Competitive Intelligence and Social Advantage

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ABSTRACT

THIS ARTICLE PRESENTS A BRIEF CONSPECTUS of current issues in civilian competitive intelligence (CI). The authors note an extension of the concept beyond the traditional focus on business competition and highlight emergent tools and techniques (networking and groupware) which allow the concept to be more generally operationalized in terms of social advantage. They conclude with some reflections on the possible role of library and information science (LIS) programs in providing key CI skills and competencies such as searching, summarizing, analysis, synthesis, and interpretation.

ACADEMIC ADVANTAGE

The writing of this article is a competitive act. It involves the giving, receiving, and interpreting of signals, and the understanding of the rules which determine interaction in a given social environment. The authors, who are practicing academics, wish to send certain signals, both institutional and personal. First, that their institution is active in the CI field (image management, in other words). Second, that they, as individuals, seek association with this field (what might be termed product positioning). In addition, they have linked their work by means of references to others in the field, and they seek to claim priority in the presentation of certain ideas and in the innovative linking of certain literature sets. As academics, both authors wish to add another unit of publication in a recognized

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journal to their résumés, as this may be used along with other activity indicators as a measure of individual faculty performance. A reader who wishes to analyze the competitive position and strategies of LIS schools in the United States might infer from this publication that the authors' school is staking a claim in the area of CI.

Such signals only have meaning in context. As specialists in a given social environment, both authors must identify and conform to the internal (social norms) and external (environmental constraints) rules which ensure the viability of their social group (see, for example, Becher, 1989). Work must not be plagiarized—e.g., sources and assistance must be acknowledged, copyright and patent legislation must be complied with, and the work should have no implications in terms of product liability. The authors maintain that such understanding of the internal and external environment—Bourdieu's (1991, p. 12) *habitus*—which emerges from competitive intelligence activities is the key to sustaining social advantage or ensuring viability in any context.

Identifying and operating by the rules is not sufficient, however. Players in a given sector must also be able to interpret the moves of others and the ways in which coplayers are likely to interpret a given situation or milieu. A paper submitted for publication to a journal, for example, has to compete for space; an experienced author will sometimes check the characteristics which determine the quality of a given journal, monitor the composition of the editorial board, and engineer a submission to fit (see, for example, Myers, 1990). Insider knowledge of the editorial calendar may ensure that one submission is more timely than another and so on. A similar knowledge of the rules, and how those rules are interpreted, will determine success or failure in many areas of academic life, such as applications for posts, grant/funding proposals, and the preparation and submission of both curriculum documentation and course syllabi.

EDUCATIONAL EDGE

The sustaining of competitive advantage in academic and research environments goes well beyond the personal and institutional. Cawkell (1991) has described how the ISI's (Institute for Scientific Information) *Science Citation Index* can be used for competitive intelligence: This process opens up a means of gathering intelligence for such purposes as estimating the impact of work done by an individual or an organization or noting the growth, diminution, or change in the activities of a science-based company, educational or research establishment, or even an entire country (p. 29). Such tools have been used for more than a decade in the United Kingdom for

research evaluation purposes, though the most recent initiative (the Technology Foresight Programme) will use a Delphi technique, copied from Japan, to identify an array of technologies which promise the United Kingdom the most social and economic benefit (Bown, 1993). Output in the form of publication is one of many factors in determining the competitiveness of a given institution. Input, in terms of infrastructural investment, for example, is also important. Campus-wide information systems are recognized as an important element in attracting high calibre students, faculty, donors, and investors (Arms, 1988; Cronin, 1989).

Investment in infrastructure is obviously important at the national level. Many of the public statements which support federal investment in the national research and education network (NREN) have stressed its significance to the future industrial competitiveness of the United States. By allowing universal access to key resources, the proposed initiative should have, in theory, a leveraging effect on the general level of education, a variable identified by Porter (1990) as a strategic factor in national competitiveness. Already the Internet offers scope for accelerating technology transfer by bringing researchers and industrialists into closer contact and showcasing prototypes to potentially interested audiences.

