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• FEATURE •

Competitive Intelligence: A Librarian's Empirical Approach

by Margaret Gross

Competitive intelligence within an organization serves as a catalyst in the decision-making process. It is part of the value chain that takes data elements, converts these to actionable information, and results in strategic decisions. The keys to the successful utilization of competitive intelligence are analysis of data and synthesis of information. However, before analysis and synthesis can take place, there must be a reliable font of information.

In this article we propose to examine various types of information required for the CI activity, as well as reliable sources to monitor. The CI searcher must continuously monitor, evaluate, and analyze many data components in order to maintain a comprehensive competitive intelligence program within an organization. Besides looking at data types, we will examine how new Web-based technology has revolutionized the gathering, storage, and dissemination of information.

Competitive intelligence must be a pervasive and ongoing activity. It is the responsibility of all employees. However, in order to best capitalize on the gleanings of CI, a core group should bear the mandate of ensuring progress in the company's CI program. This core group charts the course by:

- ascertaining senior management's needs and directions
- searching and researching
- harnessing internal strengths and capabilities
- collecting and analyzing data
- making recommendations

Competitive intelligence activity must be legal. This tenet transcends all others. A Watergate type of activity is not competitive intelligence. It is theft and, as such, liable to prosecution. An industrial theft is a serious offence. The corporation, its directors, and the individual responsible for the felony may be jointly and severally liable to indictment.

Equally important we must respect intellectual property, copyright, and licensing contracts.

Information should come from reliable sources and be verified and validated as to its veracity.

Table 1 on the next page identifies four major groupings for competitive intelligence activity:

- Business Scanning of the Environment. This macro approach to information-gathering includes market and industry information and evaluation.

- Competitor Intelligence Target. Complementing the macro approach utilized in Business Scanning, this approach focuses its monitoring on one or more specific companies. A competitor's performance, market share, intellectual property assets must be examined. Here we apply SWOT analysis to discover a competitor's Strengths, Weaknesses, Opportunities, and Threats.
- The information yielded from the above two might be quite disparate. We must synthesize it and merge it with personal experience, collective expertise, knowledge garnered through contacts, and collaboration from that ever useful invisible college.
- Finally the value of the above aggregate must be weighed and measured against the stated objectives of the corporation. This requires forecast based on analysis. At this stage, we can turn informed decisions into implemented actions.

The ultimate objective of good competitive intelligence work is the formulation of sound, fact-based, rational decisions for action. All companies, small or large, need to have some form of competitive intelligence activity. As previously stated a core group acts as the CI steering committee. Actionable decisions result when the intuition and background knowledge of team members couples with the computational efficiency of information technology. The librarian/information specialist is an integral member of the team, with primary domain over gathering, evaluating, and disseminating information.

Before we look at some tools that can help accomplish these objectives, we should plan the overall strategy:

- First, you chart your roadmap. Build your roadmap around the results of a CI requirements assessment. This type of assessment identifies needs, ranks them, and suggests possible targets and solutions. Such a document is never immutable, but you will need it to clarify the mandate of the competitive intelligence group.
- Second, identify a clear objective. A scattershot approach is usually ineffectual.
- Once you have identified your objective, define the action profile, i.e., summarize the actions to be taken.
- The lengthiest segment of this process is the research and information-gathering.
- Finally you will analyze the data yielded for relevance, impact, and future decision.

Important Sources

- *Company employees*. These people possess a wealth of data from previous employment, dealings with competitors, and colleagues in other companies and allied industries, etc.
- *Suppliers*. Companies who supply goods and services to your company may be very proud to advertise what they do for other organizations.
- *Clients*. Customer satisfaction is the goal, therefore attend to their recommendations and evaluate them as a catalyst for innovation and improvement.
- *Competitors*. Obviously the intent of CI is to monitor and interpret their every move.
- *Senior Management*. Those people, who have invested into the existence of the CI activity, appreciate its potential and expect some valuable ROI (return on investment). They also operate at a level where they become privy to information that can prove invaluable when factored into the analysis equation. While it is expected that they will ask the right questions and provide information willingly, this cannot be assumed. Therefore you should elicit information from them.

