The role of scanning in open intelligence systems

Kermit M. Patton[*]

Scan Program, SRI Consulting Business Intelligence, Menlo Park, CA 94025, United States

Abstract

Every month, SRI Consulting Business Intelligence (SRIC-BI) professionals assemble more than 100 short abstracts of developments that they perceive to be signals of change, discontinuities, inflection points, outliers, or disruptive developments. The effort is part of a continuous scanning process and Scan program that allows SRIC-BI to gauge the ongoing turbulent confluence of culture, commerce, and technology that defines today's business environment. For more than 25 years, scanning has played an essential role in SRIC-BI's and SRI International's foresight capabilities by providing a systematic means for surveying the broad external environment for change vectors. Traditional monitoring processes in most organizations are largely arbitrary, depending on what concerned individuals or leaders in the organization are reading, thinking about, and sharing informally with each other. But in today's world, *arbitrary* is insufficient. No foresight function can operate with confidence without a disciplined process for spotting new patterns of change and bringing those issues into the organization for early consideration and action. This article describes the scanning process as SRIC-BI practices it, the importance of open intelligence systems, what benefits the scanning process can provide to organizations, and what problems organizations typically run into when setting up scanning systems.
© 2004 Elsevier Inc. All rights reserved.

Keywords: Scanning process; Open intelligence systems; SRIC-BI

1. The premise

Predicting the future is impossible. The inherent unpredictability of technology development and commercialization processes, legal and regulatory developments, and changes in cultural factors and

* SRI Consulting Business Intelligence, BS268, 333 Ravenswood Ave., Menlo Park, CA 94025, United States.
  E-mail addresses: kpatton@sric-bi.com, www.sric-bi.com.

public opinion means that highly structured strategic plans are limiting if not downright dangerous. Maintaining the flexibility to accommodate constantly changing market dynamics has become more important than ever in planning processes. Constant monitoring of the commercial, cultural, and technological environments is essential to maintaining the needed flexibility. Such monitoring of the external environment is the foundation of an open intelligence system. The open intelligence concept contrasts sharply with the more common concept of targeted intelligence or the understanding of business intelligence as an analytical function dealing with internal corporate data. Most organizations fail to perform such external monitoring or open intelligence functions in a consistent or systematic way.

For 25 years, SRI International and subsequently SRI Consulting Business Intelligence (SRIC-BI) have used a scanning system to provide foresight capabilities and to gauge changes in the commercial, technical, and cultural environments on a monthly basis. James B. Smith originally brought the scanning process to SRI International in 1979 with the assistance of the futurist consulting group Weiner, Edrich, Brown, Inc., which directed the first industry-wide futures research program, the Trend Analysis Program of the American Council of Life Insurance. SRIC-BI's Scan program has evolved a group process that depends heavily on human expertise and pattern-recognition abilities to identify early signals of change, discontinuities, inflection points, and disruptive forces in the business environment. The scanning process is the foundation of the open intelligence services that the Scan program provides to its clients. This paper describes the scanning process and how it works.

Uncertainties and risks have proliferated during the past decade as a result of the increasing complexity of and turbulence in the marketplaces in which organizations must now succeed or fail. Globalization, privatization, deregulation, competition, and an acceleration of the advances in science and technology all are turning traditional hierarchical or linear markets, supply chains, and organizations into complex, interdependent, organic systems that demonstrate nonequilibrium dynamics typical of ecological systems. Such systems are susceptible to nonlinear perturbations that can have far-reaching or even catastrophic effects in business systems but that are difficult—if not impossible—to predict.

The commercial environment is constantly evolving through the interactions of thousands of variables—from market-driven pricing processes to government regulations, from consumer opinion to market competition, from international trade flows to the development of new materials—that defy comprehension, let alone quantitative analysis and prediction. As the ability to predict outcomes decreases, the risk of deciding to pursue a particular course of action increases. Analyst Mark Buchanan, writing in *strategy +business* [1], refers to these new types and levels of risk as *interdependent risks*. Interdependent risks constitute a form of risk that requires adjustment on the part of managers and planners accustomed to more direct and predictable cause-and-effect chains of events and their associated risk assessments.