THE TRADITIONAL APPROACH

The elements of intelligence work are summarized neatly by Kipling (1912): I keep six honest serving-men/ (They taught me all I knew)/ Their names are What and Why and When/ And How and Where and Who (p. 83). The historic approach to competitive intelligence has focused on sources of information, which allow five of the six men to be identified—the "why," however, relies on analysis of patterns and interpretations of sources. Fuld, writing in 1985, makes similar points, but also emphasizes the importance of "Uncle Sams Library," or public domain information (e.g., federal and state registers, pp. 85-135). A decade later, the L-word is frequently invoked to describe the Internet (the world's largest public library [Tetzeli, 1994]; the postal service, telephone system and research library of the electronic age [Lewis, 1993, F7]), an interesting legitimation which may help to boost librarians' self-esteem (Chitwood, 1992). The role of the Internet in accessing federal material has been endorsed in recent legislation—the Government Printing Office Electronic Access Enhancement Act of 1993, for instance. Although the word *library* does justice to the scale of holdings and the diversity of content available on the Internet, it does not capture the analytic and interpretative aspects of CI. The idea of a national intelligence system is not new, however. Learned (1924) conceptualized the public library

as a community intelligence service, though technology has only recently evolved which allows the idea to be operationalized.

The early proponents of competitive intelligence activity place it firmly in the strategic planning level of the company (see, for example, Synnott, 1987). A highly developed version of this is offered by Beer (1986) who posits a phrontisterion, or strategic war room, with wall-to-wall monitors which constantly display the current state of an enterprise and allow anomalies to be identified and rapidly worked on (p. 194). Beer's description of the technology for this think-tank is prescient (he first introduced the concept in the early 1980s), and any version of the war-room today would probably be enhanced by an electronic meeting system (Polley & Stone, 1993). Linking competitive intelligence to a strategic apex is only one of several possible approaches. Porter (1985) has identified the need for monitoring and analysis at any level of a company, and studies of work practices in Japanese companies support this view (Lagerstam, 1990; Nakagawa, 1993). Peters (1992) argues that the success of German Mittelstand (small and medium-sized) enterprises, the backbone of the German economy, is due to a similar process of observation, interaction, and information exchange at all levels.

COVERT AND OVERT COMPETITIVE INTELLIGENCE

The history of commercial intelligence is covered in Dedijer's (1983) early work (see also, Rayward, 1992) with the unrefined list (e.g. inventories, shipping movements, prices, and so on) a primary presentation medium. Lists can tell the enquirer who is involved in a particular area, what they did, where they were operating, and when they were active. How and why an organization has acted in the way it did can only be inferred: the analysis has to move beyond the raw list to look at context, organizational climate and culture, and patterns of previous behavior. *The Competitive Intelligence Review*, the journal of the Society for Competitive Intelligence Professionals (SCIP), provides frequent case studies from a range of industrial and service sectors (see, for example, Kight, 1992).

Such overt commercial intelligence has always had covert activity as its concomitant; the tension between making something public in the interests of the community (if you publicize the times of shipping, you attract clients who wish to ship) and concealing it in the interests of personal advantage (then a rival company could pre-empt you) is endemic in attempts to achieve social advantage. The academic sector which the authors invoked earlier as an example of a competitive social environment offers a further example in this

context—nondisclosure of work funded by a commercial sponsor—
an increasing trend (Etzkowitz, 1989) which some think may contribute
ultimately to the erosion of the academic journal (Davenport, 1993).

Patents offer the most invoked example of the covert/overt
tension—public yet protected. Again, it is the analysis of patents that
provides their main interest as a source of intelligence, as the strategic
intentions of an individual research group, company, or national
jurisdiction can be assessed from the interpretation of targeted subject
areas and filing patterns over time (Campbell, 1983; Coy et al., 1993).
There is, of course, a paradox. If everybody is potentially familiar
with the great majority of sources of competitive intelligence, what
is competitive about those sources? Subsequent analysis can
differentiate source materials which are commonly available, as does
an analyst's evaluation of their scope and inherent reliability.

DATA DIVERSITY

Much of the above material can be handled by those trained in
traditional LIS skills—searching and retrieving, "parking and
marking." Traditional skills may be insufficient to handle a more
diverse intelligence mix. As early as the mid-1960s, the literature reveals
the importance of diversity in sourcing and of multiple perspectives.
Aguilar (1967) classified environmental scanning for managers into
four modes: undirected viewing or constant monitoring, conditioned
viewing, informal search, and formal search (p. 19). A brief overview
of the topic has been offered recently by Choo and Auster (1993) while
Porter's (1980) seminal text on competitive strategy advocates the
exploitation of a heterogeneous set of source materials (from Securities
and Exchange Commission [SEC] filings to industry gossip).