Using TCP/IP Technology

Using an intranet as a tool in Competitive Intelligence is an excellent means for recording information and for sharing it within the organization. Web technology is an integrating technology. It permits the seamless merge of internal information such as database content, full-text reports, memos, meeting action items, etc., with the large volume of knowledge now available on the Internet.

Here are some examples where this enabling technology can prove invaluable.

Business Scanning of the Environment

No company operates in isolation. The external environment is extremely important. You must gather knowledge about the industry, products in development, and prevailing market conditions. Market research is an ongoing activity. Where applicable, demographics must be studied.

Here are recommended sites (with a slight Canadian bias):

Statistical Profile of Canadian Communities

http://ww2.statcan.ca/english/profil/

Based in 1996 census tracts, this source presents a statistical profile of all Canadian communities (cities, towns, villages, Indian reserves and settlements, etc.). It highlights information on education, income and work, families and dwellings, as well as general population information. A mapping feature locates the community within Canada.

Statistics Canada Daily News

http://www.statcan.ca/Daily/English/ today/daily.htm

Includes latest releases of the Consumer Price Index (CPI), Labour Force Survey (LFS), and monthly and quarterly economic indicators.

InfoNation

http://www.un.org/Pubs/CyberSchool Bus/infonation/e_infonation.htm

InfoNation is an easy-to-use, two-step database that allows you to view and compare the most up-to-date statistical data for the Member States of the United Nations.

Best Statistical Sources

http://www.uncle-sam.com/best_stat.html

Perhaps Uncle Sam's greatest asset is its compilation of statistical information on literally every subject under the sun, from jobs and careers to health and nutrition to census demographics. Here are the essential sites for accessing U.S. government statistics.

Statistics at the OECD

http://www.oecd.org/std/

Links to OECD economic indicators.

High-Tech Industries

If the company belongs to a high technology industry, then you must analyze the evolution of the technology. You will seek forecasts predicting the future of the particular technology. Regulatory environments are extremely important. Are there environmental laws to be respected, or does trade in this particular product contravene certain national laws? A good example is the U.S. International Trade in Arms Regulations (ITAR). Trade in certain electronic components, used for space-based applications, contravenes these regulations. When international trade is a consideration, you must learn about domestic and foreign laws. In addition, the impact of supranational regulatory bodies such as the International Telecommunications Union (ITU) or World Trade Organization (WTO) comes into play.

Export Control Reference Tools on the Internet
http://www.dtic.mil/dtic/stinfo/exportcontrol.html
Listing of U.S. government sites that post information on export controls. Includes links to ITAR documents. From DOD STI Info.

The Wassenaar Arrangement
http://www.wassenaar.org/
Information on National Export Controls.

Foreign and International Law Resources on the Internet: Annotated
http://www.law.cornell.edu/library/guides/forin/forin.html
This selective guide provides links to texts of laws and court decisions, international documents, directories, trade information, and statistics.

Guide to International Trade Law Sources on the Internet
http://www.llrx.com/features/trade.htm
Superior pathfinder to sources for international trade, compiled by M. Hoffman at Georgetown University. Organized in sections: Starting Points, International Agreements, International Organizations, U.S. Government Resources, Doing Business In, Statistics. See also the UPDATE to these resources.

International Trade Data System
http://www.itds.treas.gov/ITDS/Frames/Build_Frames.cfm?Site=ITRC
Excellent resource presenting information and links on importing, exporting, country profiles, industry profiles, and general trade data. This U.S. government site was developed to improve trade procedures, promotion, policy development, and statistics as a benefit to both the public and the government.

International Business Resources on the WWW
http://ciber.bus.msu.edu/busres.htm
The Michigan State University Center for International Business Education and Research provides this site, which contains a wealth of information, including news and periodicals, U.S. and international; journals, research papers, and articles; regional or country-specific information; statistical data and information resources; government resources, international trade information; and trade leads; company directories and yellow pages; international trade shows and business events; mailing lists; culture and travel; various utilities; and other indexes of

business resources.

