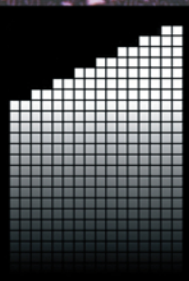
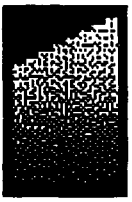
EDITED BY James M. Matarazzo & Suzanne D. Connolly

Knowledge and Special Libraries



RESOURCES FOR THE KNOWLEDGE-BASED ECONOMY



Knowledge and Special Libraries

Resources for the Knowledge-Based Economy

KNOWLEDGE AND SPECIAL LIBRARIES
James M. Matarazzo and Suzanne D. Connolly

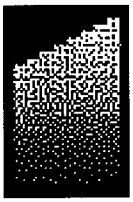
RISE OF THE KNOWLEDGE WORKER
James W. Cortada

KNOWLEDGE IN ORGANIZATIONS
Laurence Prusak

KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL DESIGN
Paul S. Myers

KNOWLEDGE MANAGEMENT TOOLS
Rudy L. Ruggles, III

THE STRATEGIC MANAGEMENT OF INTELLECTUAL CAPITAL
David A. Klein



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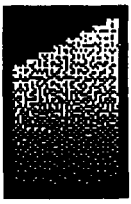
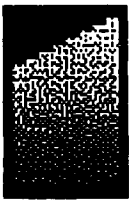


Contents



Introduction

OUR PROFESSION

Libraries have always existed with the sole purpose of serving patrons and providing information. Librarians have always been considered the experts at navigating through countless information sources and finding the correct answer to a request. By possessing these skills, we have always maintained a certain degree of control over our end-users. Librarians understand and know how to use cryptic reference books and complicated on-line databases. We have taken on the role of internal consultants to our clients when they sought specific information. For a very long time, librarians held the key to using these sources, which provided us great job security. This is evidenced in a 1990 study by Prusak and Matarazzo (*Valuing Corporate Libraries: A Survey of Senior Managers*, published by the Special Libraries Association, 1990) where 80 percent of the end-users surveyed said electronic database searching was the most important service provided by the library. But with the dramatic increase in target-marketing and sales of on-line products and services directly to end-users, we are losing many of our clients. In a follow-up 1995 survey (*The Value of Corporate Libraries: Findings from a 1995 Survey of Senior Management—A Follow-up Survey*, published by the Special Libraries Association, 1995), only 48 percent surveyed end-users cited electronic database searching as the most important service provided by the library. End-users feel confident enough to fulfill their own information requests.

What does all this mean? With the growth of all this computing power, end-users feel empowered to sign on and search. This has become increasingly evident through the growth of the World Wide Web. The explosion of the Web has provided everyone with a modem access to the world. Because some end-users are bypassing the library and fulfilling their own information requests, the future of libraries have come into question. Librarians are no longer needed to act as inter-

mediaries between end-users and information. It is no small wonder that so much of the literature focuses around the changes taking place in libraries today. Much of the literature focuses around the creation of new operating models for libraries. Some argue that technology will replace librarians, and others debate that the human component of our work is necessary.

Whatever the outcome of the debate may be, librarians have a critical skill set that can be applied to new environments. All one has to do is look at the phenomenal growth of companies like Yahoo! that have applied traditional library practices such as indexing and classification to Web pages to make navigating the Web easier. We can only benefit from all the dramatic changes taking place. Within this chaotic workplace is opportunity for us to change our traditional mindset and master new skills, which can be added to our existing set. This should not be viewed as a disadvantage but as a liberation from some of our more mundane tasks. Providing information is our most important contribution to the field. When we discuss information, this includes not only third party vendor information but also internal company information. This includes understanding our company and identifying the most important activity it performs, which can be as simple as reading our company's mission statement or having a conversation with coworkers. It's building networks and leveraging them when necessary to provide our end-users the critical, much needed information. It includes making our libraries the crossroads within our corporations. End-users will look to us as liaisons between different parts of the organization.

How we deliver information is changing, but it is our opportunity to do more with information than just passively send it along to our end-users. Who knows better how to manipulate and deliver information than librarians? We have seen the growth of the information technology (IT) function within firms, and although they focus solely on the electronic component, they very often dismiss the relevance of the human element. When someone needs an answer to a question, the fastest, most efficient way is to ask someone not to try to manipulate some database.

REASON FOR THIS READER

The purpose of this reader is to provide my colleagues a well-thought-out and organized selection of articles about our profession. Currently, much of the literature focuses solely on the management of libraries but not on the environment in which libraries operate.

ARTICLE SELECTION

The articles selected for this compendium are drawn from the fields of information and library science and business management. Since most special libraries are corporate libraries, the selections are taken from these different disciplines to

provide perspectives from both a business standpoint and an information management one. The first part focuses on the necessity of information within organizations. It highlights how information is critical to a firm's success. Although information is recognized as a vital commodity, many political implications surround its delivery. More is involved than understanding how to deliver information, such as to whom to deliver it to have an impact. This part brings to light many challenges that librarians face in a corporate environment.

The second part focuses on the positive contributions libraries have made to their firms. Librarians often are not given enough credit for their achievements. Because what we do is so difficult to measure, we are not recognized as valuable contributors. The last part focuses on the future of our profession.

The selections contain many different predictions about libraries and librarians of the future. They focus on new roles and highlight the importance of our profession. We definitely have a strong place on our firm's organization charts, and we must seize the opportunity. With the rapid growth of technology, end-users are being inundated with choices. They need expert advice from experienced practitioners.