There exists a mass of less structured information. Soft sources
like phone calls, ephemera, conversations, and e-mail, which are not
typically managed through formal means, can serve as important assets
or even weapons as in the unethical case of blackmail. Internal
information, which may be secret or proprietary, is contained within
a source environment (the clan, campus, or company) but can seep
out into the wider world as rumor or speculation. Street-level
information of this kind is exchanged in real time, lacks structure,
and tends to be disseminated by gossips and industry insiders through
virtual colleges and old boy networks (Cronin & Davenport, 1990).

An integrated technology base is one of the conditions that allows
individuals or groups to harvest and process intelligence. A primary
function is the ability to communicate and exchange information via
telecommunications networks. The ability to exchange must be
supplemented with the ability to trap such exchanges and to analyze
what has been trapped—the significance of a message may not be

manifest until it is placed in a background of other messages. So, a further requirement of the technical base is the ability to broadcatch or gather information from multiple channels in multiple formats. As has been noted frequently, positive redundancy is a requirement of effective intelligence gathering (see, for example, Cronin, 1992).

Developments in the integration of material delivered in multiple formats can be tracked in the hypermedia/hypertext and CSCW (computer-supported collaborative work) literature (Davenport & Baird, 1992; Sproull & Keisler, 1991). Of particular interest is the work of Hillis (1985), whose connectionist technology is used by the data vendor Dow Jones to allow clients to analyze as well as source material (Day et al., 1993). Gelernter (1991) envisages parallel teams of agents whose processing capability can be compared to the neural networks that drive human intelligence (see also, Kupfer, 1994).

Technology aside, there is a range of techniques for analyzing and interpreting interaction. Sociometric techniques (Grosser, 1991) expose underlying communication patterns and can be used, for instance, to assess the frequency and intensity of interaction between identified individuals or groups, and ethnographic techniques may uncover motives, values, beliefs, and sense-making (Geertz, 1973; Guba & Lincoln, 1989). A recent review is offered by Gilbert (1993). Software for capturing and analyzing such observations ("rich pictures" and "thick descriptions") has been reviewed by Fielding and Lee (1991). Recent developments at Xerox PARC (ubiquitous computing) will allow close tracking of personnel movements and face-to-face interactions which can be archived to provide an intimate record of the work of consenting individuals and groups (*Financial Times,* 1994). The technology involved includes active badges (worn on the lapel), video cameras, and live boards (Weiser, 1991).

DEMOTIC DATA

Judicious interpretation of social cues and clues determines success or social advantage in any sphere of endeavor, from buying a used car to international trade negotiation. As Kent (1949) says in his classic text on strategic intelligence: "Intelligence is a simple and self-evident thing.... In a small way it is what we do every day...when almost anyone decides upon a course of action—he usually does some preliminary intelligence work. Sometimes the work is so informal and instinctive that he does not recognize it as intelligence—like finding the right garage man in the classified section of a telephone book" (p. vii). Rheingold (1993) gives examples of grassroots groupminds, or self-help groups, who work across a range of electronic

communities, like health care or job searching. Other electronic fora for the exchange of street information are freenets and civic networks (Fidelman & Civille, 1994).

A concrete illustration is provided by Rogers et al.'s. (1992) case study of a homeless community in California, where access to an appropriate network has promoted self-help and empowerment. A broader vision of public intelligence is offered by Steele (1993), a former deputy director of the U.S. Marine Corps Intelligence Center, who describes the intelligence community as a "vital part of a larger national information continuum that runs from U.S. elementary and high schools and the universities, through private and public libraries, business and media centers, 'rest of government' information, and directly to the White House" (p. 183). He envisages a public intelligence agency which "could provide basic encyclopedic intelligence about all manner of topics to government action officers (most of whom are not cleared for secrets), private sector enterprises, individual citizens, and, inevitably, citizens and organizations elsewhere in the world."

NET INTELLIGENCE

Via the Internet, scientists, researchers, legislators, and the business community can access countless remote, and often unknown, experts, customers, or potential clients using a variety of strategies ranging from participation in highly focused USENET groups through subscription to relevant listservs to the development of bulletin boards for advertising products and services (Cronin et al., 1994). Trawling through such diverse sources and channels was formerly a time-consuming task for intelligence analysts. Though the Internet is still an opaque and, at times, inhospitable environment, many predict that much of the tedium of searching will be relieved by intelligent agents or automated navigation and collection mechanisms.

