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Generating Competitive Intelligence in Organizations

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Abstract

Marketing strategy begins with customer and competitive intelligence. However, in sharp contrast to customer intelligence, there is little research on how competitive intelligence (CI) is actually generated within an organization. The absence of this knowledge makes it difficult to identify ways to improve the CI generation process. Drawing on both depth interviews with full-time personnel who conduct competitive intelligence and academic literature in related fields, the authors derive a novel conceptual framework that describes three interdependent phases of the competitive intelligence generation process: (1) organizing for competitive intelligence, (2) searching for information, and (3) sense-making. Dimensions of efficacy at each phase are also identified, and they are posited to be influenced by factors pertaining to: (1) the intelligence network, (2) the business environment, (3) the information environment, and (4) analyst characteristics. This framework departs from the existing literature by identifying core components of the competitive intelligence generation process, highlighting its iterative nature, and identifying variables germane to its success. The emergent framework's implications for managing the competitive intelligence generation process are discussed and future research directions are suggested.

Keywords: competitive intelligence, competition

Contemporary writings in marketing stress the importance of competitive intelligence in shaping strategic marketing decisions (e.g., Dickson, 1992; Kotler, 1994) and building market-oriented organizations (Day, 1990; Jaworski and Kohli, 1993; Narver and Slater, 1990). Given its integral role in decisions central to marketing and the firm, it is perhaps not surprising that issues surrounding competitive intelligence (CI) have recently been brought into sharp focus. For example, the research priorities of the *Marketing Science Institute* and a mini-conference of marketing scholars (Dickson, Urbany and Lehmann, 1994) have focused squarely on competitor intelligence.[1]

Given its potential strategic benefits, however, surprisingly little research as focused on the *process* of generating competitive intelligence and the factors that make the process more or less *effective*. Existing work views the generation of CI as a sequential process of

information planning, data collection, and analysis (e.g. Kotler, 1994, p. 233; Porter, 1980, Chapter 3). This approach parallels traditional market research where problems are comparatively more structured and problem-focused. Though useful, this view may not adequately characterize the less structured, continuous nature of how CI is actually generated within organizations.[2] This is particularly true since current research on competitive intelligence is often not grounded in observations from actual practice (for an exception, see Ghoshal and Westney, 1991).

By its focus on CI as a simple data-gathering and reduction process, the sequential perspective masks organizational, social network, and individual-level factors that influence the intelligence generation process. Understanding the impact of these factors will ultimately benefit managers who are interested in improving both the effectiveness and efficiency of the competitive intelligence gathering process. As Day (1991, p. 1) notes "an understanding of how organizations become well-educated requires a more expansive view of learning than simply [how they] take in information."

Understanding and improving the CI generation process also has considerable practical significance. First, while many organizations (e.g., Phillips Petroleum, PPG Industries) continue to have formal CI units with dedicated personnel (e.g., a Director of Competitor Intelligence and associated staff personnel), a number of well-regarded organizations (e.g., Hewlett-Packard) have disbanded their formal CI unites. Although speculative, these decisions may be tied to the organizations' failure to understand the process of generating CI and the factors that make it more or less effective. Second, understanding CI and factors that enhance its effectiveness are important since firms that do engage in CI activities are vitally concerned about the utility of their competitive intelligence output (e.g., Colmenares, 1992; Kahaner, 1997).

The purpose of our article is to develop an empirically grounded conceptual framework that (1) delineates and describes aspects of the CI generation process, (2) identifies dimensions along which the effectiveness of the process can be judged, and (3) identifies factors that influence these dimensions of efficacy. Our framework is derived from qualitative data provided by analysts charged with the responsibility of generating CI. This "field perspective" is complemented by a broad, multidisciplinary literature base that relates managerial insights with prior academic work. The CI generation process that emerges from these combined domains reveals a richer and more complex view of CI generation process can be improved. It further articulates a domain for CI that informs and directs future research.

In the next section we review the research design, field data collection, and literature base used in the study. In subsequent sections we use field notes and prior research to explore the nature of the CI generation process. We also describe factors that help or hinder the process. Managerial implications of the proposed framework and a research agenda are discussed in the final section.

Research method

Our objective is to develop a conceptual framework of the CI generation process that articulates (1) three phases of the CI generation process, (2) dimensions of CI efficacy

at each phase, and (3) factors affecting dimensions of CI efficacy. Because little attention has been given in previous research to how CI is actually conducted, it was important to ground the framework in CI (not market research) activities conducted by analysts in the field. Hence, our intent was to develop grounded theory (Glaser and Strauss, 1967) of the CI generation process, using field insights as part of our effort. This qualitative approach is comparable to "framework-building" articles that characterized early work in the delivery of service quality (Zeithaml, Berry and Parasuraman, 1988), market orientation (Kohli and Jaworski, 1990), and socially responsive organizational buying (Drumwright, 1994).

Field Research

Sample

The field research consisted of in-depth interviews with managers who formally engage in CI. Because the purpose of the research was to build a framework, it was important to tap a wide range of experiences and perspectives in the course of data collection. We therefore identified a Fortune 50 corporation that contained a number of business groups, each of which engage in CI. The major business groups ranged from stable commodity suppliers to loosely structured, evolving industries. Each produced a minimum of $1 billion a year is sales. The "subdivisions" of these groups were akin to strategic business units, with different environments, competitive pressures, and CI needs and priorities. We used a modified "theoretical" sampling plan, interviewing competitive intelligence personnel representing these groups (see Glaser and Strauss, 1967). Thirty-eight analysts were selected as interviewees based on their full-time or part-time experience with competitive intelligence. The interviews were conducted over a four month period. The number of analysts sample (N = 38) is larger than previous qualitative studies on the subject.[3]

Data Collection

To focus on the topics of interest (i.e., the CI process, dimensions of CI efficacy, and factors affecting CI efficacy) and to avoid being overwhelmed by extraneous data (see Mintzberg, 1979), we developed an (open-ended) interview guide which centered on a few major themes: (1) the meaning respondents ascribed to the term business/ competitive intelligence, (2), a description of the CI activity itself (e.g., information collection, analysis), (3) problems encountered in executing the process, and (4) the impact of the activity on the organization.

Each interview lasted between 35 and 120 minutes. All responses were audiotaped unless the interviewee requested otherwise (N = 1). Audiotaped interviews were transcribed to facilitate date analysis. A small number of interviews (N = 3) did not lend themselves to tape recording (e.g., half the interview was in the office, and the other half was in a local restaurant), and in a few cases the recording was not successful (e.g., the audiotape malfunctioned or the interviewee's voice was only

partially recorded (N = 4). Therefore, of the total set of 38 interviewees, 30 responses were tape recorded.

As recommended by Van Maanen (1988), field notes involving both observation and analysis were taken during and after the interviews. Such notes were important to (1) ensure data completeness for the interviews that could not be tape recorded, (2) solidify and confirm the main ideas expressed in the interview, (3) note verbal as well as nonverbal cues, and (4) record related ideas and insights triggered by the interview, including academic literature germane to the discussion.

Field Notes and Database

The resultant field database consisted of: (1) notes from interviews totaling 285 handwritten pages, (2) an average of 12 questions asked of each interviewee, and (3) a total of 384 single-spaced typewritten pages of transcripts for the usable audiotaped interviews, with an average length of 14 pages and a range from 7 to 25 pages.

Enfolding Literature

Eisenhardt (1989) holds that an important part of theory building is comparing emergent concepts with the literature (i.e., enfolding literature). Hence, literature from diverse sources was used to complement the fieldwork. Previous research directly related to competitive intelligence is reported in the marketing and strategic planning literatures. For example, research in the marketing literature addresses competitive intelligence as an integral part of building market-oriented organizations (e.g., Kohli and Jaworski, 1990). The strategic planning literature focuses on the development of CI techniques (e.g., Fahey, King and Narayanan, 1981), the search process (e.g., Aguilar, 1967), and external information sources (e.g., Keegan, 1974). These literatures provide insights both consistent with and complementary to our field research. Additionally, based on ideas expressed in the interviews, we draw on the parallel sociology and psychology literatures on social networks, social exchange, and individual information processing, though these literatures have not been used to inform the CI generation process to date.