INFORMATION AS A STRATEGIC WEAPON FOR THE ORGANIZATION

Librarians have always viewed themselves as separate. We tend to think of ourselves as islands within a firm. We need to step back and look at the big picture. In the first part, the selected five articles focus on the importance of information within a firm.

The first selection by Blaise Cronin and Elisabeth Davenport, "Competitive Edge," reviews how firms maintain a competitive advantage in the marketplace. Companies compete on many different levels such as time, cost, price, product differentiation, quality, and image. Information plays a major role in these different areas. If decisions makers have the correct information they can make the critical decisions. Thus, they can determine whether their firm is a leader or a follower. But senior management can not make good decisions if it receives bad or, worse, "late" information. Often times, management has good information at its fingertips but the challenge lies in the delivery of it. The second selection "Information Politics" by Thomas H. Davenport, Robert G. Eccles, and Laurence Prusak, highlights that firms are very political. People become possessive of what they know and are not willing to share information for fear it will diminish their power base. Sometimes bad information can be given to deter certain power plays in motion. Understanding how a firm operates and its culture often is as important as knowing how to use information. In "Powers of Information" by William Davidow and Michael Malone, the authors emphasize the importance of providing *correct* and *timely* information. So often, decisions are made based on bad information. which produces disastrous results.

To provide a perspective from the field of library science, an article is included stressing the importance of a special library's role within a corporation. Because the use of information cannot be measured, people tend to think of it in the abstract. It doesn't always provide immediate value. In "The Importance of Information Services for Productivity 'Under-recognized' and Under-invested," Micheal Koenig stresses this problem which libraries constantly face. Libraries are synonymous with information but when downsizing comes into effect, the library's budget is first to be cut because people think of information services as a luxury instead of a necessity.

Another important aspect of information management includes the IT function. Traditionally, these groups are very systems oriented, and most information needs can be fulfilled through technology. The selection by Michael E. Porter and Victor Millar, "How Information Gives You Competitive Advantage," contrasts with many of the other selections. It provides the perspective from an IT point of view. The emphasis is focused more on the IT function within firms, but there is the same belief regarding the necessity of information. To survive in the 1990s, firms need to make a commitment to the development of their IT functions. Like libraries, IT departments have been treated as a support service within firms and often experience downsizing during times of recession. Although the delivery of information is very different between librarians and systems groups, the goals are ultimately the same. Both stress the importance of the firm understanding the broad effects and implications of information and how it can create substantial and sustainable competitive advantage.

THE SPECIAL LIBRARY AS A BUSINESS ASSET

Special libraries are important within an organization. They provide services to end-users, which help them to perform more effectively in their work. In "Toward a Better Understanding of New Special Libraries," by Elin Christianson and Janet L. Anrensfeld, the authors discuss the growth of special libraries within many different organizations. Some of the reasons for this growth include management relations, management attitudes, economics, and user commitment. Also this growth can be attributed to the special libraries ability to market themselves better.

Even with all the changes taking place today, the library's mission is still the same to serve and inform. Although D. N. Handy's article "The Library as a Business Asset" is over eighty years old, it still reflects on the necessity of maintaining libraries. The value of a library is not reflected in the size of its collection but on its use. The library is a tool to foster efficiency and enlighten the masses. The challenge lies in shared agreement of this concept to management. Because financial statements only reflect the cost of maintaining a library, it is difficult to see its contribution. It is becoming more difficult to see the value of corporate libraries as time progresses. Some of the changes in the profession are exemplified in two studies done by James Matarazzo and Laurence Prusak. The studies focus on the

value of corporate libraries within organizations. The first was completed in 1990 and a follow-up one done in 1995. Both reflect the changes that have taken place in our profession over the last five years. The 1995 study highlights a disturbing decrease in the number of librarians in corporate libraries. In the 1990 study, 11 percent of the libraries reported a staff of 20 employees or more. By 1995, only 6 percent reported staffs of 20 or more. Some of the changes are attributed to the growth of computing power and the expansion of network capabilities, growth of on-line services and products available to end-users and corporate downsizing and reengineering.

The next selection draws on the writings of Patrick Wilson, a major contributor in the field of library science. His piece, "The Librarian as Information Source," reviews the librarian's role as an intricate part of the library process. Librarians offer not only a wealth of information in terms of navigating through bibliographic sources but also can prove immensely valuable as a sort of corporate memory. They can act as a liaison between the different business units by bringing people together. This can happen, providing librarians continue to be well-informed. As Lynda Woodman points out in her piece "Information Management in Large Organisations," certain factors constrain the development of information management in most firms, such as open communication.

A NEW MODEL FOR SPECIAL LIBRARIES

Having outlined the information environment in the first part and the impact of special libraries within the existing information environment, the last part focuses on the evolution of special libraries. It is clear that libraries cannot remain staid within their organizations. The old model no longer works. The value does not come from our collections but from *us*. Librarians offer so much, and it is time for us to get out of the stacks. This section contains selections that speculate about the future of libraries and librarians within society.

Stephen Abram's article "Post Information Age Positioning for Special Librarians: Is Knowledge Management the Answer?" looks at increased focus on managing knowledge within firms. He contends that since librarians are the experts at managing information; this is the next venue for us to explore. "Future Librarians" by Robert C. Berrings examines our shift from a print society to a virtual one. The selection explores the librarian's role in this new culture. It attempts to answer the questions where we fit and how will we operate in our new environment.

