INFORMATION MANAGEMENT: STRATEGY, SYSTEMS, AND TECHNOLOGY

CIO’S PERSPECTIVE ON COMPETITIVE INTELLIGENCE

Richard G. Vedder and C. Stephen Guynes

INTRODUCTION
Competitive intelligence (CI) has become a very important source of information for business planning and other activities. CI is generally considered to be the set of legal and ethical methods used to gather information about competitor activities from public and private sources. CI provides information about the present and future behavior of competitors, suppliers, customers, technologies, acquisitions, markets, and the general business environment. Many companies, such as General Motors, Eastman Kodak, Motorola, IBM, Citicorp, Proctor and Gamble, and J.C. Penney, have organized formal CI units.

This article discusses the results of a recent survey of CIOs and CEOs on competitive intelligence practices in their firms. The survey requested all respondents to characterize their firms with respect to industry type, company size in annual revenue, and the extent of non-U.S. operations. The project received a total of 137 valid cases from companies representing 17 industry classifications. Manufacturing companies responded most often, followed by financial/insurance and consumer products.

PAYOFF IDEA
Competitive intelligence (CI) has become a very important source of information for business planning and other activities because it provides information about the present and future behavior of competitors, suppliers, customers, technologies, acquisitions, markets, and the general business environment. This article discusses the results of a recent survey of CIOs and CEOs on competitive intelligence practices in their firms. The authors anticipate an increase in competitive intelligence activities, which will require the increased use of IT in those activities. They suggest that readers be aware that this spiraling situation is likely to place increasing demands on the IT function and the CIO.
or services. The median company size in terms of annual sales revenue was $2 billion. Slightly more than half of the responding firms reported that less than ten percent of their annual revenues come from outside the United States.

The survey collected information on general attitudes and opinions about CI, the nature of CI practices, and perceptions about the IT function. The return sample comprised 55 CEOs and 82 CIOs. Of the 82 CIO respondents, 53 reported CI activity in their organization, while 29 reported no business intelligence gathering activity in their firms.

**COMPETITIVE INTELLIGENCE AND IT**

Managing IT in an era of dynamically changing computer technologies demands credible, reliable information. This is particularly important because information technologies can have significant, long-term effects, forcing a careful trade-off between benefits and costs. Applied Materials’ investment in a seven-person CI research unit in Japan was a major factor behind the company becoming one of the major players in chip manufacturing.2

Ashton, Johnson, and Stacey3 believe that CI in the form of tracking science and technology developments is very helpful to organizations for several reasons. It gives direction to research and development (R&D) programs or supports a decision to terminate a particular R&D program. It also helps firms identify opportunities for investing in or commercializing a new technology and helps incorporate new technologies into their own products. They close by stating that such tracking helps identify potential technology-based or augmented threats to market share and identify possible partners for collaborative R&D efforts.

CI can also play a role in the development and operation of strategic information systems (SIS). Cerveny, Pegels, and Sanders4 believe that one of IT’s contributions to SIS is identifying new business opportunities and horizons. Their job description of an SIS project manager includes investigating inter-company relationships and competitive forces, identifying potential IT applications that could result in new or differentiated products or services, and monitoring emergent IT for better problem-solving or competitive-advantage tools. All these activities can benefit from the use of CI.5 IT plays a significant role in organizationwide CI processes. Unfortunately, some IT units have been slow to recognize the importance of CI-oriented applications.6

Finally, the security of internal corporate information is under threat. Business espionage is an obvious danger but corporate alliances and other agreements for information sharing can also raise difficulties. Competitive intelligence tools and methods can be useful in dealing effectively with these problems.7
OBJECTIVES OF THE STUDY
The objective of the survey was to investigate the current extent of attitudes and practices among CIOs and CEOs relative to CI activities. The authors developed questions involving attitudes toward CI, CI practices, and attitudes toward IT to see if any of these affected the assessment of CI value.