Market Modeling

A market model provides insight into these three main areas by organizing intelligence into:

- An industry overview, which requires scanning of the environment
- An industry structure analysis, which focuses on target analysis

An industry overview answers these questions:

- What are the size and segments of the market?
- Who are the major customers and competitors?
- What are the key market issues?
- What will be the key trends in the market?
- What are the impacts of regulatory and political issues or changes?
- What will be the size, composition, and capacity of the market?

An industry structure analysis answers these questions:

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- Who are the major customers and competitors?
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- What will be the key trends in the market?
- What are the impacts of regulatory and political issues or changes?
- What will be the size, composition, and capacity of the market?

An industry structure analysis answers these questions:

- Which companies are market leaders?
- Which companies challenge our market position?
- What are their goals and objectives?
- How do they plan their strategies?
- Who are the movers and shakers? This requires management profiles (key individuals, decision-making processes).
- How is the marketplace evolving? Who owns what? What are the recent and planned mergers, acquisitions, divestitures?
- Are there any alliance patterns taking shape? Alliances may be vertical, horizontal, pay-to-play, joint ventures, etc.
- What are the strengths, weaknesses, opportunities, and threats (SWOTS)?
- What are actual production levels, backlogs, valuations of operations?
- What is the market share?

To summarize, market modeling must be an on-going effort that focuses on three areas:

- Where is the market positioned today?
- What are the market trends for the future?

- What strategic positions can be developed and exploited?

For effective market modeling you need access to key sites on the Web. When pertinent information is not protected by copyright, you can download it to the local intranet, but always link to the site of origin. This both validates the data and promotes further research.

Using an intranet can help both in the data collection phase of CI and in the effective diffusion of data sets to staff. Publishing the data to the intranet, or, when copyright is an issue, linking URLs to the data sites, ensures the availability of the same information to multiple users. Through an intranet, the CI group can have information to both internal and external sources and serve these up within a seamlessly integrated environment

Managing the Web Connections

Internet sources must be subject to quality-control criteria. Is the information from a reliable source? Is it current? How accurate is it? Even reliable sources can inadvertently post misleading data. If possible, try to cross-check multiple sources in order to validate data.

URLs for an intranet can be managed and posted in several ways:

- Static page
- Static page generated from a database
- Search interface to the database

The static page is a compilation of URLs. When there is no access to a database, this is technologically the simplest type to compile and mount. It requires only a basic knowledge of HTML. The downside is that URLs change and thus the data becomes rapidly outdated. Constant monitoring and revision is required, making this option a labor-intensive activity.

The static page generated by a database is actually a page of topical headers and subheaders. Each of these links to a predefined query residing in the database. For example a page containing the headers — Suppliers, Clients, Competitors. Clicking a selected header would generate a list of URLs corresponding to the respective header.

An intranet Web page that requires little maintenance simply presents a search interface to the database that houses the collected data. This page will have a window for query data along with some suggested keywords and search tips.

The most comprehensive treatment of competitive intelligence and market research will combine all the above options into a multi-page CI Web site.

Collaborative Brainstorming — Internal Resources

Much information relevant to CI already exists within any organization. It may be stored in private offices, filing cabinets, or most importantly within the heads of employees. To extract it, however, requires a resource-sharing climate. Staff members need persuasion to post trip reports, lessons learned, contact information, business shortcuts, negotiation tips, etc.

Colleagues need encouragement to share contacts and all those wonderful benefits derived from that nebulous network known as the "invisible college." New software permits the mounting of databases to contain the information. Company intranets form a technical platform for the circulation of information. More importantly, one can build databases using the intranet for distributed data entry.

From the database built, one can generate a daily summary, or at some other predetermined frequency, predicated on the date of entry field, for presentation to senior management. The summary should address the five Ws of intelligence — *What, Where, When, Why,* and by *Whom* — all viewed in the context of the impact on the organization. Should senior management require more in-depth information, then detailed data, including appended full-text documents residing in the database, can easily be retrieved.