As the complexity of the business environment increases, successful businesses will be those that turn themselves into adaptive systems that work in an organic manner to find, interpret, and act on cues from an ever-changing environment. Stephen Haeckel [2], author of *Adaptive Enterprise*, notes, "Adaptive organizations require, first of all, a systematic ability to search out, capture, and interpret clues about emerging and as yet unanticipated customer preferences. They must employ equal vigilance both in sensing developments that might enable new capabilities and in anticipating environmental changes, such as regulatory or political dynamics…. [S]ense-and-respond firms must excel at sensing subtle change earlier and in responding to it faster than do their competitors." The

marketplace is a turbulent confluence of commercial, cultural, and technological forces. The most important tools for remaining afloat and thriving in the turbulence are a constant awareness of the changes going on around your organization and the ability to sense, make sense of, and adapt to these changes.

Although a number of dramatic new information-technology (IT) and artificial-intelligence (AI) tools are emerging to perform monitoring and analysis functions, the complexity and breadth of the issues and forces driving marketplace turbulence militate, for the time being, against complete dependence on such tools. Until machines can read, process, integrate, and analyze the breadth of topics and treatments in a typical daily newspaper, we'll need to depend on humans for scanning, particularly in the case of open intelligence systems. Open intelligence systems need to be able to identify new patterns as well as track existing (continuously evolving) ones.

Scanning depends heavily on human cognition and pattern-recognition capabilities. As Ray Kurzweil points out in his *The Age of Spiritual Machines* [3], the bulk of human neural circuitry excels at pattern-recognition functions. The human brain cannot approach the speed at which computers process digital computations serially because neurons have a relatively long "reset" time of 5 ms. But with an average of 1000 connections between each neuron and its neighbors, the brain's massively parallel architecture can employ thousands of neurons at once in pattern-recognition tasks. Human evolution has designed us to excel at recognizing patterns, interconnections, and synergies among massive amounts of data and inputs. The Scan process provides a framework with which we can regularly and systematically apply the pattern-recognition capabilities of up to 30 professionals to the task of identifying important potential changes in the business environment.

Scanning also depends heavily on group processes. The coming together of experts from a variety of technical and scientific domains as well as from a variety of business-process arenas (including research, marketing, management, and administration) to discuss the signals of change that scanning turns up is productive. The diversity sets up creative synergies that generate new ideas and a system of checks and balances that harnesses professional expertise to evaluate those ideas. Scanning provides a framework with which a company can regularly and systematically marshal the pattern-recognition capabilities of a group of professionals to identify important changes in the business environment and evaluate them in the context of the company's strategy, competencies, and mission.

2. The promise

The organizations that survive today's marketplace turbulence will be those that can adapt rapidly to change. The organizations that thrive in today's turbulence will be those that live for change, are constantly aware of developments emerging beyond their own particular current domain, and recognize oncoming threats in time to turn them into opportunities. Organizations that implement systematic and ongoing processes such as open intelligence systems to tap the external business environment continually for signals of change increase their odds of adapting successfully.

The management literature is replete with admonitions to pay attention not only to competitors but also to external factors, discontinuities, and signals of change. The very title of Andy Grove's (former chairman and CEO of Intel's) management book *Only the Paranoid Survive* [4] trumpets the premise that a necessary behavioral tic of successful managers is the constant, furtive glance over the shoulder to avoid being blindsided by circumstances or competitors. Dorothy Leonard-Barton, in

her *Wellsprings of Knowledge* [5], maintains that the process of introducing external streams of knowledge into a company is just as important as managing information flows within the company.

Simple awareness of signals of change is insufficient in and of itself to provide an organization with a competitive edge. A futures orientation among decision makers is necessary to take advantage of foreknowledge of change. Eric D. Beinhocker and Sarah Kaplan in *McKinsey Quarterly* [6] talk of creating "prepared minds" so that "executives have a strong grasp of the strategic context they operate in *before* the unpredictable but inevitable twists and turns of their business push them to make…critical decisions in real time."