The survey’s sample was drawn from firms nationwide representing 17 industry categories. These sources included Fortune's list of 500 companies, Computerworld's Premier 100 companies, and InformationWeek's list of 500 companies, considered by IW to be the major users of IT. The goal in the sample selection was to obtain responses from as many large companies nationwide as possible to represent a cross-section of different industries. Based on the sources used to derive the sample, the study participants were likely to be larger in size and more progressive IT users than most other companies.

The individuals comprising the total sample held the titles of Chief Information Officer (CIO) or equivalent, or Chief Executive Officer (CEO) or equivalent. The survey approach provided the ability to sample a large population of top-level managers in many diverse companies. This study provides information about a topic important to the IT executive and to the IT research community.

RESULTS OF THE STUDY
Attitudes toward Competitive Intelligence
Exhibit 1 shows the CEOs' and CIOs' perceived importance of CI. All of the participants evaluated CI's importance using a five-point Likert scale. Most respondents believed CI to be at least somewhat important. The CIOs and CEOs who reported CI activity considered CI to be very important. Values ranged from “extremely important” (4) to “not important” (1). The question was asked of all respondents.

The participants were asked their opinions concerning the nature and relevance of CI. Most respondents believed that spending time and resources on CI activities is appropriate and that their firm's IT function

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Standard Deviation</th>
</tr>
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<tbody>
<tr>
<td>CI-active CEOs</td>
<td>3.21</td>
<td>0.54</td>
</tr>
<tr>
<td>CI-active CIOs</td>
<td>2.96</td>
<td>0.57</td>
</tr>
<tr>
<td>Non-active CEOs</td>
<td>2.75</td>
<td>0.50</td>
</tr>
<tr>
<td>Non-active CIOs</td>
<td>2.53</td>
<td>0.69</td>
</tr>
</tbody>
</table>
could benefit from using CI. Many respondents questioned whether publicly available sources are sufficient for gathering CI, and many questioned whether CI is more useful for defensive than offensive purposes. Most believed CI to be more useful in supporting the decision-making process than in defending decisions already made. Most believed their IT function needs CI as an input to its planning activities. CEOs tended to be more positive about CI’s value than CIOs, especially regarding the use of CI for the IT function. In contrast to the respondents from CI-active firms, non-CI-active respondents more strongly believed in the value of private CI resources.

All CIOs and CEOs who did not report CI activity were asked why they did not have an active CI program. The major reasons given were that they did not have the budget or the resources needed for CI and that they had never given serious thought to using CI. Other reasons were that they were familiar with CI but believed that the costs would exceed the benefits, or that they were concerned about possible legal or ethical effects, or both. An interesting observation is that previous bad experience with CI was not a significant reason given by the respondents.

The questionnaire asked all companies reporting CI activity to explain why their firm was active. The strongest beliefs reported were that CI helps them identify business threats and opportunities and CI is useful in developing, implementing, or revising strategies. They also stated that CI helps them better understand their firm’s performance relative to competitors, but the use of CI by competitors was not a major factor in their decision to use it. Exhibit 2 summarizes the results.

### COMPETITIVE INTELLIGENCE PRACTICES
This section measured the nature and extent of current CI practices. Exhibit 3 shows the result of asking all CIOs and CEOs reporting CI activity to describe their current administrative structure for conducting CI. The majority of respondents did not have a formal organizational unit devoted to CI activities. Three-fourths were evenly split between having employees specifically responsible for a regular ongoing CI effort, or
operating CI on an ad hoc project-oriented basis. Approximately 13 percent of the respondents stated that their CI efforts were totally informal.

Exhibit 4 shows the perceived effectiveness of a firm’s CI effort. The questionnaire asked all CEOs reporting CI activity to evaluate the effectiveness of their company’s involvement with CI. A majority (53 percent) rate their CI effort as “Good,” with “Fair” receiving more than a third of the remaining votes. Only two percent indicated that their firm’s CI activity was ineffective.