Analysis Strategy

The analysis of qualitative findings in an ongoing process that begins during the first interview and is completed as the final report is written (Strauss and Corbin, 1990). The strategy taken in our study was to read the first few interviews and develop a working framework that captured the main ideas or ''themes'' expressed by interviewees (see Strauss and Corbin, 1990). Each successive set of interview notes led to the recording of quotations that corresponded to the organizing scheme and/or provided a trigger for the reorganization of the framework. Thus, the final conceptual framework emerged from an ongoing and iterative analysis of the field notes complemented by the literature base (see Figure 1).

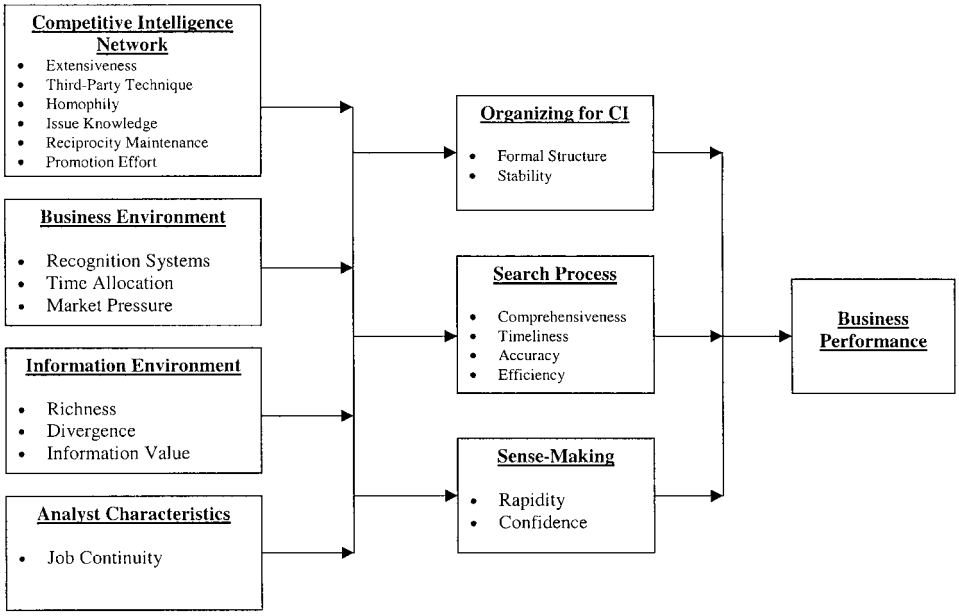

Figure 1. Framework for generating competitive intelligence.

Phases of Competitive Intelligence Generation Process

Organizing for CI

The first phase that emerged from the interviews, organizing for CI, concerned organizational arrangements or structures for CI efforts. *Formal structure* refers to a firm's organizational structure for competitive intelligence activities as evidenced by a formal delineation of staff and resources. As Fahey and King (1977) observe, some organizations have "competitive intelligence units" with a full-time director and associated staff. Other organizations have rather ad hoc CI efforts, with few resources or staff in place (see also Lenz and Engledow, 1986). As one manager noted:

> Some other [industry] companies that I am familiar with . . . have quite substantial . . . organizations within their own internal structure . . . I mean a couple dozen people who are working pretty hard at this kind of thing . . . There's varying degrees of centralization and dedication to this whole subject . . . I know our own department is pretty fragmented. [global products manager]

A related theme concerned the *stability* of the CI organization over time. Stability refers to the length of time that a particular formal intelligence structure is employed by an organization. Several participants noted that their organizations changed their intelligence

structures frequently. Fahey and King (1977) also note this issue, and in a follow-up study, Stubbart (1982) showed that a majority of the firms analyzed by Fahey and King had substantially modified their intelligence structures within the five-year follow-on period. The following statement captures this instability:

> So I did [competitive intelligence] for about one and half years, went on to another job [due to internal] structure changes. [Competitive intelligence] disappeared from our [unit]. About two years after that we decided we didn't know anything about what was happening in the marketplace again. They asked me to come back and do the job over again. I did it for about six months. They decided that they were gonna change the structure and put me in a different job so it disappeared again and now I'm back in it one more time. [manager, competitive intelligence and market research]

It is important to stress that the structuring and stability of the CI organization has not been described in either the marketing or strategy literatures. This omission is significant because our informants directly (or indirectly) suggested that the structuring and stability of the CI organization influences success in the search and sense-making phases of the CI generation process. This issue will be explored later in the paper.

Searching

The second phase of generating competitive intelligence is the search for information about competitors. Search is defined as the active exploration for information pertaining to competitors. Aguilar (1967) first proposed that information sources accessed during the search phase can be categorized into a 2×2 matrix on the basis of their locus (internal or external to the organization) and type (personal or impersonal). A key conclusion from research that used this typology (e.g., Culnan, 1983; Jain, 1984; Keegan, 1974; Kefalas and Schoderbeck, 1973) is that an analyst makes a gradual transition from exclusive reliance on impersonal external sources (i.e., 10Ks, annual reports, market analysis reports) to personal sources both inside and outside the company. The field interviews confirmed the use of a variety of sources by analysts. They also reflect the suggested transitioning from impersonal to personal sources. To illustrate,

> I just started that way [external, impersonal information sources] because I thought it was the most efficient way to get myself up to speed and get myself familiar. Recently, I've been transitioning to the direct interface with our sales reps because one of my newer assignments is the rewriting of divisional strategies. [strategic planning specialist]

> I will call on people in the company who think might have information. I talk to people in the business to understand the approach to the business. I relied upon consulting reports that had been purchased by various people, various organizations in our company. So I didn't go out and contract research, but when

> it was available, I took advantage of it. I may have called a security analyst or two. [manager, business intelligence]

Not reflected in the literature, however, is the importance placed by the analyst on proactively developing and nurturing a relatively stable *network* of personal information sources. Indeed, the informants reported devoting considerable time and effort to developing and nurturing such networks. As two managers indicated:

> Over the course of the year I've managed to build up a pretty good network and it's growing. People calling me, me calling people. I think I mentioned that I've become sort of a focal point now for a lot of those, and sometimes you think business is too good because I get asked to sit in on a lot of meetings. People from a business might come by and try to understand what a certain company is doing and although I don't know the business, we can dialogue about how its fits in the portfolio and I can learn a lot about the business while I'm giving them [help]. [manager, business intelligence]

> I guess the source that I depend upon the most is what you would call kind of an informal information network. I've been on the job long enough that people who, by one way or another, on an opportunistic basis get bits and pieces of information and informally channel it to me. [manager, business development]

In the course of the field work, we uncovered four variables that may be used to assess the efficacy of the search process: efficiency, accuracy, comprehensiveness, and timeliness. The search process is viewed as *efficient* if the time, money, and human resources used to obtain competitive information were perceived to be comparatively low. As two managers noted:

> I think it's more efficient to look at what's published than to try and communicate on a one-on-one basis with all the people that might know something in our organization. [strategic planning specialist]

> The fellow I deal with. . .understands the area. He'll ask a lot of questions so he can come up with the right thing most efficiently. [manager, business intelligence]

Accuracy refers to the validity of information obtained from search. Thus, if an automotive company planned to launch an electric car a specific target date, an accurate piece of intelligence would correctly indicate the launch date. *Comprehensiveness* reflects the extent to which all information relevant to a particular issue is collected. A search would lack comprehensiveness if the analyst knew the launch date but did not know the target market or market communications plan.

Timeliness reflects the extent to which the information is collected in time to remain useful for decision making. In the automotive situation, the company must collect

information sufficiently ahead of the target launch date to implement an intelligent response.