Collaborative brainstorming becomes easier that ever with the installation of conferencing software. One such very popular software is O'Reilly's WebBoard. This software permits the creation of numerous conference boards, and within each board, multiple conferences. Conference can be designated as private, allowing only those named in the conference group to read or post. This enables project teams, department personnel, capture teams, etc., to exchange information integral to brainstorming, scenario definition, and critically, a plan of action.

Every company develops a set of policies, procedures, and sundry business process documents containing the rules by which a company is governed. Additionally the P&Ps, as they are commonly referred to, may contain published guidelines that position and mandate the activities of the CI team.

External Feeds, Newsletters, and Reports

Where licensing permits, one should post news from outside resources on the intranet for general access. Arrangements with information providers such as LEXIS-NEXIS, Factiva/Dow Jones, NewsEdge, etc., will have to include a site license, which can get expensive. If your management deems it ill-advised to apprise employees of monitoring targets, then you may want to negotiate limited-use licenses with the vendors. Any feed should reside on a restricted site protected by active security measures. Often pricing for a limited feed is far less than for full-site access.

You may restrict access to the news feed to a given number of individuals as per contract agreement. If you do not access the source internally, users may have remote access to the vendor's site. Generally validation for access is via IP address. Here logon is automatic, as the vendor's software detects the IP of the incoming request. Some vendors require the names of staff individuals accessing their sites. If this is the case, access is generally via personal password. Another way to measure access for licensing purposes is through the number of concurrent or simultaneous users, as opposed to the total number allowed access. Again cost varies proportionally to usage specified in the contracted agreement.

The following sites provide news feeds via the Internet:

NewsAlert
http://www.newsalert.com

Infoseek Industry Watch
http://www.industrywatch.com
Daily news updates and searches for U.S. industries, companies, and quotes.

NewsEdge Newspage
http://www.newspage.com
Daily news updates on companies, industries, and quotes.

PR Newswire
http://www.prnewswire.com
Press releases.

Luce Online
http://www.luceonline.com
Luce is a traditional clipping service that has an online clipping service called CyberClipping Internet News Monitoring Service.

In addition to news feeds, market research reports purchased from companies such as Frost and Sullivan, Pyramid Research, Gartner Group, etc., are now available in electronic format. Many of these companies supply HTML or PDF versions ready for posting on an intranet. One usually pays a premium for electronic diffusion of these documents. Each case must be evaluated on an individual basis. Also look for equally important reports from the public sector. Government bodies generate much material of CI value. Generally these are not copyrighted and may be redistributed freely.

Most CI groups generate a regular newsletter or executive summary for management. Posting the publication on an intranet can deliver well-formatted data simultaneously without congesting valuable bandwidth space, as would be the case with e-mailing copies of the document to long lists of readers. One can still use e-mail to alert users to click on the report.

Security of course is an issue. Within the organization, certain data must be protected, due both to licensing and to content sensitivity. Numerous schemes can be implemented, ranging from firewalls to secure servers, restricted permissions on the network, password protected pages, etc. The CI group must involve the Information Technology Department in order to design the best architecture for the requirement.

Competitor Intelligence Target

Tracking competitors via the Internet isn't difficult. The problem is too much information. We may all gorge on information, but we all starve for knowledge. Therefore, a systematic, ordered approach is the most effective method. The following sites provide excellent overviews on how to approach monitoring a target company.

Researching a Company
http://www.bondra.com/comptraining.htm

Good introduction and checklist for searching company information from Bondra Information Service. In addition to the introduction, it has an extensive list of resources organized by topic and sections with Useful Links for Business Research, Reasons Companies Should Use Research and Competitive Intelligence Information, and Researching an Industry.

Corporate Information
http://www.corporateinformation.com
Contains a list of other sites that offer information about companies, organized by country. "One of the best, if not the best, meta site for finding information on private companies, as well as for international firms," according to Bob Berkman, from *The Information Advisor*.