Early evidence (Cronin, 1993; Rosenbaum & Cronin, 1993; Cronin & Rosenbaum, 1994) suggests that there is already extensive, sophisticated, and creative use of the Internet in support of business information/intelligence gathering activities. Many organizations see the meganetwork as a complement to their existing networks (Quarterman, 1993). The Internet greatly extends access to open source information like the general press, business press, trade press, directories, and company reports to both shareholders and government. A growing number of smaller technology-oriented companies are using the Internet for consumer contacts, as a prospecting source for new clients, as a means of customer communication, indirect advertising, passive benchmarking, and market research (Cronin et al., 1994).

Informal sources may be consolidated into a corpus of more structured and reliable information. A historic precedent is the emergence of academic journals from an earlier phase of epistolary exchange. A twentieth century analogy is the emergence of an electronic journal from a bulletin board or list (Harnad, 1991)—e.g., PACS-R emerged from PACS-L (*Public Access Computer System Review* from *Public Access Computer System List*). Once consolidated as public or terrain knowledge, a source, in conjunction with others, can be the basis of projections and forecasts about future events, what may be termed "horizon information." Informal communication, whether in the domestic setting or workplace, may lack structure, but it is regulated by tacit codes and etiquettes (the norms of scientific conduct posited by Merton [1973] are an example, and the phenomenon is observable in other contexts) which bond social actors into groups, clans, clubs, and families. Often these ties are stronger and more binding than those imposed by formal contracts, a phenomenon crystallized in the concept of *confianza*. This type of information is a driving force in any organizational context, and it can be trapped and exploited (Davenport & Cronin, 1991). The plenary picture derived from total monitoring of all available sources of information about an organization is bound to differ from, or may even conflict with, the summary representation which is used in public presentation (official communiqués, annual reports, news releases, statutory filings), and this dissonance provides scope for interpretation and analysis.

COOPERATIVE INTELLIGENCE

New forms of organization are emerging which add a novel dimension to corporate intelligence work, from an almost exclusive focus on monitoring the competition to identifying and investigating potential partners (the "who" question) inside and outside the enterprise (Peters, 1992). A network organization, for example, may be characterized by high levels of procedural integration and shared objectives but also by managerial and spatial dispersion. Adhocracy is another emergent form, in which strategy, structure, and culture are determined by the requirements of a given project. And there are other commonly invoked structures like the shamrock organization, the cluster form, the inverted form, and the virtual corporation (Davenport et al., 1994). All of these forms resemble, to some extent, Burns and Stalker's (1961) model of organic management that is characterized by flexible tasks; a network structure of control, authority, and communication; ad hoc allocation of knowledge, control, and authority; and an emphasis on peer collaboration (pp. 121-22).

Such nontraditional organizational forms (NOFs) can also be found at the micro-level—groups, for example, that reside inside traditional organizations (task forces, work teams, committees, skunk works, and so on). Another "micro" instantiation of the NOF is the independent business unit or spin-off which sometimes appears to be the only way of generating a breakthrough product within hierarchical and turf-conscious firms. A common requirement for NOFs is that coworker alignment be accomplished relatively quickly, because the organization of work depends on temporary project groups. To deliver a product, people need to understand each other, come to terms in defining what they are after, and perform tasks collectively. These steps are paralleled in group processes, such as communication, decision-making, leadership, and norming. Each of these processes will go through phases determined by group dynamics. For example, people operate with different gestalts (perceptions, mind-sets) that influence their ability to construct and interpret meanings, or, in other words, to communicate. Similarly, differences in personalities may juxtapose dominant and nondominant participants, which in turn can influence group decision-making. All of the foregoing indicates that rapid access to knowledge of local habits, heuristics, expertise, and even effects will be critical success factors in the cooperative environment (Davenport & Cronin, 1990; Grumball, 1994).