The survey asked all CEOs reporting CI activity to indicate what change they anticipated in their company’s CI effort over the next two to three years. Exhibit 5 shows that approximately 14 percent believed that their CI effort would increase significantly, that almost 75 percent stated that their CI effort will show some increase, and that approximately 10 percent anticipated that their firm’s CI effort would stay at the same level. It is interesting to note that no firm planned a decrease in CI effort.

The questionnaire asked all CEOs and CIOs not reporting CI activity to estimate what their future CI effort might be from an administrative viewpoint. The most common response favored an ad hoc or project-oriented approach. The second most common response favored a totally informal structure. The results are presented in Exhibit 6.

The questionnaire asked all CIOs reporting CI activity to indicate the degree of IT’s involvement with the overall CI effort within their companies. Exhibit 7 presents the results of that question. Just over 43 percent of the...
respondents reported moderate to average activity, as compared to other company functions or departments, and 30 percent reported less activity when compared to other departments. Nine percent responded that the IT function rarely plays the leadership role for CI activity within a firm,
and only 15 percent of the respondents indicated that IT had a heavy involvement in the firm’s overall CI effort.

The questionnaire asked all CIOs reporting CI activity to allocate that effort between supporting their own function’s CI needs and supporting the CI needs elsewhere within the firm. Although the assigned percentages varied considerably, the CIOs indicated that approximately 57 percent of the total effort supported the CI needs of other business functions or departments, and 43 percent of the effort supported the needs of the IT function. Exhibit 8 presents the results.

Exhibit 9 presents the results of asking all CIOs reporting CI activity to indicate what business functions the IT unit supported with CI. Respondents could select more than one answer. Senior management and marketing functions received the most support, followed by corporate and/or division planning. Manufacturing, finance, R&D, and legal functions each received a substantial amount of IT support.

Exhibit 10 shows the CIOs’ descriptions of the nature of the intelligence support that their function provided. Nearly half the respondents indicated that the primary form of support was giving technical advice for evaluating hardware and/or software alternatives. Developing specific CI applications was far less common. The respondents were allowed to select more than one answer.

Exhibit 11 shows the breakdown of sources of information used by all CIOs who reported CI activity. The respondents were asked to assign
percentages that totaled 100 percent. Published information was cited most often (39 percent), and the use of electronic databases was cited least often (11.3 percent).

PERCEPTIONS ABOUT THE IT FUNCTION

The third part of the questionnaire explored CEO and CIO attitudes in general about the IT function, to see if there might be any relationship between these beliefs and the implementation and perceived value of a CI effort. The questionnaire asked all CEOs and CIOs to describe the relationship between the firm’s IT function and top management. Little difference exists between CEO and CIO responses. A small majority saw the IT function as being a partner in the firm’s strategic planning efforts, but it can be assumed that both the strategic partner and cost center dimensions of this relationship are important. Exhibit 12 presented the findings.

The questionnaire asked all CEOs and CIOs to evaluate the effectiveness of the company’s IT functions. Exhibit 13 illustrates that there is a difference of opinion on this issue. Nearly 42 percent of the CIOs perceived the IT function’s effectiveness as being among the best in their industry, whereas only slightly less than 24 percent of the CEOs perceived
CIO’S PERSPECTIVE ON COMPETITIVE INTELLIGENCE

**EXHIBIT 12 — Perceived Relationship between IT Function and Top Management**

<table>
<thead>
<tr>
<th>CEO Percentage</th>
<th>CIO Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT function as a partner in the firm’s strategic planning efforts</td>
<td>55.8</td>
</tr>
<tr>
<td>IT function as a cost center</td>
<td>44.2</td>
</tr>
</tbody>
</table>

