departments promptly to ensure the timeliness of the information. In addition, the departments of the company should effectively participate in the re-screening and interaction of intelligence resources to realize the multi-directional flow and continuous integration of intelligence. In this way, organizations can maximize the benefits of intelligence resources and human resources and improve the efficiency and democracy of decision-making. Furthermore, the innovation of collection tools also plays an important role in the gathering of competitive intelligence, such as powerful data analysis capabilities and Internet interception capabilities.

This paper has implications from two perspectives: academic and realistic. From the academic perspective, it serves as a holistic integration of channels of CI gathering, in which the various collection channels are summarized into three categories, each with

a systematic analysis of the sources and collection method. This study also confirms the importance of internal integration to intelligence gathering. For a long time, studies have considered the collection of competitive intelligence as a professional work aimed at the external environment of the enterprise. However, based on a real case, this paper suggests that the internal systems and the integration resources within an enterprise play a considerable role in the gathering and screening of competitive intelligence. The study also has a positive practical significance for enterprise management. With globalization and the pace of technological change, a systematic CI gathering system has a positive effect on the management and decision-making process. By sorting out the main channels and methods of CI gathering, this paper provides a reference for enterprises to optimize the CI system, internal structure, and decision-making process.

While this paper reports only some existing channels for obtaining competitive intelligence, more avenues for Intelligence gathering channels are likely to come up. In addition, this paper analyzes competitive intelligence gathering as an information source for strategic decision making, no doubt that the other phases of the CI system are also important for strategic decision making, and future research can also be based on the deeper relationship between the two. Besides, the paper mainly studied the cases of Microsoft, an Internet giant, thus there may be some methodologies that do not apply to small and medium enterprises. In this regard, moderating variables such as industry category, corporate culture, company size, and firm age should be included in future studies. Emphasis will also be given to the design of quantitative intelligence-gathering tools and procedures.

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