The next selection, "Blow up the Corporate Library," challenges librarians to do away with traditional conventions. It is no secret that libraries play a marginal role in today's corporation, which is frustrating to librarians because we are living in the "information age." Prusak and Davenport believe that the problem is that librarians are operating under the wrong conceptual model of what an information service should be in the 1990s. The authors offer some alternative operating models that will help librarians achieve more recognition with their firms.

Although Prusak and Davenport promote new ways for librarians to succeed within their firms, Betty Eddison, the author of "Our Profession Is Changing," looks at the issue of library services being outsourced. Firms have been moving toward this model with the belief that it is better to bring in services from the outside to achieve quality services than to do everything on their own.

The next selection "Special Libraries at Work: The Library Manager as Part of the Organization Team" advises librarians to take on more of a proactive role. Librarians should manage their departments as a business unit. This includes setting objectives and goals and defining its purpose within the organization. Also, it is necessary to measure achievements at the end of the year and be accountable for successes and failures. The last piece, "Information Management: A Process Review," addresses the human element necessary when managing information. Valuable information often resides in people's briefcases, files, or heads. To leverage this information, it is important for information managers to be familiar with the complex world of information sources, human or otherwise. Since information management is cross-functional, the expertise of others in an organization may be necessary to produce new and more effective approaches and mechanisms to manage information.

SUMMARY

Formerly, a library was viewed as a place for information storage, and information was viewed as simply bits of data. Furthermore, many wielded information as a tool of power, in that those who had more information had more authority. It is becoming increasingly clear that shared collective knowledge of an organization is of far greater value than that of each individual's privately held data. In view of our changing profession, it has become clear that we are being charged with the mission to explore and implement new and innovative methods to encourage sharing and to better manage information.

Part One

Information as a Strategic Weapon for the Organization

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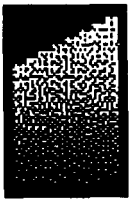

1

Competitive Edge

Blaise Cronin and Elisabeth Davenport

WHERE TO COMPETE

Where do you compete? In a biological sense, by being smart, by being strong, by being attractive (in terms of the criteria of the moment). In a business sense, by being a leader, not a laggard (smart), by being predator rather than prey (strong), by dominating markets (attractive). These areas of competition can be broken into specifics:

- you compete in time
- you compete on cost
- you compete on price
- you compete on product differentiation
- you compete on quality
- you compete on image

What information do you need in order to compete on each of these dimensions? Take cost, for example. Obviously you need to know the cost structure of the industry and how you compare with competitors. What are typical unit costs? Where are cheap sources of raw materials? Where do your competitors source their materials? What are the delivered and installed costs of a substitute product? What are the associated capital costs if the substitute product is to be matched? The information you need to answer these questions will be drawn from a spectrum of in-house experts (accountants, production managers, bench scientists, procurement specialists) and outsiders (sectoral analysts, suppliers, distributors, industry insiders, dealers, ex-employees, consultants), using both publicly available and private sources. Figure 1-1 maps the terrain and players.

What can you do about quality, short of industrial espionage? You can *listen* to suppliers, reverse-engineer products, track the trade press to identify state-of-

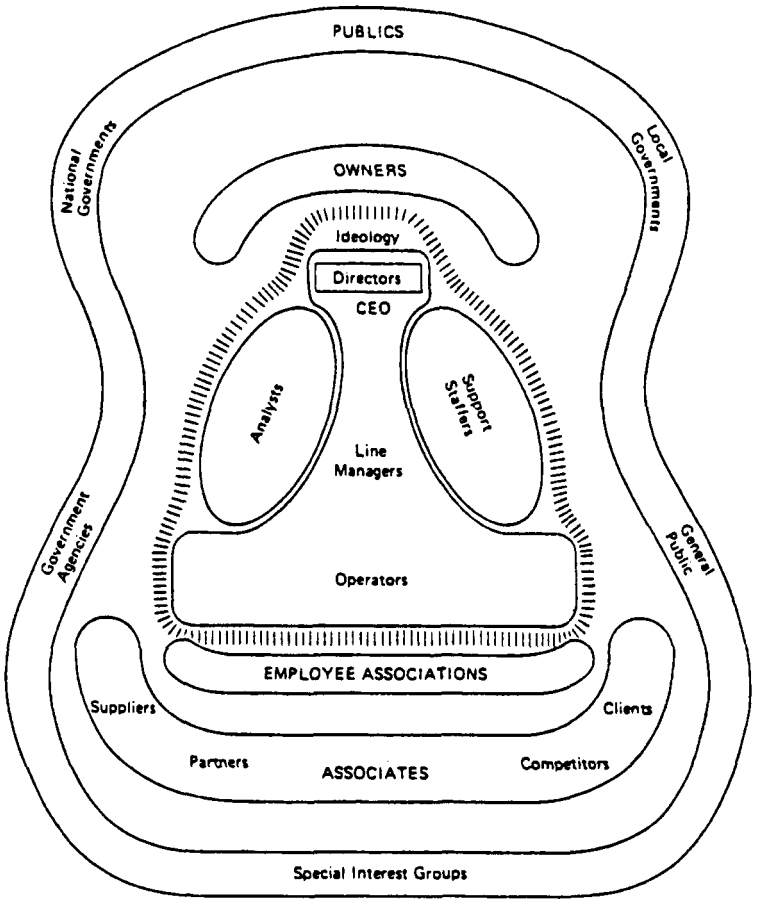

FIGURE 1-1 Reprinted with permission of The Free Press, a Division of Macmillan, Inc., from *Mintzberg on management: inside our strange world of organizations*, by Henry Mintzberg. Copyright © 1989 by Henry Mintzberg.

the-art technologies and services, and, most importantly, *talk* to buyers (wholesalers, retailers, final customers). You can also *look*, by visiting trade fairs, competitor plants and specialist demonstrations. As before, your source mix is heterogeneous; formal, informal, eyes, ears, hands.

