# Encyclopedia of Knowledge Management

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## Competitive Intelligence Gathering

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#### INTRODUCTION

Knowledge management (KM) is the process through which organizational performance is improved through better management of corporate knowledge. Its goal is to improve the management of internal knowledge processes so that all information required for corporate decisions can be made available and efficiently used. Competitive intelligence (CI) is a process for gathering usable knowledge about the external business environment and turning it into the intelligence required for tactical or strategic decisions. The two are strongly connected because gathered CI has no long-term value unless an effective KM process is in place to turn the information into something usable. Although most information collected during a CI investigation is used in immediate decision making, it must be integrated into the internal knowledge systems to provide a long-term resource when companies attempt to detect trends or adapt to changes in their environments (Aware, 2004).

Both KM and CI systems are designed to enhance the information resources of an enterprise, but often target different information types and sources. While CI is concerned with gathering information from the external environment to enable the company to gain competitive advantage (Williams, 2002), most investigation into KM has focused on capturing the knowledge stored within the minds of individual employees (Nidumolu, Subramani, & Aldrich, 2001). Bagshaw (2000), Johnson (2000), Rubenfeld (2001), and Williams (2002) all focus on the use of KM for collecting, managing, and sharing internally generated knowledge.

Restricting the focus to internal data severely limits the potential of KM systems. The vast wealth of knowledge outside the traditional boundaries of the company may prove just as useful to organizations seeking a competitive advantage (Gold, Malhotra, & Segars, 2001). Fortunately, some studies indicate an awareness of the value of external information. Abramson (1999) notes that KM enables companies to create and systematically use the very best internal and external knowledge that they can obtain. Grzanka (1999) notes that KM provides a methodology to leverage and manage all knowledge, whether external or internal. Other researchers take it a step further and recognize the synergies between KM and CI. Johnson (1999) states that KM and CI are two parts of the same whole because both are designed to apply enterprise knowledge of the internal and external environment for long-term competitive advantage. KM and CI "have similar goals and are natural extensions of one another (e.g., manage information overload and timely/targeted information delivery, provide tools for data analysis, identify subject matter experts, enable collaboration)" (Meta Group, 1998). Davenport (1999) even goes so far as to take the stance that CI can be viewed as a branch or subset of KM.

A major difference between KM and CI is the much broader scope of KM compared to the more clearly focused CI: rather than applying knowledge to the entire firm and its complete set of objectives, CI focuses on defending the firm from competitive threats, while at the same time proactively working to acquire market share from competitors (Johnson, 1999). Further, while KM often falls under the purview of the information technology department, more often than not CI activities are found within strategic planning, marketing, or sales (Fuld, 1998).

While it is difficult to simplify the relationship between CI and KM (Johnson, 1999), it is important to note that the two approaches complement each other. The goal of both disciplines is to evaluate current business decisions, locate and deliver appropriate knowledge from the environment, and ultimately help to give it meaning so that decision makers better understand the options available to them (Johnson, 1999). The synergies between KM and CI indicate that greater convergence between the two approaches is inevitable.

#### BACKGROUND

Each organization has associated with it a particular context pertaining to such issues as customer attitudes, competitors' actions, regulatory patterns, and technological trends. Environmental scanning tools collect information from the environment to assist in developing strategies that help the organization formulate responses to that environment.

Environmental scanning was first defined by Aguilar (1967) as the process of gathering information about events and relationships in the organization's environment, the knowledge of which assists in planning future courses of action. It entails perceiving and interpreting both the internal and external environment with the objective of making appropriate operational, tactical, and strategic decisions that help insure the success of the firm (Elofson & Konsynski, 1991). Any organization that fails to monitor its environment in order to determine the conditions under which it must operate courts disaster (Mitroff, 1985). Identification of key economic, social, and technological issues that affect the organization, its lifecycle stages, and their relevance to each other helps managers allocate attention and resources to them (McCann & Gomez-Mejia, 1992). Scanning is a fundamental, early step in the chain of perceptions and actions that permit an organization to adapt to its environment (Hambrick, 1981).