Sense-Making

The third phase of the CI generation process entails making sense of the data obtained through the search process.[4] Sense-making refers to the process of reaching conclusions about competitor activities. In contrast to the information-analytic perspective, the picture that emerges in the present study is one of a dynamic and complex sense-making process. Our findings suggest that this phase (1) entails creatively synthesizing and integrating disparate pieces of information into a more complete picture on an issue, (2) resembles ongoing puzzle solving rather than an activity conducted after all information has been obtained, and (3) redirects the search process on an ongoing basis.

Commenting on the incremental, disjointed, and puzzle-solving nature of the sense-making process, one manager noted:

> . . .just bits of information, single pieces of information are most likely, I believe, to be found by those people who are out there on the road – the salespeople, the development reps – those people interacting with our competitors, their picking up tidbits of information. Each tidbit might be a piece of a puzzle. And if we're really lucky, we'll get those tidbits of information and be able to put that puzzle together. [global products manager]

Puzzle solving resembles ongoing hypotheses testing. The analyst initially develops a hunch about the activities of competitors. Viewed as a working hypothesis, this hunch is repeatedly tested against incoming information, and it directs the search for hypothesis-relevant information:

> . . .I can't think of another way because there are a bunch of disjointed facts that you put together and come out with a picture of the way you think things are and will be, and then every time you get another piece of information you see if it coincides with what you thought before. And so I guess it's a way of testing hypotheses until you feel a comfort level and then you go with that. [specialist, information systems]

> A lot of times what we'll do is I'll come up with a hypothesis or somebody will. And we'll run that by a director or vice-president and say we believe that this is gonna happen. 'What's your gut feel?' because he may have more beliefs about some things from all [his] dealings because they deal a lot more externally. [specialist, information systems]

In the course of the interviews, we identified two factors that the analysts seemed to employ to judge the efficacy sense-making process. Given the potential complexity of the

puzzle-solving process, one factor that arose concerned the degree of analyst *confidence* in making sense of accessed information. Confidence is defined as the belief that conclusions drawn from sense-making are accurate. Gelb et al. (1991) note that managers recognize that marketplace changes can occur very frequently, making information quickly dated. Analysts also noted that a key issue in the analysis phase is synthesizing information quickly enough that the conclusions from sense-making are still viable. Thus, *rapidity* or "speed" of sense-making is a second dimension describing the efficacy of the sense-making process.

What Affects the Efficacy of the CI Generation Process?

In the course of the fieldwork, we identified four classes of antecedent variables that appear to influence the dimension of efficacy at the organizing, search and sense-making stages of the CI generation process. The four classes of antecedent variables are: (1) competitive intelligence network, (2) business environment, (3) information environment, and (b) analyst characteristics. CI network refers to the set of informal (i.e., not part of the formal organization) and relatively stable personal information sources nurtured by the competitive intelligence analyst. Business environment captures aspects of the organization's internal and external environments. Information environment refers to the characteristics of the information confronted by the CI analyst. Analyst characteristics captures the descriptive characteristics of the analyst (e.g., job continuity in position).

In turn, we introduce the four classes of antecedent variables that appear to shape the efficacy of the competitive intelligence generation process. We begin each section with a description and definition of the variable. Next, we discuss how we expect the variable to influence one (or more) of the dimensions of efficacy.

Competitive Intelligence Network

Given the amount of discussion informants gave to the nurturing and development of informal networks, it is perhaps not surprising that a number of variables pertaining to the network itself appear to influence several dimensions of the CI generation process efficacy.

Extensiveness of Network

Extensiveness refers to the number of persons in the informal CI network (as distinct from the formal CI organization). As the CI network becomes more extensive, the cumulative knowledge residing in the network increases. As Granovetter (1973, 1982) notes, each individual is likely to have associations (or "weak ties") with members in other groups with potentially different information bases. These weak ties greatly expand information available in the network. Hence, the search process is likely to yield more comprehensive market information as network extensiveness increases. Relatedly, extensive networks enable an analyst to verify information obtained from one source with another, thus potentially resulting in more accurate information.

Further, an analyst maintaining an extensive network is likely to obtain information on a particular issue faster. This is because more individuals can help in a search effort and access the needed information faster. Informants were quick to point to deliberate attempts to enhance network extensiveness:

> We're putting on a seminar in November to try to get together maybe a couple of hundred people who are interested in the subject . . .I'm trying to have people come in, and main goal is networking. We won't be disseminating results of specific studies necessarily. But we'll be available for people to connect. [manager, business intelligence]

> I set up a competitive intelligence network with bout 170 people. It's an e-mail network. One hundred and seventy in the U.S. and 75 worldwide. It is so easy to send out a message to 150 to 200 people. When there's a question that comes up relating to the competitive intelligence process or a competitor, the person will field the message to me and I'll relay it out to the network. Then answers will come back. [business analysis associate]

The above discussion suggests that:

> P1: *The greater the extensiveness of the competitive intelligence network, the greater the (i) comprehensiveness, (ii) accuracy and (iii) timeliness of the information obtained from the search process.*

Extensiveness of the network seemed to not only enhance the efficacy of the search process, but also the sense-making process. One might expect that the analysts' confidence in the sense-making process is enhanced by group rather than individual sense-making. The more extensive (i.e., both size and diversity) the sense-making network, the greater the likelihood that a variety of perspectives will be brought to bear on the key issues, and the greater the likelihood that discrepant pieces of information will be identified and eliminated. Relatedly, given the findings of prior research suggesting that the perceived risk of a decision decreases as the number of decision makers increase (the risky shift hypothesis — Dion, Baron and Miller, 1970), an extensive sense-making network may likewise enhance analysts' confidence in the conclusions reached. Evidence of the potential efficacy of group vs. individual sense-making was apparent in the interviews:

> What we have found is that a group does it better than one individual. . .Like this committee. We had marketing expertise. We had financial expertise. We had technical expertise. And so we would put together an outline of here's what's happening and then talk about what are the implications, what does it mean? And many times we would not know what the answer is gonna be. But by getting together and talking about it and analyzing it as a group, we came out with a better answer than one individual by [him or herself]. Because what we find is one guy would say something and then you start expanding on that and another guy would

> pick up on that. And so when you go through we'd have a good analysis that didn't have holes. [business strategies]

Thus:

> P2: *The greater the extensiveness of the competitive intelligence network, the greater the confidence in the competitive intelligence generated.*

Third-party Technique

To our surprise, a principal source used by analysts is the competitive intelligence analyst in competing organizations. However, the process of accessing this source is not as simple as calling the competitor and asking for documents. Rather, the analyst in a competing organization is asked for information on a *different* competitor, a third party. We label this approach a third-party technique since competing organizations exchange information about third-parties but not about themselves. This method was described by several interviewees:

> I rely on a system whereby I trade information with my counterparts in competitor organizations, never dealing with our own companies. So we trade on third-party information. [manager, competitive intelligence and market research]

> We sit down with our competition all the time. Those are some of the benefits. You try to scare the hell out of the competition. You do it in a nice way. Let's see what you got. The only real negative part that I see is as we're going out there, trying to gather information, we may give too much away. In other works, you get something from somebody, they want something in return, and you gotta be careful about what you give away. [competitive analysis manager]

We anticipate that accessing information from competitors will enhance the comprehensiveness of the information obtained form the search process. That is,

> P3: *The greater the use of the third-party technique, the greater the comprehensiveness of the information obtained from the search process.*

Homophily

Notably, while extensive networks may enhance the efficacy of the CI generation process, effectiveness also depends on the extent to which individuals within the network are similar to one another or homophilous (see Granovetter, 1973). When individuals within the network are homophilous, information gaps may emerge because the similar sources have redundant (vs. complementary) information. Moreover, tapping only strong ties (i.e., individuals within one's immediate circle of acquaintances) increases the likelihood of finding similar as opposed to novel information. As one manager noted, the result could be a "blind-side" surprise:

> There's always the possibility [of being blind sided], but what you try to do is reach [beyond the network], through your consultant studies, through trade magazines. You try to be beyond relying totally upon the network because if all you're doing is saying, well my network is gonna provide me everything to me, then you will get blind sided. [competitive analysis manager]

We anticipate that networks that are less homophilous will increase the likelihood of accessing relevant information, thus enhancing the comprehensiveness of the search. Furthermore, the use of sources from a non-homophilous network sources should enable the analyst to compare information from these diverse sources, and thus evaluate its accuracy. One would also expect that analysts' confidence in the sense-making process is enhanced when homophily is low if divergent sources revealed similar types of information.