How do you reverse-engineer an image? What information do you need to compete successfully where the market is dominated by established brands? How do you compete against exclusivity (the Cartier, Gucci, Ferrari, or Bollinger *marques*)? Paloma Picasso has entered the fragrance sector: like other vendors, she is selling pheromones (chemical attractants) and she is selling virtual social mobility (the fantasy of participation in the Picasso *milieu*). Like her competitors, she can to some extent ensure success by deploying a team of market researchers,

with a battery of market research techniques for in-depth demographic and psychographic modeling. But the real value of the Paloma brand name is exclusivity: she is selling herself (her face and signature dominate the advertisements). A competitor in this case can carry out equally sophisticated consumer research, but must find a name of comparable *cachet* to front the product.

And how do you compete on innovation? By scanning formal sources (technical journals, databases, product announcements), by using futurologists and by tracking the work of those at the research front. A primary formal source is patent literature. Patents and trademarks exist to protect ideas. In a highly competitive industry like pharmaceutics, where innovation tends to drive profitability, knowledge of the prior art is crucially important. The ability to access historic or archival information can thus be as important as the inputs from industrial "spies." The services of informers (a generic for those who gather informal information) will also be of use; moles, and deep throats who work under cover, or scouts (professional barflies) who gather information by osmosis in public places.

SOURCES OF ADVANTAGE

Good coordination is the *sine qua non* of successful competition. Many of our elements of competition will be managed by specialists (accountants know about costs and prices, production managers handle timing and scheduling); their working environment (in terms of structure and technology) must allow them to connect. Generic sources of competitive advantage also include superior strength, nerve and fitness; experience and depth of knowledge; insight into your rival's strengths and weaknesses; inside track on a competitor's intentions; gamesmanship; alliances. These apply as much in business as in sport, or arenas where physical prowess is important.

The athlete's superior strength and fitness translate into manufacturing capacity and reputation, strong market share and cash flow; expertise and depth of knowledge (how to conserve energy; judge conditions) are the equivalents of know-how and proprietary technology; gamesmanship (elbowing or swerving in front of a rival) can be equated with industrial espionage, aggressive advertising ("knocking copy"), or poaching key personnel; alliances (using a pace setter in a middle-distance race; partners in tag wrestling) translate into joint ventures in research and development, marketing, manufacture or distribution, or the creation of a buying group.

Checking the form and track record of a competitor is analogous to carrying out a S.W.O.T. (strengths, weaknesses, opportunities, threats) analysis of industry competitors, while having an inside track on a competitor's intentions (in a takeover bid, for example) means deciphering a barrage of official press releases, company reports and public pronouncements and assessing their reliability. There is, as we said [earlier], a difference between public posture and corporate body language: on occasions, the former will be used to conceal actual strategic intentions. Camouflage counts in battle and in business. The role of information technology

(heavy artillery, to sustain the military analogy) in leveraging competitive advantage is widely acknowledged: "As labour, in the traditional sense, evaporates in most industries, and capital becomes a globally purchasable commodity, IT will become the tool for building competitive organisational behaviour—along with investments in management. Indeed, the computer industry reflects this with direct labour typically representing only 4% or so of sales."[1]

As we have already said, competitive advantage is achieved on the back of differentiation. A firm can differentiate itself from its rivals using a range of strategies, from reducing costs, through focusing (on a particular market segment), to broadening its scope (offering bundled products or services to its customers). A fuller list is given in Figure 1-2.

The Oil Mix

Where you are competing on all or many of these fronts, information management is a major issue. In a large multi-national, intelligence may be as strategically important as it is in the military environment. The logistics are similar: coordinating a complex of sources, channels, feeds and outputs; optimizing the technology platform, and using both activities to establish a competitive edge over your adversaries.

Sources of Differentiation

*** COST (aim for cost leadership)**

*** EXCLUSIVITY (superior product quality)**

*** FOCUS (on a clearly defined market, or market segment)**

*** SCOPE (offer bundled service/product; vertical integration)**

*** CUSTOMIZATION (tailor product to expressed market demand)**

*** DISTRIBUTION (convenience; choice of mode; global reach)**

*** INNOVATION (stay one step ahead of rivals)**

FIGURE 1-2 Sources of Differentiation

In the oil industry, for example, internal information systems are a critical resource as the processes of exploration, extraction, fractionation, and distribution depend on detailed and accurate reporting and coordination. Information intensity is a feature of any company operating in this sector. Competitive edge, therefore, may not depend on external monitoring with a view to knocking out the competition, or securing a geographical niche (unless there is a state monopoly sustained by protectionist legislation), but on prowess in-house (R&D, perfecting a new process, producing a new synthetic material).

It may be linked to quality factors like performing each stage of the production process better, prospecting with fewer misses, extracting with fewer disasters, processing with less pollution, distributing with fewer spills: a strong health and safety record improves street and political credibility. Or (another internal factor) a company may choose to compete on issue management, or the major public concerns of the day (lead pollution; protection of species).

The sector is fiercely competitive and no company can rest on its laurels: since 1980, eleven of the twenty-five U.S. majors have been acquired, merged or sold off. No matter how well a company competes on the factors we have mentioned, forces outside its control can make or break an operation. Oil is a highly volatile commodity, and survival may depend less on cost containment or technological supremacy than on the ability to cope with macro-environmental turbulence (slump in market demand resulting in slashed prices for crude).