In some cases, a new kind of intelligence may be required—not simply what is done but how things are done. There are several tools which can facilitate understanding—electronic meeting systems may enhance mutual understanding of human agents (Jessup & Valacich, 1993) and may allow nonhuman agents to cooperate across boundaries, or a hypertext platform may be the basis of training-by-example (Gregory, 1991). Software to integrate, manage, and share distributed information resources is widely available to support work at the desktop level. Groupware permits collaborative analysis where the need for intelligence is dispersed across multiple sites and time zones. Commonly available products include *Windows for Workgroups* and *Lotus Notes*. A recent initiative sponsored by the Department of Trade and Industry in the United Kingdom is harnessing virtual reality systems to improve cooperative intelligence in BICC, a global cable manufacturer. This virtual reality system will allow BICC to mix the cultures of its different factories and "exploit all its strengths at every location" (Moran, 1994, p. 5).

ANALYSIS FOR ACTION
The authors have suggested that sources without analysis do not constitute high grade competitive intelligence, which is the product of value-adding processes (see, for example, Taylor, 1986). Recent

literature (see, for example, Fuld, 1992) stresses analytic procedures and techniques such as benchmarking, which involves introspection as well as examination of external competitors (see, for example, Bruder, 1992; Bookhart, 1993), sustainable growth rate analysis (see, for example, Harkleroad, 1993), and financial analysis (see, for example, Jacobi, 1992). A recent development in financial analysis is OLAP (Online Analytical Processing) which allows a multidimensional approach to data management (*Financial Times*, 1994). Outside the arena of corporate performance, techniques are available from the fields of semiotics and ethnography for analyzing corporate discourse and social interaction (Huff's 1990 compendium, for example, offers a rich variety of techniques for mapping strategic mindsets).

In certain cases, self-analysis may be as important as analysis of external players. In developing countries, for example, indigenous capabilities are a primary condition for the stimulation of social and economic growth (Cronin & Davenport, 1993, p. 14). Onyango (1991), presenting a detailed case study of Kenyan planned investment, identifies the following constructs as important: indigenous technological capability, indigenous technology learning capacity, independent world technology reconnaissance capacity, indigenous technology creating capacity, and aid negotiating capability. A new paradigm in development economics is based on self-reliance and self-renewal, which would seem to necessitate a development-oriented intelligence policy (Jequier & Dedijer, 1987; Henderson, 1973). Ventura (1987) provides a compelling case study from the Jamaican bauxite industry, which demonstrates the advantages of indigenous negotiating expertise in securing favorable terms in joint ventures with foreign direct investors.

COMPETITIVE INTELLIGENCE LIBRARIANS

The covert/overt paradox which the authors raised earlier in this article is also a problem for would-be educators because, in many cases, intelligence must be exclusive to be useful—that is, it must be contained internally within an organization or work group. There are two ways in which intelligence can be exclusive: (1) because a particular source is known only to a few; or (2) because the analytic skills of those who process the raw intelligence furnish a particular perspective or interpretation. Of course, an understanding of sources, access to sources, and analytic skills can all be taught. So, to some extent, can intelligent behavior be taught by means of simulation, client-based field work, and internships.

How might such skill sets be best built into established educational programs and curricula, and where should the focus lie? Plausible options are business (especially market research and marketing),

cultural anthropology, social psychology, international relations, and library and information science. Each can stake a claim and bring a different dimension to the analysis and practice of intelligence management. Prescott (1991) believes that schools of library and information science are candidates for curricular innovation in CI, which would be a natural extension of existing core skills. Jones (1992), in contrast, suggests that the methods of the historian are close to those of intelligence officers, and the methods of operations research (OR) can help with assessing the effectiveness of systems. He also believes that monitoring developments in information technology is important and that business studies, politics, international relations, and geography can prove useful.

Conclusion

As competitive intelligence draws on different subject areas and specialist skills, it is likely to fit best in academic disciplines that are natural boundary spanners—e.g., communication studies or information studies. A suitable faculty mix for an LIS school with an interest in CI might include systems experts, semioticians, marketing specialists, cognitive scientists, and reference experts. The institutional context where such skills are applied may well lie outside the traditional framework of the business or corporate library. The electronic playing field may demand a new kind of gamesmanship—often free agents or contract workers with little or no emotional equity in buildings, collections, or formal professional structures (Bauwens, 1993) who are adept at navigating the net and skilled at electronic eavesdropping. In any event, graduates from a curriculum which embraces CI as a core competence will be well prepared to function as information adjutants in an era of post-professionalism (Cronin & Davenport, 1988).

Acknowledgment

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