Prior research has also found that individuals who rely on a diverse set of sources are perceived as more powerful (Brass, 1984). Hence, homophily may also affect the sense-making process as well if more weight is given to the opinion of individual who have tapped sources from diverse, non-homophilous networks.

The above discussion suggests the following propositions:

> P4: *The lower the homophily of the competitive intelligence network, the greater the (i) comprehensiveness, and (ii) accuracy of the information obtained from the search process.*

> P5: *The lower the homophily of the competitive intelligence network, the greater the confidence in the competitive intelligence generated.*

Issue Knowledge

Another factor associated with the network that affected the efficacy of CI generation concerned the extent of issue knowledge among individuals within the network. Issue knowledge is defined as awareness within the CI network that information pertaining to a specific competitive issue (e.g., threat, movement) is being sought. To illustrate, some informants noted frustration with their internal, personal sources' lack of awareness of the importance of the information they possessed.

> . . .the inconsistency with which people will recognize that seemingly insignificant facts and observations are important to the development of this overall matrix. I frequently talk with folks who sit down and talk about any competitor. I tell them a little about what I know and pretty soon all these facts begin to roll out. Well, gee, why didn't you tell me? I didn't think it was important. I thought everybody knew that. So it's those kinds of things, I think, are probably the most frustrating. [manager, competitive intelligence and market research]

> The biggest frustration I have and have had all of my career is that our employees don't always recognize, unless they're specifically trained to do so,

> that they are our best source of information, and that if they would make it part of their ongoing activity, we would know just about all we need to know. [general manager]

These ideas mirror those of Fuld (1991), who notes that employees typically have critical information about competitors but do not know either with whom to share it or that it is critical. This observation is important because Herring (1990) proposes that between 75 and 90% of needed information resides within the company.

Issue knowledge is likely to have several effects on the dimensions of search efficacy. On the one hand, when issue knowledge is low, information may come on an "as communicated" versus an "as needed" basis, impeding both the comprehensiveness and timeliness of the information. One the other hand, when issue knowledge is high, information providers know and communicate information directly related to a particular CI issue. Multiple sources communicating information about the same issue provide the analyst with greater opportunity to evaluate the consistency of information and thus assess its accuracy. As such, we hypothesize that:

> P6: *The greater the issue knowledge within the competitive intelligence network, the greater the (i) comprehensiveness, (ii) accuracy, and (iii) timeliness of the information obtained from the search process.*

Reciprocity Maintenance

Our findings suggest that for informal CI networks to develop and remain active, it is imperative that an individual supplying information receives something in return. If the flow of information is unidirectional, the network is unlikely to endure. The following views reflect these ideas:

> I put together this little network. I sent a lot of questions out about the competitors and a lot to the salesman who report to me. In turn, when I sent this message out, I said, 'Hey, guys. I have a profit of XYZ. If any of you are interested, I'll send you a copy.' A lot of them were and said 'please send it.' It's an exchange of information, I said. "Here, you give me this, and I'll feed you back information". [business analysis associate]

> Now that information's coming to us [from personal sources within the organization], we try to pull that stuff together and send it back out to them and say, okay, you've given us some stuff, we're going to give you a lot more [competitive intelligence manager]

To the extent that reciprocity is not maintained in personal networks, information from personal sources will significantly lessen, thus increasing the analyst's reliance on impersonal instead of personal sources. This should, in turn, reduce the comprehensiveness of information and potentially lessen the information's timeliness.[5]

P7: *The greater the reciprocity maintenance within the competitive intelligence network, the greater the (i) comprehensiveness, (ii) accuracy, (iii) timeliness of information obtained from the search process.*

Promotion Effort

Several interviewees pointed out that the starting point in establishing a network is to "make your name known" within the organization so as to promote the CI effort. Analyst promotion refers to communications touting the intelligence products provided by the analyst, the benefits of the information, and one's availability as a resource. The following comments illustrate how this process gets started:

> I've given a lot of presentations, probably about 20 or so on the competitive work I did and those have been given anywhere from our executive committee to departmental staffs. So I've addressed those groups and then I mentioned I have a bunch of individual meetings. So I've been able to share the findings that way. I've sent out hundreds of copies [of this particular set of reports]. [manager, business intelligence]

> I try to get the organization turned [to provide me information]. When individuals hear something I want them to pass it back to [me]. [manager, manufacturing support services]

An analyst's promotional efforts have several benefits. First, they enhance issue knowledge by making the members aware of key CI issue. Second, they represent an important step in reciprocity maintenance. As argued earlier, both factors are likely to lead to more comprehensive, timely, and efficient search.

P8: *The greater the analyst promotional efforts, the greater the (i) issue knowledge, and (ii) reciprocity maintenance.*

Business Environment

Our field data also suggested a second class of antecedent variables that concerned how attributes of the internal organization and the external environment impact the organizing, searching, and sense-making processes.

Recognition Systems

Recognition systems refer to use of the informal and formal rewards for obtaining and sharing competitive intelligence. Informants noted the importance of providing rewards/recognition so as to facilitate horizontal and vertical information flows within an organization.

> I'm afraid most of the flow is in one direction. I think there probably could be some better utilization made of it, if there was some kind of reward for sharing. [planning manager]

As suggested in the related market orientation research stream, sharing CI is more likely if individuals within the organization are recognized and rewarded for doing so (see Kohli and Jaworski, 1990). We anticipate that recognition systems will increase the comprehensiveness of the search process by drawing key information from individuals in the organization. The presence of incentives is also likely to improve the speed with which organization members share market information with other. Although such reward and recognition system do not appear to be common, we expect that information search is more comprehensive and timely when recognition systems for obtaining and sharing market information have been developed.

> P9: *The greater the recognition for obtaining and sharing competitive intelligence, the greater the (i) comprehensiveness, and (ii) timeliness of information obtained from the search process.*

Time Allocation

A guiding assumption in sense-making is that those involved in sense-making actually have time to engage in puzzle solving. Because our interviews revealed that CI activities are only a part-time function for many analysts and line managers, organizational opportunities to pull the pieces together are often limited — as illustrated in the following remark:

> So we'll try to collect as many of those bits as possible and then the key is having somebody who's got enough time who can put the puzzle together. And that's an on-going process. [product manager]

The lack of time allocated to these activities is likely to reduce the absolute number of information sources and reduce the diversity of source (Cyert and March, 1963). With respect to the sense-making stage, this limited time allocation is likely to lessen the thoroughness of the analysis — reducing the rechecking of source information, reducing the time spent discerning relationships among various pieces of information, and increasing the use of decision heuristics. As such, we anticipate that the analyst will be less certain about the veracity of the conclusions reached.

In addition to *absolute* time allocation, the field interviews and literature suggest that *relatively* more time is placed on the front-end collection activities versus the back-end sense making activities. The following two quotes capture this imbalance:

> . . .inordinate time is spent on collection and analysis, not enough time is spent on insights, conclusions, and action plans. [manager, manufacturing services support]

> But, my observation, over the years – I've been in most of the business analysis groups of XYZ – is that we spend most of our effort in competitive activity in what I call filling up bushel baskets, in other words, collecting data, and putting it in a file cabinet and letting it reside in a file cabinet. I think our activities are really aimed at taking that out of the bushel baskets and using it. [(internal) financial consultant]

These observations mirror those made in other studies. Ghoshal and Westney (1991) found that among both analysts and clients of competitive intelligence, the limited time for analysis was a significant barrier to sense-making efficacy. Fuld (1991) proposes that the lack of time to nurture and analyze data is an important reason for the failure of many CI programs. We expect that this time imbalance, though it may make the sense making process more efficient, directly affects the confidence with which the analyst holds his or her conclusions since the lack of time reduces the thoroughness of the analysis.