In this situation there is a limited number of courses which might put a particular producer at an advantage. A company may choose to enter a cartel, but the advantages here are shared, and may be limited by regulation. What else can a player do? Monitoring of commodity fluctuations can offset the worst of surprises, or a company may choose to lobby at the level of national energy policy (political action committees). Alternatively, producers may choose to invest in macro-level smear campaigns targeted at alternative sources of energy; or they may attempt to boost demand in alternative markets like plastics or animal feeds (diversification strategy).

Whether quality or issue management is the primary focus of competitive activity, detailed and wide-ranging intelligence will be required, what may be called total information, based on systems which can analyze input from wildly disparate sources and global locations. At one end of the spectrum, a company may use lugworms (a common marine species) to detect gas bubbles or leakage; at the other end, expert systems are used as aids to prospecting and fault diagnosis.

Total quality is best assured by integration and interaction. Geographic information systems (GIS), for example, allow major companies to process ever-changing lease maps, to identify optimum locations for gas stations, to create 3-D geological models; these may link with EIS (executive information systems) which can analyze market data, key business indicators, time series data and competitor intelligence (of the non-worm, non-barfly sort). These in turn may integrate with engineering and operations information to ensure that the right spare parts are delivered, or welds accurately performed.

Such capabilities are in place in many companies. Why, in that case, the tanker spillages (Exxon Valdez, Torrey Canyon), the oil platform infernos (Piper

Alpha), the refinery explosions (Whiddy Refinery)? Tolerated because infrequent? Or because they don't happen all at once to the same company? Or because intelligence isn't quite total enough? Reports from Piper Alpha that employees reported tell-tale warning signs two days before the disaster suggest that systems are perhaps not optimally participative, or that at the well-head, they are not heeded. Is human resource intelligence all it should be at this level? Do companies know sufficient (in a non-prurient sense) about employee lifestyles, personality traits, skills and motivations for both the company and employees to develop optimally?[2]

A hot issue at the beginning of the nineties is the greening of oil, as much a question of hearts and minds as of health and safety. What sort of intelligence is needed to ensure that *issues* are managed for competitive advantage? The thermoclines of public opinion must be mapped at consumer level; this is as important as tracking and lobbying those who regulate the industry, but, of course, such intelligence may be gathered by competitors. Differentiating the company by acts of philanthropy may be effective: the public may warm to gestures like British Petroleum's endowment of an ecology gallery in the Natural History Museum in London. A detailed knowledge of how consumers' attitudes to issues differ is important. The values which drive environmental concern vary across geographical regions; in the U.K., for example, the Greens worry about health, a sense of duty drives the Germans, the main concern of the Italians is aesthetics. . . .[3] Case presentation and advertising must pick up such nuances. In some cases, however, psychometry is irrelevant; the critical differentiator is location of a gas station, where convenience ensures brand loyalty.

STRATEGIC INFORMATION

Competition, then, may be grounded in specifics. In the previous chapter [from which this article was taken], we explored ways in which the value of information could be quantified in terms of these specifics (time saved; cost reduction). We stressed throughout, however, that many of the benefits of information investment are intangible, and can only be expressed in terms of open-ended variables, like increased market share, whose full value will only be realized after the event. We address such soft variables in this chapter, what might be called the macro elements of competition which affect overall strategy.

The specifics, or micro elements, may be configured to create advantage where it matters most. The *strategic gameboard* [see Figure 1-3] can focus your thinking. The specifics may also be seen as weapons in a war, or pieces in a game. Judicious investment in information and information systems impacts each of these micro elements, but investment, as we have already stressed, will only be effective when linked to business objectives. Given this perspective, the manager's concerns will not be saving dimes and adding bells and whistles, but major issues, like

- the shape of the market
- optimizing intelligence
- competitive posture
- playing the system
- trading risks against rewards.

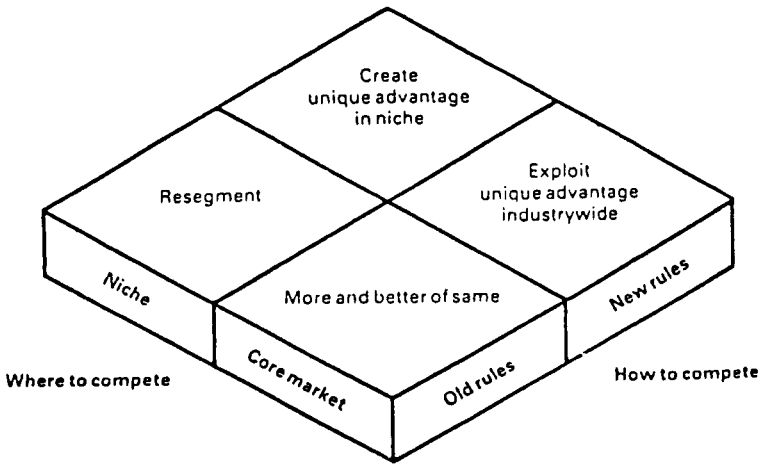

FIGURE 1-3 Reproduced from L. Bergsma, From market research to business research. *McKinsey Quarterly*, Autumn 1984, 50–62. Reprinted by permission of McKinsey & Company.