David Snowden, director of IBM's Cynefin Centre for Organisational Complexity in Cardiff, Wales, advocates a form of what he calls "immunization" against the shocks of a constantly changing business environment. He believes that organizations should regularly expose employees to chaos [7]. The procedure avoids *entrainment of thinking*, a condition in which successful approaches and ideas from the past discourage employees from innovation. Scanning processes can provide quick, occasional doses of chaos to employees and managers.

Management literature is short, however, on practical solutions for methodically gleaning early signals of change from the surroundings or for cultivating a futures orientation in employees and managers. The companies that currently incorporate externalities well usually depend on a leader at the top of the corporation who performs the scanning function on a continual basis, has an inherent futures orientation, and imports the knowledge that he or she develops into the decision-making process intuitively. Scanning processes are tools for systematizing the collection of early signals of change and for nurturing a futures orientation more broadly in an organization.

3. The process

The scanning process is necessarily a continuous one. Although our description must begin with a certain point in the process, the process operates continuously as it has at SRI International and SRIC-BI for the past 25 years. Various parts of the process can occur simultaneously and in concert with each other. The constant surveillance of the external environment on the part of scanners, the rhythm of monthly meetings to discuss new data points, and the documentation of findings for management are all part of the normal, ongoing cycles of the scanning process. Over time, participants learn that change rather than stability is the coin of the commercial realm and that metamorphosis is the most common currency.

Our description of the scanning process begins with the collection of data points from the business, cultural, and technological environments. The data points can be events, developments, opinions, research findings, or products that participants believe to be early signals that portend significant changes. They most typically come from publications but can also derive from personal experience, interpersonal networking sources, or conferences and symposia. Other ways of describing what we are looking for include:

- Signals of change
- Discontinuities
- Outliers (events or developments that are off the current trend line)
- Items that defy conventional wisdom

• Inflection points
• Disruptive developments or technologies.

Participating scanners cast their nets broadly to bring in signals of change from various domains, including:

• Politics
• Regulation
• Culture
• Consumer behavior
• Public opinion
• Business processes
• Science
• Technology.

The breadth of scope inherent in the diversity of the categories represents one of the most important strengths of the scanning process. The turbulence of the marketplace consists of the confluence of factors from all these categories. Anticipating the fate of particular products, services, or innovations in the marketplace depends on reading the early signs from and interactions among all these categories (see Fig. 1). Organizations that focus on their own industries and areas of expertise will miss important signs from the broader business, cultural, and technological environments.

The scanning system captures and assembles the data points in the form of short abstracts, which the scanners enter in an online system using standard Web browsers. An abstract includes source information, a short summary of the article or event in question, and a description of the implications that the scanner believes that the item presents. The system assigns each item a reference number and stores each abstract as a separate Hypertext-Markup-Language (HTML) page. The abstracts are searchable by date, author, source, topic, or scanner. Users can assemble any number of abstracts on any topics into a customized set of abstracts. SRIC-BI's system operates on a monthly schedule—at the end of each
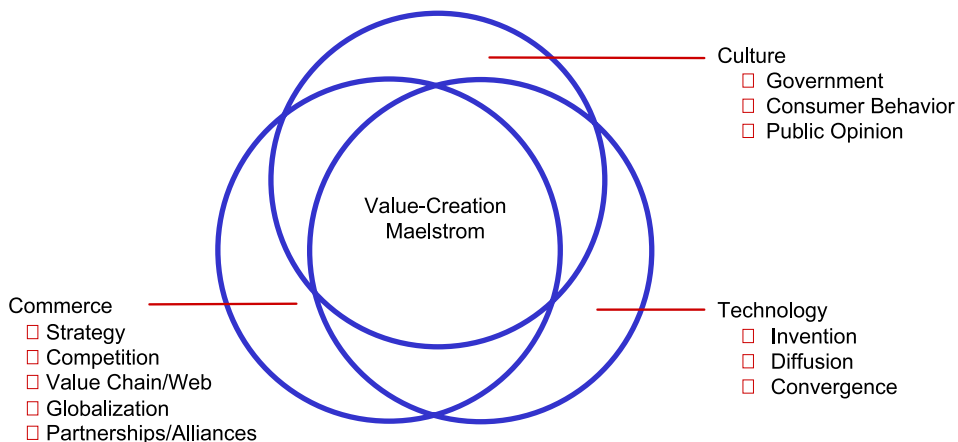