Aguilar (1967) stresses the close relationship between strategic planning and scanning, noting that scanning is the acquisition of external strategic information that is useful for making decisions about company strategy and long-term plans. The objectives of environmental scanning vary with the business strategy employed by an organization (Jennings & Lumpkin, 1992). Differentiation strategy is associated with a systematic scanning activity to alert the organization to market opportunities as well as indications of innovations (Miller, 1989). Cost leadership strategy involves scanning for more efficient methods of production as well as innovations made by the competition (Miller, 1989). Reactive strategy is associated with scanning the external environment for problems (Ansoff, 1975), while low-cost strategy directs the scanning effort toward solving specific problems regarding product cost (Hrebiniak & Joyce, 1985). An organization's strategy determines whether environmental scanning is used to search for opportunities or to forewarn of threats (Snyder, 1981). The goals of an organization are continuously evolving, and as they are changing, so too are the pertinent threats and opportunities that must be monitored (Elofson & Konsynski, 1991). Environmental scanning systems are dependent on the identification of pertinent factors, both external and internal, to be scanned.

Many tools can be used to perform environmental scanning, including CI, business intelligence, knowledge acquisition, knowledge discovery, knowledge harvesting, enumerative description, knowledge engineering, information retrieval, document management, and enterprise information portals. This article focuses on the approach most widely used in business, CI.

#### MAIN FOCUS OF THE ARTICLE

Miller (2001) defines CI as the process of monitoring the competitive environment. This competitive environment includes but is not limited to competitors, customers, suppliers, technology, political and legal arenas, and social and cultural changes. Kahaner (1996) explains that CI is a systematic and ethical program for gathering, analyzing, and managing information about competitors' activities and general business trends that can affect a company's plans, decisions, and operations. Note the distinction of CI as an ethical process, unlike business espionage, which acquires information by illegal means like hacking (Malhotra, 1996). CI enables management to make informed decisions about a wide variety of tactical and strategic issues. Outcomes from a formal CI program should enable strategists to anticipate changes in the company's marketplace and actions of its competitors. CI should also uncover the existence of new competitors, new technologies, products, laws, or regulations that will have an effect on business. CI can help a business learn from the successes and failures of other enterprises, make better mergers and acquisitions, and enter new business arenas. From an internal viewpoint, CI can help a company assess its own business practices from a more open and objective perspective while helping implement new management tools (Kahaner, 1996).

The CI process is becoming even more important as the pace of business both at home and abroad continues to accelerate. CI also helps managers deal with the rapid change in the political, legal, and technical environments (Kahaner, 1996). A key goal of CI is to provide early warnings or timely alerts that allow decision makers to proactively position the company to maintain or gain a competitive advantage. Management must be able to detect changes in the market early enough to place the company in the most strategically advantageous position possible. A key feature of CI is the analysis process, which organizes and interprets raw data to uncover underlying patterns, trends, and interrelationships, thereby converting it into actionable intelligence. Data thus transformed can be applied to the analytical tasks and decision making that form the basis for strategic management (Miller, 2001).

Lackman, Saban, and Lanasa (2000) propose a model of the CI process that consists of several processes, including Identify Users, Assess Intelligence Needs, Identify Sources of Information, Gather Information, Interpret Information, and Communicate Intelligence. In the Interpret Information step, they propose an Intelligence Library that is closely related to KM since the Library serves as a repository for intelligence and secondary data with a user-friendly retrieval system designed to encourage its use. The inputs into the Library could come from CI departments and their activities or from more traditional KM activities designed to capture and disseminate tacit knowledge as explicit knowledge regardless of the organizational structure of the business. This model of CI thus incorporates features of KM.

The classic intelligence cycle has four stages-collection, processing, analysis/production, and dissemination-which is closely mirrored by knowledge management's four-step cycle of capture, transformation, communication, and utilization (Nauth, 1999). Kahaner (1996) describes a four-step CI cycle consisting of planning and direction, collection activities, analysis, and dissemination, while Miller (2001) adds feedback as a fifth step. Planning and direction requires working with decision makers to discover and hone their intelligence needs. Based on the vast array of directions that CI can take as illustrated above, this is one of the most difficult and ill-defined tasks, especially for managers not accustomed to using the CI process. Collection activities involve the legal and ethical gathering of intelligence from various public and private sources, both internal and external to the company. Two major approaches used in information collection are responding to ad hoc requests and continuously monitoring key intelligence areas. Proactive requests can be answered with available data, perhaps in a KM system, while reactive requests require a search process to uncover pertinent intelligence (Breeding, 2000). Several resources can be searched, including pay-for-use services such as Dow Jones, Hoover's Company Data Bank, Standards & Poor's, NewsEdge, as well as free information sources such as company Web sites, SEC's Edgar system, and corporateinformation.com (Breeding, 2000).