> P10: *The lower the (i) absolute and (ii) relative time allocated for sense-making, the lower the confidence in the competitive intelligence generated.*

Market Pressure

A final business environment variable noted to affect the CI generation process concerned market pressure. Market pressure is defined as the demands placed on an organization by key external stakeholders (e.g., competitors, consumers, stockholders). Daft and Weick (1984) point out that in less pressured markets, organizations can survive even if they are not well-tuned to customers, competitors, and other key external stakeholders. However, as market pressures increase, they must shift their orientation to the needs of the market in order to survive. Kohli and Jaworski (1990) similarly argue that the importance of tracking and responding to marketplace changes may depend on the nature of the marketplace itself. It may be more important to be cognizant of and responsive to new trends and developments in highly competitive markets than in benign ones. As on manager commented:

> We're probably better at changing as a result of the manager going out to the customer and getting kicked in the ass about something we're doing relative to the competition. [business manager]

This cognitive awareness of intense market pressures is expected to push senior management to allocate more resources to monitoring and understanding competitor moves. Interestingly, as the above quote suggests, the customer may be driving this allocation by discussing how competition is better meeting his needs. Regardless of the root cause, Wilensky's (1967) work supports the link between market pressure and resources allocated to the intelligence-gathering function. In the current context, we hypothesize that the increase in market pressure will lead to more financial and human resources allocated to CI, with attendant changes in the formal structure of CI activities. Moreover, perceived consistency of market pressures over time should lead to an increase

in commitment to CI activities. Thus, we would expect that the CI organization is likely to be more formally structured and stable when market pressure is high.

P11: *The greater the market pressure, the more (i) formal the CI organization structure and (ii) stable the CI organization.*

Information Environment

The information environment refers to the characteristics of the information confronted by the CI analyst. The information environment confronting the analyst has not been discussed in previous marketing or strategy literatures. In this section, we explore the impact of several characteristics of the information environment, most notably the richness, divergence, and value of the information.

Richness

One of the factors that slows search and sense-making and undermines confidence is the amount of information that related to competitors. Data richness refers to the volume of data available in the competitive environment. As Day (1991, p. 2) indicates, "the sheer volume of data captured by large transaction systems has outstripped the ability of traditional approaches to extract useful or timely insights." Ghoshal and Westney (1991) found that data richness was regarded as one of the top problems perceived by analysts and clients of competitive intelligence. Informants in our study noted similar problems:

> We have the capability to capture huge amounts of data on our competitive companies, the people we're competing with . . . far more information than we can effectively use. And so sorting that data to understand which of it is important and then being able to translate that into the underlying structure of the industry or those companies is a major difficulty. [business manager]

> You get a little constipated with all this information. You know, you take it in, you take it in, you take it in. You get a little overloaded with it. [strategic planning specialist]

Although an information rich environment may provide more opportunities for obtaining comprehensive information, it has several negative effects on search and sense-making processes. First, it reduces the speed of search and sense-making, as analysts must sift through and assign meaning to data that often lack direct comparability. Second, the information volume is likely to create a situation of information overload — forcing analysts to focus on only a subset of easily processed information (Alba and Hutchinson, 1987). Such limited analysis is expected to undermine analysts' confidence in their conclusions. Analysts' confidence may also decline in a data rich environment since the sheer volume of information makes the analyst realize how much still needs to be

learned. In a data rich environment the old proviso "the more you learn, the less you feel you know" may therefore characterize analysts' confidence. Furthermore, the length of time spent in analyzing voluminous information may compromise the validity of the conclusions, since information may be out of date by the time the data are synthesized. This should, in turn, further undermine analysts' confidence levels. As one analyst noted:

> When you finally do [sort through all this information] it could be kind of out of date unless you go back and redo a lot of it . . . and that's been a frustration here. [strategic planning specialist]

The above discussion suggests:

P12: *The greater the data richness, the lower the (i) timeliness of the information obtained from the search process, and (ii) confidence in the competitive intelligence generated.*

Divergence

Another information issue in the sense-making process concerns the resolution of conflicting (i.e., divergent) external signals. Though the competitive intelligence literature has not identified divergent signals as a barrier to CI efforts, conflict among signals should affect the rapidity of sense-making because time is needed to determine which signals are reliable and valid. To the extent that a resolution among the divergent signals is not possible, analysts' confidence in their conclusions will decline. As several informants noted:

> [One needs to evaluate whether] this is a reliable piece of information. This may not be reliable. There are two or three moving this way and this one is moving that way, but generally the trend seems to be this way. [business analysis associate]

> If pieces of information are divergent] he'll either get back to the network or if he's on the ball, he'll get in direct contact with the person who filed the report initially and try and get some first had information. [marketing planning manager]

Thus:

P13: *The greater the divergence in external signals, the lower the (i) rapidity of sense-making and (ii) confidence in the competitive intelligence generated.*

Information Value

A final factor affecting the information in the intelligence generation process concerned its perceived value within the organization. The idea that "information is power" which can be used to gain personal or departmental benefits is well documented in the literature (see Argyris, 1977). Individuals who have access to information can withhold it from others

who might benefit from it, pass on distorted information, or employ other influence strategies (see Frazier and Summers, 1984). As one manager succinctly noted:

> My biggest frustration in information collection is that information is power, some people don't want to release that [concept development director]

Individuals with access to information are clearly in a position of power. But whether or not they *transmit* that information is likely to depend on the information's relative value. Relative value is the extent to which information given in an information exchange is more or less valuable than information received. Interestingly, the transmission of information may depend not only on the value of the information itself, but also the strength of ties connecting individuals within the network. Frenzen and Nakamoto (1993) suggest that when ties are weak, an individuals who receives information may be loathe to be 'behind' in the exchange by revealing information of greater value but happy to be 'ahead' by revealing information of lesser value (Frenzen and Nakamoto, 1993, p. 371). Thus, when ties are weak but the information an individual has is highly valued, there is a low probability that this information will be transmitted to others with the network. The following comments express this idea:

> Management knows a great deal and they have good contacts outside the company and hear a great deal of information, and yet they are very unwilling to feed this into this organization. They can use that bit to their advantage. They want sole possession of it. [manager, competitive intelligence and market research]

> Sometimes the younger fellows who are in the lower part of the organization tend to get me a lot better feedback than the vice-president and director. [principal (internal) consultant]

Thus, the value of information is likely to influence the comprehensiveness and timeliness of CI search. Accuracy of the information may also be compromised if inaccurate or partially true information is communicated. Thus,

> P14: *The greater the relative value of the information held by some individuals in a network, the lower the (i) accuracy, (ii) comprehensiveness and (iii) timeliness of the information obtained from the search process.*

The Competitive Intelligence Analyst Characteristics

Characteristics of the individual charged with generating CI and the strategies they use to generate it also appeared to affect the efficacy of the CI generation process. With the exception of Day and Nedungadi's (1994) work on managerial (or analyst) representation to their competitive environments, analyst's characteristics have largely been ignored in the marketing and strategy literatures.

Job Continuity

One characteristic critical to the search and sense-making process appears to be the analyst's job continuity. Job continuity, or length of time on the job, translates directly into the development of expertise that makes search activities efficient, comprehensive, and timely (see Alba and Hutchinson, 1987; Levitt and March, 1988). Research elsewhere suggests that experts are more aware than novices of what information is needed and how it should be obtained (Brucks, 1985). They are also selective about what is searched (Alba and Hutchinson, 1987; Punj and Staelin, 1983). Analysts who have been on the job for a longer period of time are less likely to be overwhelmed by an environment rich in information because they are more capable of knowing what questions to ask (Miyake and Norman, 1979) and have more highly developed cognitive structures that make acquired information more meaningful (Alba and Hutchinson, 1987). Given these capacities, they should be better able to search comprehensively, assess the information's accuracy, and obtain information in a timely fashion. Research in other contexts also suggests that experts are more efficient in information search because they have their own internal framework that enables them to see holistically what others might see as disparate pieces of information (Bettman, 1979).[6] Thus, the human resources needed to gather information and see whether/where it "fits" into a set of information flows should be significantly lessened. As such, the greater the analyst's job continuity, the more accurate, comprehensive, and timely the information obtained from information search, and the more efficient the search process.