For tracking a limited number of competitors, I recommend a page of live links to key resources. Live links are in essence "canned queries" on databases, e.g., clicking a header marked "SEC Edgar" would generate a list of all SEC filings for a specific company. In the same way live links can be generated to wire services, analyst reports, and stock quotes, as well as electronic filings for SEC or SEDAR.

How is a live link generated? Simply. A search is done on the targeted company using Company Name or Stock Symbol (the latter is preferable if available). This will produce a URL containing the query. Copy the URL into the HTML code of the intranet Web page and treat it as a link. For example, the following code will generate a link to CNNfn.com where xxxx is the stock symbol and Company is the name of the target:

```
<a href="http://qs.cnnfn.com/tq/stockquote?symbols=xxxx">Company</a>
```

This link will also include access to the following for the same company:
Charts | company snapshot | intraday chart | trading overview | broker center | Wall St. research | analysis | competitors | financials | full report | sec filings

Monitoring the Competitor's Web Site

Competitor's Web sites offer a wealth of information — news of new products, organization charts, list of clients, links to subsidiaries, legacy of contracts, regulatory compliance, etc. The depth and quality of information varies. If one keeps close tabs on a competitor or partner, a number of Internet resources can work to report changes in Web sites.

The Informant: Personal Search Agent on the Internet
http://informant.dartmouth.edu
This free service will save your favorite search engine queries and Web sites, check them periodically, and send you e-mail whenever new or updated Web pages are found.

JavElink
http://www.javelink.com
JavElink is a complete page change monitoring service. The account is free for up to 20 pages. JavElink finds changes daily and remembers the page history, too.

Karnak

http://www.karnak.com

Karnak offers On-Going Offline Web Research. Your search query results are updated and stored on their server. There are e-mail updates. Basic service is free, with fee options for premium services. Registration is required.

Mindit

http://mindit.netmind.com

Service for tracking and monitoring Web pages.

TracerLock

http://peacefire.org/tracerlock/

TracerLock can monitor search engines for you and notify you by e-mail when a new instance of a search term is found.

Company Sleuth

http://www.companysleuth.com

Registration is required to have up to 10 companies monitored. Information is gathered from SEC filings, new patents, stock quotes, analystsÕ ratings, press releases, business news, etc.

Annual Reports

Business libraries have traditionally collected paper copies of annual reports. Many corporate Web sites now post their annual reports. In addition, the following sites can help locate annual reports:

Annual Reports Library

http://www.zpub.com/sf/arl/

Information on how to find annual reports online, tips for reading annual reports, etc.

ARG: Annual Report Gallery

http://www.reportgallery.com/content/glry_a.htm

Annual reports and links to home pages of U.S. public companies.

Barron's Annual Report Service

http://www.icbinc.com/cgi-bin/barrons.pl

This is a free service. You can obtain the annual reports of any of the companies listed. To place the order now, select the companies, and complete the shipping information. Reports will be sent the next working day, subject to availability. You can also order by telephone at 1-800-965-2929 or by faxing to 1-800-747-9384. Open 24 hours, including weekends.

Investor Communications Business

http://www.icbinc.com/index.html

Annual Reports mailed FREE anywhere in the world. Financial information available for over 3,500 U.S., Canadian, and U.K. companies. Annual reports service from *The Wall Street Journal, Barron's Financial Times* (U.K.) *Globe and Mail, Financial Times* (Int'l), and *The Wall Street Journal* (Europe).

IRIN — The Investor Relations Information Network
http://www.irin.com
Online annual reports and shareholder information plus company links and annual report requests for public companies in the U.S.

SEDAR
http://www.sedar.com
SEDAR, the System for Electronic Document Analysis and Retrieval, is the electronic filing system for disclosure documents, such as annual reports, of public companies and mutual funds across Canada.

EDGAR Database of Corporate Information
http://www.sec.gov/edgarhp.htm
The U.S. Securities and Exchange Commission Web site. The SEC is an independent, nonpartisan, quasi-judicial regulatory agency with responsibility for administering the federal securities laws.

Australian Securities and Investments Commission
http://www.asc.gov.au/page-204.html
This is the company search page for ASIC, the Australian Securities and Investments Commission, the down under equivalent to SEC.