There are also specialized databases from third-party vendors (Dialog, Lexus/Nexus), press release and newsfeed collections (WavePhore's Newscast Access or NewsEdge's NewsObjects), product literature, competitor Web sites, archived design specifications, company profiles and financial statements, and numerous other sources that are databased, searchable, and categorized (Johnson, 1998). Monitoring key intelligence areas falls under the purview of environmental scanning. While many of the same information sources can be used, this approach allows critical intelligence to be pushed directly to the desktops of those decision makers who most need it without their having to do any searching through newspapers, Web sites, or other resources on their own, and it heightens awareness about the competition, making users aware of the competition in many of their day-to-day activities (Breeding, 2000). Analysis involves interpreting data and compiling recommended actions. The analysis, like the collection process, is driven by the planning stage to answer specific questions

or concerns that managers are dealing with at the time. These questions or concerns will range from very tactical to very strategic in nature.

Dissemination involves presenting the findings to decision makers. This again is directed by the planning stage where the question of how to disseminate the findings is determined and agreed to prior to the start of the project. It is important to insure that decision makers get the types of reports that they want, rather than what the CI personnel find most interesting. That means that if the decision maker wants a simple, directto-the-point report rather than a long, involved presentation, then he/she should get it. Feedback involves soliciting responses from decision makers about the quality, timeliness, and accuracy of the intelligence and their needs for continued intelligence reports. Whether we are contemplating the classic intelligence cycle, the knowledge management cycle, or the competitive intelligence cycle, the cycle is a circular, iterative process. Note that unlike internal knowledge management, CI's focus is on both internal and external events and trends, with a strong focus on competitors' and others' activities and likely intentions.

While all phases of the CI cycle may be equally critical, planning and direction—and the needs identification process involved therein—are pivotal. No information-gathering approach can be successful unless it is provided with an adequate specification of the variables that need to be monitored. A great deal of research has been devoted to studying *how* to look for information, while overlooking the equally vital issue of *what* information to look for. A recent review of software marketed toward the online intelligence community clearly illustrates that the ability of most software to determine *what* information to gather is clearly deficient (Fuld, 2001).

Many tools for gathering intelligence are profile based, designed to sift information through a profile of intelligence needs (Berghel, 1997). These profiles are often made up of a set of topics that describe specific interests (Foltz & Dumais, 1992), and are developed early in the CI cycle and modified throughout the course of the intelligence operations. Each topic can be expressed in terms of a keyword or concept. The primary weakness of this type of approach is its reliance on the completeness and accuracy of a one-dimensional or single-class profile. If the profile is insufficient in any way, the effectiveness of the filtering process is seriously diminished. For example, if the profile is too narrow in scope or omits critical intelligence topics, the competitive intelligence process will overlook much of the pertinent available information, leaving managers unaware of vital facts. Thus, decision makers may consistently make crucial decisions based on faulty information. If, on the other hand, the profile is too broad or general, the intelligence gathering process may be capturing irrelevant information, overwhelming the decision makers and convincing them that the CI process is ineffective. In short, the profile of information needs is the pivotal element in determining how well the CI process performs.

Needs identification requires a structured approach that takes into account multiple dimensions, or classes. Such an approach helps to insure that the process of identifying an organization's intelligence needs considers each of the categories that make up those needs. Stadnyk and Kass (1992) propose the development of knowledge bases of description categories over which individual models of interests can be defined. Herring (1999) proposes the concept of Key Intelligence Topics (KITs) to help identify intelligence requirements by considering strategic decisions, early-warning topics, and key players. Based on Herring's prior work with both the government and Motorola, the KITs process helps management to identify and define critical intelligence needs. CI programs often operate under the direction of upper management, which generally delineates the objectives or needs that CI must attempt to meet.

However, CI activity should not be restricted to the upper management level because it can assist all organizational levels. Further, CI needs vary by company and by project. Therefore, an analysis of the information needs of an enterprise requires consideration of the types of information required by decision makers at all levels of management. Many management models, including Anthony's Managerial Pyramid (1965), represent organizations as having various levels of decision making—operational control, tactical control, and strategic planning—each of which has different information needs.