Unfortunately, analysts frequently mentioned lack of job continuity as a major impediment to effective CI generation.

> The function [we're] describing require continuity and yet it also sounds in the corporate world as the kiss of death. Getting the right person to do the job and what you want is someone who enjoys it and wants to stay put because a lot of what you're asking a person to do is to [provide] an assessment over a period of time. You can't really tell that by taking a snap shot. You really have to the same person doing that function over and over again. [research manager, special studies]

The above discussion suggests:

P15: *The greater the analyst's job continuity, the greater the (i) accuracy, (ii) comprehensiveness, (iii) timeliness of the information obtained from the search process.*

P16: *The greater the analyst's job continuity, the greater the efficiency of the search process.*

Job continuity also affects the sense-making process. Just as job continuity leads to greater expertise and enhances the efficacy of the search process, so too can it enhance the rapidity of sense-making. First, research elsewhere suggests that experts can remember

more of what they have learned than novices (Bettman, 1979; Chi, Spillach and Voss, 1979; Voss, Vesonder and Spillach, 1980). Alba and Hutchinson (1987) speculate that their greater capacity to remember learned information enables experts to be more efficient problem solvers because they need not reconstruct, but rather can simply retrieve the information they have learned. Experts may also be faster in sense-making because they are more likely to make inferences that assign values to missing pieces of information (Alba and Hutchinson, 1987; Crocker, 1981; Fiske and Taylor, 1984; Smith and Medin, 1981). Third, Bettman (1979) indicates that expert decision makers are more likely to begin problem-solving efforts with a set of guidelines that specify goals and subgoals in decision making. Because a novice is unlikely to identify such goals a priori, his or her decision making is likely to be less rapid.

Other evidence also suggest that individuals with job continuity should be more confident in the conclusions they have drawn than individuals new to the job. First, the expertise resulting from job continuity may enable the analyst to realize that a problem is old, whereas a novice's tenure may not be sufficient to realize that the problem is old, whereas a novice's tenure may not be sufficient to realize that the problem has been encountered before (Chi, Glaser and Rees, 1982). Fiske, Kinder and Larter (1983) report that experts are also better able than novices to recognize inconsistent information. Given their prior knowledge, one would anticipate that experts would be better able at not only identifying but also resolving inconsistent signals. Finally, experts are less likely to become overwhelmed by information because their prior knowledge enables them to make sense of information as it is encoded, relate it to previous knowledge, and retrieve it when needed. Collectively, the literature on expertise drawn from sources outside of the CI process confirms interviewees' observations about the importance of expert analysts in sense-making.

> To fully understand all of these aspects, it takes a fair amount of time, experience, and knowledge to pull it together and to be able to get to the point where you can meaningfully evaluate information and quickly understand it and relate to it. [planning manager]

Unfortunately, many interviewees complained that all too often sense-making activities were undertaken by people who were new to the job, who therefore had little understanding of how to interpret the information.

> As soon as you have person involved in [competitive intelligence] work – who's responsible for it. They are there for x number of months. They get familiar, they have an understanding, they're of value, and they're transferred. Then they bring in somebody who is not even familiar with the product, does not even know what [competitive intelligence] is, and there you are again. [production manager]

> I've been in this for a year, you know, and I was hoping to routinize some of what I do, but I've been yanked into this project things after that thing and my role has changed. Ideally, what I would like to do is see what data bases are the most

worthwhile and what kinds of search strategies give me the greatest deal and can them. [strategic planning specialist]

Thus,

P17: *The greater the analyst's job continuity, the greater the (i) rapidity of sense making, and (ii) confidence in competitive intelligence generated.*

Business Performance

Finally, the competitive intelligence generation process is just an intermediate step to a higher order objective – that of superior business performance. If the search process is efficient and effective, it should lead to better plans and better actions on the part of the business. These, in turn should lead to superior business performance. Thus, each of the aspects of organizing, search and sense-making are argued to lead to superior business performance. Thus:

P18: *The more (i) formal and (ii) stable the CI organization structure, the higher the business performance.*

P19: *The more (i) comprehensive, (ii) accurate, and (iii) timely the information obtained from the search process, the higher the business performance.*

P20: *The more efficient the search process, the higher the business performance.*

P21: *The (i) more rapid the sense making and (ii) the greater the confidence in the competitive intelligence generated, the higher the business performance.*

Discussion

Competitive intelligence is a critical input to the market planning process. Despite its pivotal role, we have very little knowledge about the *process* of generating intelligence within organizations. We depart from prior work on competitive intelligence by relying heavily on field interviews with CI personnel coupled with a broad based literature review outside the boundaries of traditional competitive intelligence. At the most general level, the central contribution of our research is the development of a field- and literature-based conceptual framework comprised of three phases: organizing for CI, searching, and sense-making. Within each phase, dimensions of CI efficacy are identified. Moreover, four classes of antecedents pertaining to the (1) the CI network, (2) the business environment, (3) the information environment, and (4) the CI analyst are identified and hypothesized to affect various efficacy dimensions of the generation process. In this section, we review briefly several key findings and their associated managerial implications. We conclude with a brief research agenda.

Key Findings and Managerials Implications

The framework indicates that the starting point for CI efforts is organizing for CI. Interestingly, little prior research has addressed this phase. Our findings indicate that organizations often lack stable CI organizations. The CI structure is likely to be particularly ill-developed in organizations that operate in a relatively benign industry. From a managerial viewpoint, however, it is clear that the development of formal CI effort is a prerequisite for successful CI, though the preferred organizational form (e.g., separate CI unit, networked CI effort) of this effort is not clear at this time (see Stubbart, 1982).

Previous work is limited on the role of an analyst in searching for competitive intelligence. The view that emerged from our interviews highlights the critical importance of an analyst proactively developing and nurturing and informal network of information sources. The time and effort needed to develop such networks highlights the importance of job continuity. This observation is especially noteworthy given our findings that job continuity of the CI analyst seems to ebb and flow with the financial health of the firm. Additionally, analysts need to be sensitive to maintaining reciprocity so that members stay in the network for extended periods of time. Nurturing the network requires continual promotion of one's knowledge, and being sensitive to political aspects of the search process. It therefore seems appropriate that activities related to network building, reciprocity maintenance, and developing issue knowledge be explicitly incorporate into the job description of a CI analyst, and that the skill set needed to accomplish these activities be defined.

The process of sense-making has also received little attention from marketing scholars. The view expressed in our study challenges the sequential process of goal setting, search, and analysis. Instead, sense-making is seen as an evolving and iterative process – analogous to puzzle solving. Information is received at random intervals, from a range of sometimes divergent sources, and often is analyzed from multiple perspectives. The use of multiple individuals may enhance the quality of the analysis and may create buy-in for subsequent strategy formulation and implementation. Sense-making rapidity and confidence are enhanced by the job tenure of the CI analyst, and by the use of multiple parties who bring a broad and diverse set of backgrounds to bear on the sense-making process. Job continuity enables the analyst to fill in information gaps, identify and reconcile inconsistent information, recognize novel solutions, and engage in efficient information analysis. Multiparty sense-making allows for multiple perspectives that should enhance confidence in the conclusions reached.