CAROL/Company Annual Reports Online
http://www.carol.co.uk
CAROL is an annual report site providing direct links to over 3,000 corporate reports in a single and consistent format, from the U.K., Europe, Asia, and the U.S. It also links to corporations' annual report Web sites.

Personality Profiles

EDGAR ONLINE — People
http://people.edgar-online.com/people/
EDGAR Online People searches U.S. Securities and Exchange Commission (SEC) filings by a person's name.

Patent Searches

Most patents are now available in electronic format, whether through government departments such as the U.S. Patent and Trademark Office, the Canadian Intellectual Property Office, or through commercial services such as MicroPatent. The text of the patent documents is not protected by copyright. Therefore one can compile a very useful database of competitor patents with full-text retrieval. Full-text documents may be viewed online regardless of their native format.

Patents identify a competitor's expertise, its technological know-how, as well as the key players in R&D, and technology targets. As it is costly to obtain a patent, the existence of patents is an

indicator of a given company's priorities, what it considers important enough to protect.

Canadian Patents Database
http://Patents1.ic.gc.ca/intro-e.html
The Canadian Intellectual Property Office produces this database of issued patents and applications for patents made available to the public from October 1, 1989, to the present. This database updates monthly. In the future, CIPO plans to add patent abstracts, as well as providing data prior to October 1989.

U.S. Patent & Trademark Office. Patent Database
http://www.uspto.gov/patft/
This page is the starting point for the USPTO's free patent databases. The U.S. Patent and Trademark Office (PTO) now offers Web access to separate bibliographic and full-text patent databases. These databases cover the period from 1 January 1976 to the most recent weekly issue date (usually each Tuesday). U.S. Patent Classification data in the Full-Text Database (*Issued US Classification [CLAS]*) corresponds to classification data that appears on the printed patent and may not match current classification data. U.S. Patent Classification data in the Bibliographic Database (*Current US Classification [CCL]*) has been updated to reflect the most current Master Classification File (1 February 2000) and may not match the classification data appearing on the printed patent.

esp@cenet Patent Information Service at the United Kingdom Patent Office
http://dips.patent.gov.uk
The esp@cenet patent information service at the United Kingdom Patent Office lets users search in U.K. patents, patents from other European countries, European (EP) patents, PCT (WO) patents, worldwide and Japanese patents.

European Patent Office
http://ep.dips.org/dips/ep/en/dips.htm
Search European (EP) patents, PCT (WO) patents.

IBM Patent Server Home Page
http://patent.womplex.ibm.com
The above sites offer insight into the different facets of a competitor's activities. For each company monitored, you must customize the research design with a systematic structure. No one approach fits all. Variations depend upon the industry monitored, the availability of information for that industry, and more specifically for the individual company. Most importantly, you must deal with the time and financial constraints imposed on the CI group. More funding and more staffing generally result in a richer yield of data.

Analysis

As software evolves, we look toward the arrival of intelligent agents to collect data, manage it into actionable information, analyze the information based on predetermined criteria, and offer solutions for implementation. In today's real world, however, we still require human intervention to negotiate all the steps outlined in the CI roadmap.

At the analysis stage we can use electronic spreadsheets to create IF-THEN scenarios and apply mathematical formulae that will compute financial investment and possible rewards. Based on research we can establish what we do know, the absolutes, the variables, the unknowns. Based on a set of criteria, we can set a range of risk.

An established business maxim warns about the need for two approaches — doing things right, efficiency, and doing the right things, effectiveness. Both of these apply to competitive intelligence. There are never any guarantees and all actions entail risk. At best we hope that Competitive Intelligence activity provides management with educated guesses and likely scenarios.

Further Reading

Competitive Intelligence Magazine, Competia — **http://www.competia.com**
Competitive Intelligence Guide — **http://www.fuld.com**
SCIP Society of Competitive Information Professionals — **http://www.scip.org**
Fuld, Leonard, *Competitor Intelligence: How to Get It; How to Use It*, New York, John Wiley & Sons, 1985.
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