The multi-class interest profile (M-CLIP), first proposed in 2001 (Parker & Nitse, 2001), addresses these shortcomings. It provides a strategically aligned framework based on the various types of information needs in order to insure that key items within each critical intelligence area are accounted for. Thorough needs identification guided by a structured, multi-dimensional framework increases the likelihood of a successful CI effort. The classes that make up the M-CLIP were derived by taking into consideration such information-intensive activities as project management, strategic planning, competitive analysis, and environmental analysis, and then acknowledging the correlation between the information needs of those activities and the decision-making levels described in the Managerial Pyramid. The project class consists of interest areas intended to target the information necessary for the execution of current projects, including both long-term activities such as tracking the daily or weekly actions of an overseas competitor, as well as shorter-term specialized projects such as the investigation of a possible acquisition or alliance prospect. The enterprise class includes internal and external interest areas, such as technological factors, investment issues, corporate news, operating expenses, and so forth, that are necessary for tactical decision making. The industry class targets information needs that stem from the type of industry or organization performing the investigation and helps the CI process supply intelligence related to the general external environment of the company.

The M-CLIP spans all decision-making levels and provides a structured, expanded set of intelligence topics. The M-CLIP system also provides specialized templates to aid in the identification of critical intelligence needs, an expansion mechanism to help insure that no key concepts are overlooked, and an adaptive mechanism to handle the removal of unproductive topics automatically.

A complete set of intelligence topics encompasses a wide spectrum of corporate interests, thus providing the means to access a greater percentage of relevant online information. A more complete information set makes the analysis and dissemination efforts more likely to succeed, insuring that the CI process provides decision makers with a more complete set of information, enabling them to assess domestic and international issues in an efficient, accurate, and timely manner.

#### FUTURE TRENDS

As noted above, the KM and CI functions complement each other. There is a great deal of overlap between the two, and KM systems will become more robust as KM workers recognize the benefits of adjusting their focus to include not only internal, but also external sources of information. At the same time, CI efforts will benefit by making greater use of KM. One statistic indicates that as much as 80% of the competitive knowledge that a firm requires to compete successfully is already present somewhere within the company and can be gathered by probing internal sources (Johnson, 2001). Competitive intelligence should be an integral part of knowledge management, and vice versa. Knowledge management can be improved by actively gathering competitive intelligence, and competitive intelligence can be improved by accessing the internal information gathered by knowledge management. The convergence of these two disciplines can be realized only when strategic planners are able to define more completely the relationships between CI and KM, and their specific role in delivering decision support (Johnson, 1998).

### CONCLUSION

Effective CI requires an effective KM process. Without KM, gathered CI information is useful for only a brief period. CI data is highly time sensitive and is often useless unless acted upon immediately (Johnson, 1998). However, if CI is integrated into the internal knowledge processes, it will begin to have some long-term value to a firm (Aware, 2004). This integration will enable companies to detect trends and markets in which competitors act, as well as to identify latent and parallel competitors. This intelligence can then be of long-term use to decision makers at all levels (Johnson, 1998).

One measure of organizational effectiveness is the creation and continuance of a measurable competitive advantage (Gupta & McDaniel, 2002). KM and CI share that common goal, and a convergence of these two approaches will enable organizations to use the synergies between the two to take advantage of changes in both the internal and external environment.

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#### **KEY TERMS**

**Competitive Intelligence:** A systematic and ethical program for gathering, analyzing, and managing environmental information that can affect a company's plans, decisions, and operations (http://www.scip.org/ci/).

**Environmental Scanning:** The systematic gathering of information in order to reduce the randomness of the information flow into the organization, and to provide early warnings of changing conditions in both the external and internal environment.

**Intelligence Needs:** The topics that an organization must monitor in order to stay competitive.

**Key Intelligence Topics (KITs):** A process for identifying intelligence requirements by considering strategic decisions, early-warning topics, and key players.

**M-CLIP:** A structured, expanded profile of information needs, used in conjunction with specialized templates to aid in the identification of critical intelligence needs, an expansion mechanism to help insure that no key concepts are overlooked, and an adaptive mechanism to remove ineffective topics.

**Needs Identification:** The process of determining which topics an organization must monitor in order to attain or maintain a competitive advantage.

**Profile/User Profile:** A set of keywords or concepts describing a user or organization's intelligence needs through which profile-based intelligence-gathering tools filter information.