Future Research

Search Strategy

A major issue that surfaced and remained unresolved in the course of our interviews was the relative desirability of two alternative search strategies – problem-focused versus general search. One strategy – problem focused – involves a limited CI search including the initial identification of the key problem of interest, identifying and prioritizing information needed to address the problem, and then searching for that

information (see Herring, 1990; Prescott and Smith, 1990). For example, two managers noted:

> . . . at least a question to get you in the ballpark to get a first playback on the data and based upon what you see, you start asking yourself the questions that allow you to focus in more and more. Knowing what you're looking for is absolutely key . . . If you're just standing there, you'll never find it. You got to know what you're looking for. [technical manager, patents and regulatory affairs]

> . . . and so they spend all of their resources on the system in relation to everything in the world and be able to put it out to anybody who might ever possibly have a need to know and not nearly enough time focusing on what the hell do we really need to know. [manager, business intelligence].

Interestingly, other managers argued against a problem-focused search strategy and in favor of a general strategy. They suggested that a problem-specific search strategy could result in ignoring information that might ultimately prove valuable. As one manager commented:

> You've probably heard other people say that there has been a very clear definition made of what people need, and you try to answer their questions. I have two different views on that. I think that yes, you need a clear defintion of what people want and you respond to them and give them what they want. But in addition, while you're doing that, damn it, you get as much information as you can, because sometimes you'll find out things that people never even thought about asking about. And, it'll be surprise. [business analysis associate]

It would be useful to explore the area of search strategy more completely in future studies. Some of the issues worth examining are: In what kinds of environments is a focused versus general search strategy more appropriate? If both search strategies need to be engaged, should be in sequential order or undertaken concurrently?

Network Variables

Our findings on the importance of networks in facilitating the CI generation process suggest a need for future research on network characteristics that influence CI efficacy. In other literatures, networks have been described as formal (involving formally specified relationships between superiors and subordinates) and informal (involving individually determined patters of interaction) (see Kotter, 1982), and involving varying degrees of status among the network member (Brass, 1984). Furthermore, networks can be described according to their density, or the degree of interconnectedness among the network members (Marsden, 1990). Though exploring these network characteristics was beyond the scope of our study, one might hypothesize that (a) search efficiency, comprehensiveness and timeliness are enhanced by informal (vs. formal) networks, and that (b) the status of the network or

individuals within it might bias the sense-making process (greater weight might be given to the high status individual/network).

Use of Competitive Intelligence

The present study focuses on monitoring and interpreting the competitive environment, but a growing body of literature examines issued associated with the process of subsequently *using* information for strategic and tactical proposes (e.g., Menon and Varadarajan, 1992). Jain's (1984) study of CEOs suggests that the lack of integration of CI with the strategy formulation process is one of the fundamental problems occurring in practice. Similarly, a recent request for proposals by the Society for Competitive Intelligence Professionals stressed research on the integration of CI into business plans as a prime objective. Though most of the studies on information use relate to the use of customer research (e.g., Deshpande and Zaltman, 1982; Moorman, Zaltman and Deshpande, 1993), insights from that context may generalize the CI context. For example, trust among persons involved in the information exchange process, low "surprise," and politics may all affect the use of CI. Such issues warrant future research.

Interdependencies among Factors Affecting Competitive Intelligence

Our discussion reflected the direct links between the four classes of antecedents and dimensions of CI efficacy. However, as indicated at various points throughout this paper, the constructs that comprise the four categories of antecedent factors are potentially related. For example, low time pressure should facilitate the resolution of conflicting signals from divergent information sources, while job continuity may affect the range of sources accessed. Furthermore, there may be relationships among the efficacy dimensions themselves. For example, stability of the CI effort is likely to influence the efficiency of both the search and sense-making stages. Clearly, relationships among the CI antecedents or among the efficacy variables are likely to be complex and warrant future search.

Information Technology Implications

It is also interesting to consider how the growing adoption of information technology will affect the CI generation process. For example, a recent product by GESCAN International accepts input from all market intelligence sources including live newswire feeds (e.g., Dow Jones, Business Wire), analyst input (e.g., annual reports), online databases, electronic mail, and others (NEXIS, Dialog). This product automatically organizes the input, alerts the user, and routes the intelligence by subject area regardless of the input source. Finally, it is a real-time system that electronically screens masses of information and delivers only requested information within seconds of receipt. Of great interest to the practitioner community would be field experiments in matched sites to examine the role of information technology in the search and sense-making phases of competitive intelligence generation.

In conclusion, this study represents an initial attempt to develop a richer characterization of the CI generation process. The insights noted in this study advance our understanding of

the factors that impact the process. Importantly, the current observations should be subjected to empirical testing in large-scale studies. Conducting the CI function effectively and efficiently is fundamental to marketing, yet our knowledge base as documented in the literature is very limited. We hope this study provides an impetus for much-needed research in this area.

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Notes

1. Competitive intelligence refers to insights about competitors that are derived from primary or secondary data.
2. In contrast to market research, competitive intelligence is often more general, typically performed in-house, of an ongoing nature, and entails greater uncertainty about the ultimate value of the information obtained.
3. The sample sizes in previous studies are: Fahey and King (1977) N = 12; Gelb et al. (1991) N = 20; Thomas (1980) N = 9; Fahey, King, and Narayanan (1981) N = 12; Lenz and Engledow (1986) N = 10.
4. There is a growing literature on interpretation (e.g., Daft and Weick 1984) and sense-making (e.g., Thomas and McDaniel 1990, Thomas, Clark and Gioia 1993) in the management literature. Interestingly, this work has centered mainly on the labeling of strategic events into broad categories such as opportunities or threats (e.g., Thomas et al. 1993). To the best of our knowledge, this stream of work has not considered the efficiency of the sense-making process and the analyst's confidence in the conclusions reached.
5. Reciprocity is also likely to dimensions of search efficacy by its impact on antecedents discussed earlier. For example, because reciprocity is likely to result not only in the continual flow of information, but also access to the source's own networks, it should enhance network extensiveness. To the extent that individuals share information, they may learn about the value of information being sought; issue knowledge is thereby enhanced. Finally, to the extent that reciprocity is maintained, individuals may be less likely to succumb to political pressures and conceal information.
6. Moreover, lack of job continuity is likely to affect the extensiveness of a network because it reduces the time a scanner has to access, build, and nurture an information network. The number of sources (both internal and external to the firm) is also affected by job continuity because expertise and job continuity affect the identification, evaluation, and use of internal and external sources.

References

Aguilar, Francis (1967), *Scanning the Business Environment*, New York: MacMillian.

Alba, Joseph W., and Hutchinson, Wesley (1987), "Dimensions of Consumer Expertise," *Journal of Consumer Research*, vol. 12, March, pp. 411–54.

Argyris, Chris (1977), "Organizational Learning and Management Information Systems," *Accounting, Organizations and Society*, vol. 2, pp. 113–23.

Bettman, James R. (1979), *An Information Processing Theory of Consumer Choice*. Reading, MA: Addison-Wesley Publishing Co.

Brass, D. J. (1984), "Being at the Right Place: A Structural Analysis of Individual Influence in an Organization," *Administrative Science Quarterly*, vol. 29, pp. 518–39.

Brucks, Merrie (1985), "The Effects of Product Class Knowledge on Information Search Behavior," *Journal of Consumer Research*, vol. 12, June, pp. 1–16.

Chi, Harry, L., Glaser, Robert, and Rees, Ernest (1982), "Expertise in Problem Solving," In Robert J. Sternberg (ed.), *Advances in the Psychology of Human Intelligence*, vol. 1, Hillsdale, NJ: Lawrence Erlbaum, pp. 7–75.

_____, Spillach, George J., and Voss, James F. (1979), "Acquisition of Domain-Related Knowledge," *Journal of Verbal Learning and Verbal Behavior*, vol. 18, June, pp. 257–73.

Colmenares, Don (1992), "Managing the Intelligence Operation," Proceedings of the 8th Annual International Conference. Society of Competitive Intelligence Professionals.

Crocker, Jennifer (1981), "Judgment of Covariation by Social Perceivers," *Psychological Bulletin*, vol. 90, pp. 272–92.

Culnan, Mary J. (1983), "Environmental Scanning: The Effects of Task Complexity and Source Credibility on Information Gathering Behavior," *Decision Sciences*, vol. 14, pp. 194–206.