THE SHAPE OF THE MARKET

In economic terms a market is an exchange mechanism, which is shaped by the information available to the participants. In an ideal market, the consumer is assumed to make a rational choice on the basis of perfect information. This, in reality, is impossible to achieve, though some systems approximate to the ideal more closely than others. The types of information which shape perceptions and behavior in markets are what we have labeled the micro elements of competition, cost, differentiation, quality.

Price, for example, is a key determinant of propensity to purchase; in a complex and fractionated market, it is unlikely that the consumer can even approximate to full information. A manager, in contrast, who has greater knowledge of overall price structure than both the consumer and rival producers, may be able to compete effectively on this basis.

A classic example is the use of customer reservation systems in the airline industry, where computerization has produced intense competition on price. In the short run this has benefited the air traveler (predatory pricing resulting in huge discounts; the introduction of frequent flyer schemes), but the pressure on operat-

ing costs is such that airlines with tight margins, if not forced to the wall (Braniff, People Express, Laker Airways), will tend to cut back on safety levels (bend or flout Federal Aviation Administration [FAA] rules) and defer investment in replacement planes.

The deregulation of the U.S. airline industry illustrates this scenario: the early euphoria which greeted bargain basement pricing was followed by a wave of discontent with declining service standards, widespread labor unrest, protracted industry restructuring and the emergence of an effective oligarchy.

OPTIMIZING INTELLIGENCE

In warfare, intelligence shapes the conduct of battle, and the sum of what is known, or perceived as known, determines the way in which forces are mobilized and deployed. Not always, of course. With better intelligence, we might never have heard of Custer, the Light Brigade, or Pearl Harbor. With better intelligence on ISC Technologies, Ferranti International would not have lost $350 million *and* had to sell off its radar business to GEC in 1990. The cost of ignorance (blind spots), whether in war or business, can be spectacular. Lives and careers may be lost.

We have identified a range of techniques and sources which shape the design of competitor intelligence systems (CIS). Such systems, however, are but one facet of an organization's IS (information systems) portfolio. Herein lies the paradox: intelligence shapes business strategy which in turn determines IS investment priorities, yet the funding case for CIS invariably has to be argued along with all other systems proposals.

Intelligence has two main purposes: warning about enemy intentions, and long-term assessment of the enemy's capabilities. The sources of intelligence vary. Some may be covert (and fuel campaigns of subversion or destablization); some may be overt (hard evidence, by direct or remote observation of the adversary's real intentions). Intelligence involves both present perception, and prediction.

Present perceptions may be distorted for a variety of reasons. Preconceptions act as filters of what may be essential information (the "impossibility" of *glasnost* in the U.S.S.R. resulted in disregard of early signs of such a development). Distortion of perception may occur because of what is known as action-reaction interference: "The more absorbed intelligence becomes in understanding the uniqueness of its target, the more it may forget how far the target is responding to its own perceptions of the other side."[4]

In other words, the observer inevitably influences the situation observed. There is a potential dissonance between the intelligence agents and policy-makers; if relations are too distant, the first group will have little credibility in the eyes of the second; if they work too closely together, the second group may bias investigation. Many intelligence operators favor interpretation in terms of worse case scenarios, which may encourage unreasonable pessimism or paranoia. Commercial paranoia, in contrast, may be not only healthy, but necessary (the consequences are less devastating than those of military paranoia).

A crucial component of intelligence is self-awareness or the capacity to see ourselves as others see us, a blind spot in many organizations. Where an enemy's movements are a response to their perception of your own stance, they may take action that is labeled by you "irrational" or "aggressive." In their terms, however, they have made a rational defensive move. In the business field, the capability for self-awareness has been labeled defensive competitor intelligence, that is monitoring and evaluating your business activities as your competitors might perceive them.[5] Routine scanning of standard sources for competitor intelligence on one's own company, and analysis on the same terms as information on rivals, may provide unexpected and important insights.

Self-awareness is now part of standard management training, yet is rarely discussed in the context of business strategy. Figure 1-4 is a simple tool which

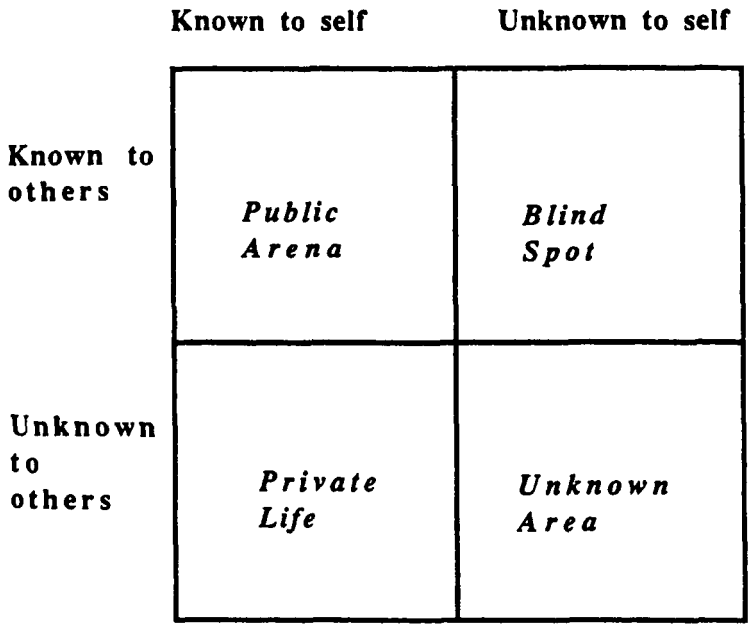

FIGURE 1-4 Johari Window. Reproduced from J. Luft, *Of human interaction.* Palo Alto, CA: Mayfield, 1969. Reprinted by permission of the author.

helps to identify blind spots. Where can you get reliable information on how the world sees you, given the prevalence of sycophancy or telling people what they want to hear? Potential sources include press clippings, salesforce gossip, feedback from user groups, customer complaints, employee suggestions, analysts' advice to investors and stockholders, shareholder comments at the company's annual general meetings.