**EXHIBIT 13 — Perceived Effectiveness of Firm’s IT Function**

<table>
<thead>
<tr>
<th>CEO Percentage</th>
<th>CIO Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better than average</td>
<td>47.3</td>
</tr>
<tr>
<td>Among the best in our industry</td>
<td>23.6</td>
</tr>
<tr>
<td>Average</td>
<td>18.2</td>
</tr>
<tr>
<td>Below average</td>
<td>7.3</td>
</tr>
<tr>
<td>Ranks in the top tier of all industries, all regions</td>
<td>3.6</td>
</tr>
</tbody>
</table>

**EXHIBIT 14 — Perceived Roles of the CIO**

<table>
<thead>
<tr>
<th>CEO Average</th>
<th>SD</th>
<th>CIO Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business person</td>
<td>37.1</td>
<td>12.9</td>
<td>40.7</td>
</tr>
<tr>
<td>Technologist</td>
<td>25.4</td>
<td>16.5</td>
<td>21.7</td>
</tr>
<tr>
<td>Change agent</td>
<td>23.4</td>
<td>13.8</td>
<td>27.0</td>
</tr>
<tr>
<td>Administrator</td>
<td>12.6</td>
<td>10.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Other</td>
<td>1.5</td>
<td>4.5</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Information technology’s effectiveness as being among the best. Approximately 47 percent of the CEOs perceived the IT function’s effectiveness as being better than average, while only 33 percent of the CIOs saw it the same way. Few CEOs and CIOs would say IT effectiveness is below average; 7.3 percent of the CEOs and 2.4 percent of the CIOs indicated that view.

Exhibit 14 shows the perceived roles of the firm’s CIO. The questionnaire asked all CEOs and CIOs to describe the CIO’s role. The respondents assigned percentages to indicate an ideal mix, adding up to 100 percent. “Business person” topped the list; both CEOs and CIOs indicated that the largest percentage of the role fell into that category. In addition, the CEOs stated that the CIO was 25.4 percent “Technologist,”
23.4 percent “Change agent,” 12.6 percent “Administrator,” and 1.5 percent miscellaneous. The CIOs stated that the CIO was 21.7 percent “Technologist,” 27 percent change agent, 9.7 percent “Administrator,” and 0.7 percent “Other.”

CONCLUDING REMARKS
Almost all CEOs reported some CI activity in their organizations. Further, 75 percent of them anticipated some increase in those activities. They view the CI activity as an important information source for identifying business threats and opportunities. They see CI as being useful in developing, implementing, and revising business strategies. However, only about eight percent of the firms report having an organizational unit devoted to CI. This disparity would seem to be goal incongruent. If the CI activity is important, then it would make sense that CI efforts would have more resources devoted to them than the study identified. It may be that the rate of return on investment for CI activities is difficult to quantify and therefore justify. Consequently, it may be difficult for management to support the costs associated with CI efforts.

Over half of the role of the CIO is viewed as a technologist or change agent for technology. Although the role of CIO is viewed as being a technologist, over half of the respondents also view the IT function as being a partner in the strategic planning process. Hence, the CIO is expected to focus on technical issues while still maintaining a strategic perspective. While the majority of IT support for CI activities was for senior management or marketing, that support was one of technical advice rather than active involvement in the development of CI systems. The role of the CIO is so heavily tied to technology that some may overlook the potential value the CIO brings to an organization, that of being a specialist in information. For example, very few of the CIOs (15 percent) reported a heavy involvement of IT in CI activities. However, over half of them believe that the IT function should have more involvement in CI efforts. CIOs could provide the same leadership role in CI activities that they do in database development, data warehousing, and data mining functions. This aspect of CI has yet to be pursued, as evidenced by the small usage of online databases used in CI functions.

It appears that there is going to be a continuing problem if the demand for CI grows as reported by the respondents. If that anticipated increase in CI activities occurs, it is probable that the use of IT in those activities will need to grow even more in the future. This spiraling situation is likely to place increasing demands on the IT function and on the CIO.
References


Acknowledgment

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