Cyert, Richard, and March, James (1963), *Organizations*, New York: Wiley.

Daft, Richard L., and Weick, Karl E. (1984), "Toward and Model of Organizations as Interpretive Systems," *Academy of Management Review*, vol. 9, pp. 284–95.

Day, George (1990), *Market-Driven Strategy*, New York: The Free Press.

_____ (1991), "Learning About Markets," *Marketing Science Institute Report #91–117*, Cambridge, MA: Marketing Science Institute.

_____, and Nedungadi, Prakesh (1994), "Managerial Representations of Competitive Advantage," *Journal of Marketing*, vol. 58, April, pp. 31–44.

Deshpande, Rohit, and Zaltman, Gerald (1982), "Factors Affecting the Use of Market Research Information: A Path Analysis," *Journal of Marketing Research*, vol. 19, February, pp. 14–31.

Dickson, Peter R. (1992), "Toward a General Theory of Competitive Rationality," *Journal of Marketing*, vol. 56, January, pp. 69–83.

_____, Urbany, Joel, and Lehmann, Donald (1994), *Competitive Decision Making, Charleston, South Carolina Conference*.

Dion, K. L., Baron, R. S., and Miller, N. (1970), "Why Do Groups Make Riskier Decisions Than Individuals?" In Leonard Berkowitz (ed.), *Advances in Experimental Social Psychology*, vol. 5, New York: Academic Press.

Drumwright, Minette (1994), "Socially Responsible Organizational Buying: Environmental Concern as a Noneconomic Buying Criterion," *Journal of Marketing*, vol. 58, July, pp. 1–19.

Eisenhardt, Kathleen M. (1989), "Building Theories From Case Study Research," *Academy of Management Review*, vol. 14, no. 4, pp. 532–50.

_____, and King, William (1977), "Environmental Scanning for Corporate Planning," *Business Horizons*, August, pp. 61–71.

Fahey, Liam, King, William and Narayanan, Vadake K. (1981), "Environmental Scanning and Forecasting in Strategic Planning," *Long Range Planning*, vol. 14, February, pp. 32–9.

Fiske, Susan T., Kinder, D. R., and Larter, W. M. (1983), "The Novice and the Expert: Knowledge-Based Strategies in Political Cognition," *Journal of Experimental Social Psychology*, vol. 19, pp. 381–400.

_____, and Taylor, Shelley E. (1984), *Social Cognition*. Reading, MA: Addison-Wesley.

Frazier, Gary, and Summers, John O. (1984), "Interfirm Influence Strategies and Their Application within Distribution Channels," *Journal of Marketing*, vol. 48, Summer, pp. 43–56.

Frenzen, Jonathan, and Nakamoto, Kent (1993), "Structure, Motivation and the Flow of Market Information," *Journal of Consumer Research*, vol. 20, September, pp. 360–75.

Fuld, Leonard (1991), "A Recipe for Business Intelligence Success," *The Journal of Business Strategy*, January–February, pp. 12–7.

Gelb, Betsy D., Saxton, Mary Jane, Zinkhan, George M., et al. (1991), "Competitive Intelligence: Insights from Executives," *Business Horizons*, January–February, pp. 43–7.

Ghoshal, Sumantra, and Westney, D. Eleanor (1991), "Organizing Competitor Analysis Systems," *Strategic Management Journal*, vol. 12, pp. 17–31.

Glaser, Barney, and Strauss, Anselm (1967), *The Discovery of Grounded Theory*. Chicago: Aldine.

Granovetter, M. (1973), "The Strength of Weak Ties," *American Journal of Sociology*, vol. 6, pp. 1360–80.

_____ (1982), "The Strength of Weak Ties: A Network of Theory Revisited," In P. V. Marsden and N. Lin (eds.), *Social Structure and Network Analysis*, Beverly Hills, CA: Sage, pp. 105–30.

Herring, Jan P. (1990), "Senior Management Must Champion Business Intelligence Programs," *The Journal of Business Strategy*, September–October, pp. 48–52.

Jain, Subhash (1984), "Environmental Scanning in U.S. Corporations," *Long Range Planning*, vol. 17, April, pp. 117–28.

Jaworski, Bernard J., and Kohli, Ajay K. (1993), "Market Orientation: Antecedents and Consequences," *Journal of Marketing*, vol. 57, July, pp. 53–70.

Kahaner, Larry (1997), *Competitive Intelligence*, New York: New York: Touchstone.

Keegan, Warren J. (1974), "Multinational Scanning: A Study of the Information Sources Utilized by Headquarter Executives in Multinational Companies," *Administrative Science Quarterly*, vol. 19, pp. 411–21.

Kefalas, A., and Schoderbeck, P. P. (1973), "Scanning the Business Environment: Some Empirical Results," *Decision Sciences*, vol. 4, pp. 63–74.

Kohli, Ajay K., and Jaworski, Bernard J. (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications," *Journal of Marketing*, vol. 54, April, pp. 1–18.

Kotler, Philip (1994), *Marketing Management*, Englewood Cliffs, NJ: Prentice Hall.

Kotter, John P. (1982), *The General Managers*. New York: Free Press.

Lenz, R. T., and Engledow, J. L. (1986), "Environmental Analysis Units and Strategic Decision Making: A Field Study of Selected 'Leading Edge' Corporations," *Strategic Management Journal*, vol. 7, pp. 69–89.

Levitt, Barbara, and March, James G. (1988), "Organizational Learning", *Annual Review of Sociology*, vol. 14, pp. 319–40.

Marsden, V. P. (1990), "Network Data and Measurement," *Annual Review of Sociology*, vol. 15, pp. 435–63.

Menon, Anil, and Varadarajan, P. Rajan (1992), "A Model of Marketing Knowledge Use Within Firms," *Journal of Marketing*, vol. 56, October, pp. 53–71.

Moorman, Christine, Zaltman, Gerald, and Deshpande, Rohit (1992), "Relationships Between Providers and Users of Market Research: The Dynamics of Trust Within and Between Organizations," *Journal of Marketing Research*, vol. 29, August, pp. 314–28.

Narver, John C., and Slater, Stanley F. (1990), "The Effect of a Market Orientation on Business Profitability," *Journal of Marketing*, vol. 54, October, pp. 20–35.

Porter, Michael (1980), *Competitive Strategy*. New York: Free Press.

Prescott, John E., and Smith, Daniel C. (1990), "A Framework for the Design and Implementation of Competitive Intelligence Systems," In Charles C. Snot (ed.), *Strategy, Organization Design and Human Resource Management*, Greenwich, CT: JAI Press.

Punj, Girish N., and Staelin, Richard (1983), "A Model of Consumer Information Search Behavior for New Automobiles," *Journal of Consumer Research*, vol. 9, March, pp. 366–80.

Smith, Edward E., and Medin, Douglas L. (1981), *Categories and Concepts*. Cambridge, MA: Harvard University Press.

Strauss, Anselm, and Corbin, Juliet (1990), *Basics of Qualitative Research*. Newbury Park, CA: Sage Publications.

Stubbart, Charles (1982), "Are Environmental Scanning Units Effective?" *Long Range Planning*, vol. 15, June, pp. 139–45.

Thomas, Philip S. (1980), "Environment Scanning: The State of the Art," *Long Range Planning*, vol. 13, February, pp. 20–25.

Thomas, James B., and McDaniel, R. R., Jr. (1990), "Interpreting Strategic Issues: Effects of Strategy and the Information-Processing Structure of Top Management Teams," *Academy of Management Journal*, vol. 33, pp. 286–306.

Voss, James F., Vesonder, Gregg T., and Spillach, George J. (1980), "Text Generation and Recall by High-Knowledge and Low Knowledge Individuals," *Journal of Verbal Learning and Verbal Behavior*, vol. 19, December, pp. 651–67.

Wilensky, H. L. (1967), *Organizational Intelligence*, New York: Basic Books.

Zeithaml, Valarie, Berry, Leonard, and Parasuraman, A. (1988), "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing*, vol. 52, April, pp. 35–48.