If realistic assessment of the existing competitor environment is difficult, prediction is more so. Past actions may have been intentionally misleading, intended to feed a false profile. Current statements of intent may be equally devious.

THE JAPANESE WAY

Japan has had minimal defense obligations since 1945, and the country's resources have been concentrated on commercial, not military, superiority. The Japanese approach to competitors is pragmatic, immediate and grounded in detail; it resembles the body search, rather than large-scale reconnaissance (an analogue of the activity which characterizes many intelligence or long-range planning units in Western corporations, where the military model is considered exemplary). The story of Honda's entry into the U.S. biking sector is one of marketing's classic folktales: when their initial model failed (a sure seller in Japan, because its handlebars resembled the eyebrows of the Buddha), the pioneer salesforce camped on the street, and observed the habits and the machines of their clientele . . . the rest is history.

Factory visits and trade fairs are primary hunting grounds, rather than the conference or seminar circuit favored by many marketing units in the U.S. or U.K., and focus on detail is complemented by wide diffusion of observations, with iterative and flexible discussion, role playing and interpretation. Strategy formulation admits many degrees of freedom and multiple perspectives are held to be a source of strength, not confusion. The same questions will be asked over and over again, or with different questioners and respondents to catch every nuance and shift in perspective. These methods harvest information on rivals, and on how other groups see the company (suppliers or distributors for example).

SOCIAL INTELLIGENCE

The approaches outlined in this chapter can be also be applied at the level of the state. Take the case of a developing nation, trying to sustain its commodity exports, build up indigenous manufacturing capability, identify alternative sources of energy, or attract foreign direct investment. Where does it turn for reliable information, trend data, intelligence and technological know-how? What kinds of information systems and intelligence effort will be needed?

The problems facing these nations are orders of magnitude greater than those facing industrialized (or newly industrialized) countries. As a bloc, develop-

ing countries account for more than 70 percent of world population, 20 percent of trade, 11 percent of industrial production, 7 percent of the global telecommunications infrastructure, less than 6 percent of the world's computers, 5 percent of published scientific output, and 3 percent of R&D expenditures.[6] The gap between first and third worlds can be measured using a variety of indicators such as productivity rates, output levels, capital formation, average income, morbidity and mortality statistics, quality of life factors, and so on. But the divide between the two worlds is also a function of the massive cognitive and social intelligence gaps which exist on almost every conceivable dimension.[7]

At this level, the game is multi-form: it includes aid negotiation, commodity trading, mega-marketing, foreign direct investment, dumping, debt restructuring, price fixing. There is a motley cast of players: transnational corporations (TNCs), non-governmental agencies (NGOs), donor nations, trading partners, creditor banks, lobbyists, peripatetic consultants. The rules are complex, and prone to flux (price taking, debt rescheduling, trans-border data flow, local content levels, nationalization, sequestration). It is a game in which the long-term stakes are high.

Knowledge of the rules and sanctions is important; so too, insights into the strategic thinking and intentions of competitors. In this game, intelligence quality is the difference between losing and losing hopelessly. A panoptic model of a development-orientated intelligence effort is shown in Figure 1-5. The scope ranges

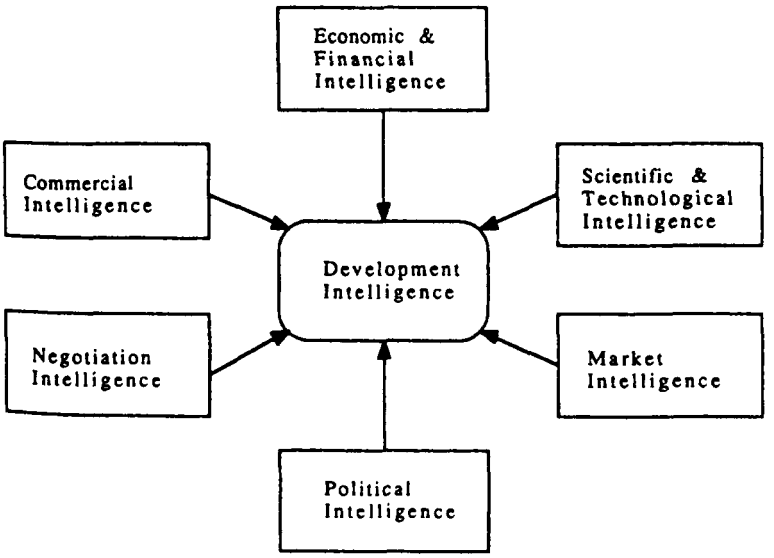

FIGURE 1-5 Components of a Development-Orientated Intelligence Effort. Reproduced from N. Jequier and S. Dedijier, Information, knowledge and intelligence: a general overview. In: S. Dedijier and J. Jequier (eds.), *Intelligence for economic development: an inquiry in the role of the knowledge industry*. Oxford. Berg, 1987, p.12. Reprinted by permission of the publisher.

from intelligence on multinationals (track record; intentions; commitment; sensitivity to local conditions; unionization; screwdriver plants or local R&D) through information on science and technology (emergent technologies; "hot spots"; technology licensing opportunities; standards; patenting trends) to market intelligence (shifts in consumer behavior; niche markets; low-cost suppliers).

Systems can be set up to track and store information under each of these headings, but crucial insights or leads will often depend on links being made between disparate elements (the compound value factor we discussed earlier). The results of current research in advanced materials science, for example, should not be stored in a vacuum: new ideas and methods emerging from research laboratories impact on a country's technological and industrial base, and should ultimately translate into marketable products (ranging from consumer goods to the aerospace sector). Intelligence implies connectivity: facts and figures culled from discipline-specific databases should be married to rumors picked up by overseas trade attachés, the results of sectoral studies and other relevant information.

The dice are loaded against third world players, and unless they can change the rules of the game or outflank the competition (powerful and possibly exploitative inward investors), the development gap will widen.[8] How can such countries improve access to knowledge and ideas produced in industrialized nations? How can they hope to penetrate the charmed circle? How can appropriate technologies and processes be identified and successfully transferred? How can home-grown technological capability and skills be fostered and diffused more effectively throughout society? How can indigenous reconnaissance capability be improved?

By changing attitudes. First, government has to recognize that intelligence is "an instrument of development" just as it is an instrument of warfare; second, it must be persuaded of the need for a "development orientated intelligence policy";[9] third, there is a compelling case for reconceptualizing technology transfer as *information* transfer, an idea which the givers of skills and equipment seem to resist; fourth, terrain opacity has to be reduced, if innovations are to spread, information is to be shared and investment encouraged; fifth, government has to realize that strategic information systems planning can contribute to economic development.

Take the last two of these: why have the results of technology transfer so often proved disastrous for the receiver nation? Why so many aborted projects, so many white elephants? One reason is the historic failure to perceive technology as *embodied information,* whose effective transfer depends on the absorption capabilities of the host nation. Technology transfer is a multi-stage, multi-level process of domestication, indigenization and diffusion, in which the quality of information about the technology, its suitability and adaptability, potential and likely secondary local impacts, in addition to intelligence on supplier reliability and motivation, are crucial to smooth transfer.[10]

Secondly, why is it that the great majority of strategic information management systems (SIMS) have been implemented in (a) the private sector and (b) developed economies? By shifting the focus from profit to the promotion of economic health, the fundamentals of SIMS for competitive advantage can be ap-

plied in a developing country context. Palvia,[11] in fact, has adapted the ideas of Porter and others to construct a conceptual model for SISEDs (strategic information systems for economic development). In addition to the three forces of suppliers, buyers and rivals, government and logistics have been factored into the matrix to take account of third world realities. The result is a set of tools for identifying competitive advantage opportunities, one of which, a scanning grid, is reproduced as Figure 1-6.

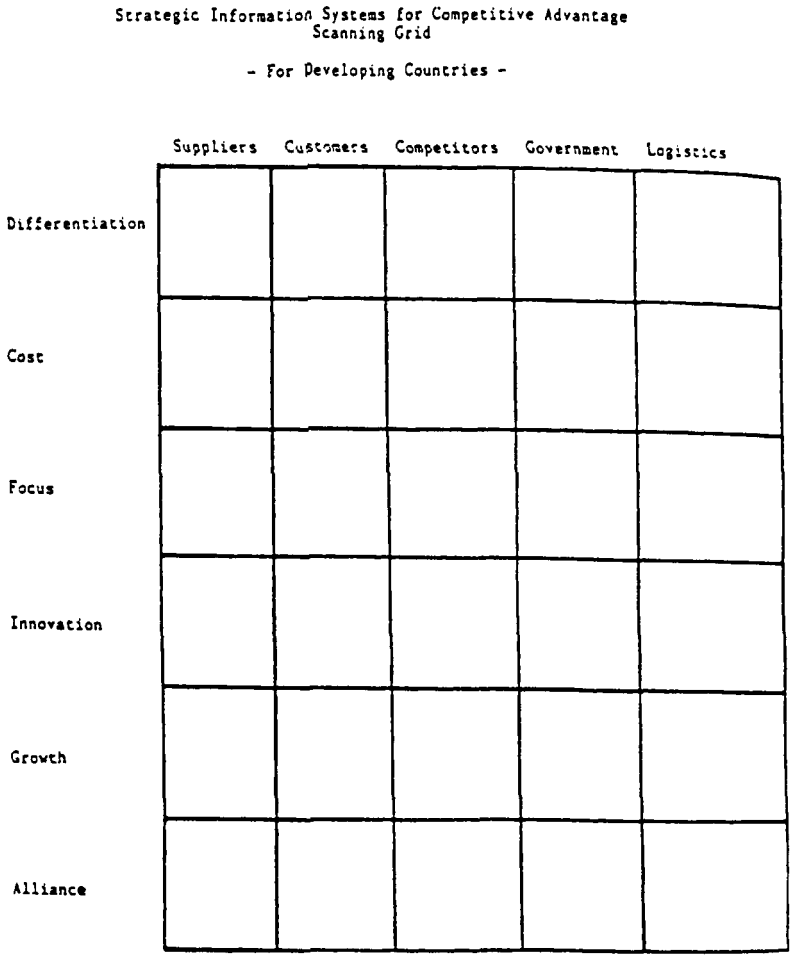

FIGURE 1-6 Strategic Information Systems for Competitive Advantage. Scanning Grid—for Developing Countries. Reproduced from P. Palvia, S. Palvia, and R. M. Zigli, Models and requirements for using strategic information systems in developing countries. *International Journal of Information Management* 10(2), 1990, 117–126. Reprinted by permission of Butterworth Scientific Ltd.