Fig. 1. The complex market environment.

month, the database administrator closes off submissions for the month and directs the continuing stream of abstracts into a new set for the next month. SRIC-BI employees generate more than 100 abstracts each month. Typically between 20 and 25 employees contribute abstracts. Employees in SRIC-BI's Tokyo, Japan, and Croydon, England, offices contribute abstracts.

What makes a good Scan abstract? New employees at SRIC-BI generally participate in the scanning process for 6 months before managing to submit consistently valuable abstracts. Developing an intuitive appreciation for unusual patterns and learning to distinguish between truly innovative developments and those simply repackaged by promoters can take a considerable amount of time, discipline, and experience. An employee's first submission might concern a new microchip from Intel that is twice as fast as and half the size of its predecessor. But that microchip is directly on the projected development curve of microprocessors. Moore's law predicted that chip 20 years ago—not quite what we are looking for. After 6 months, the same employee might submit an abstract on the development of a microchip that contains system-on-a-chip components to enable WiMax wireless broadband access to homes and offices—a much more interesting development in terms of enabling dramatic new products and services in a wide range of markets. Both Intel and Fujitsu Microelectronics are in fact working on such chips.

One recent Scan abstract described how Tetsuya Tada, chief engineer for the development of one of Toyota's recent concept cars, complains that young people today pay more attention to cell phones than to cars. The scanner claimed that the abstract implied that cars compete in the marketplace with cell phones, an apparently absurd assumption given that the prices and functions of the two items are so dramatically different. But if, just for the moment, we entertain the assumption as a possibility, we become aware that products in today's highly competitive environment are increasingly competing with products outside their category for the attention of the consumer. In an attention economy, products compete with every other product on the market. If a company wants to attain mind share in a large segment of the consumer market, concentrating on flash instead of function when making technology decisions may be an appropriate strategy. The abstract is valuable because it questions conventional wisdom and broadens the reader's concept of competition beyond the traditional bounds.

Other abstracts look to the long-term future. Examples include abstracts that speculate about currently gestating technologies with the potential eventually to have an impact similar in scope to that of the Internet in the past 20 years. In other words: What's the next development that will be as transformative as the Internet was? Current odds-on favorites among some scanners involve research initiatives funded by the U.S. Defense Advanced Research Projects Agency (DARPA; the same group that funded early Internet development) that are looking beyond the packet-switching architecture and technology to explore ad hoc wireless-mesh networks that allocate spectrum on the fly. The networks are self-organizing and self-healing and depend on a peer-to-peer architecture that avoids routing bottlenecks typical of the current Internet and that can theoretically achieve improvements several orders of magnitude better than current capabilities.

Some abstracts are what we call reframing abstracts. They help clients think in new and different frameworks. For example, one abstract about Fair, Isaac and Co. (known for generating algorithms to check consumer creditworthiness) points out that Fair, Isaac creates and sells algorithms the way Intel creates and sells microchips—the abstract reframes the reader's concept of algorithms as a product. The observation is a to-the-point example of the continuing expansion of the information economy into the broader service economy and of what new products will be valuable in that economy. Another abstract

helps clients reframe design issues by citing designer Dan Formosa's observation that one could effectively disable a major portion of the population by printing the *New York Times* in 4-point type (a very small type size). Formosa's points are that many disabilities derive from the user's environment and that designers frequently have much to say about what that environment looks like [8].

Many abstracts deal with innovative business processes and models and even philosophical shifts such as those currently occurring surrounding the concepts of intellectual property. Open-source software; variable, electronically mediated reproduction and use rights for digital content; and peer-to-peer file-sharing networks all contribute to an ongoing turbulent reassessment of traditional concepts of property rights. Other recent abstracts have dealt with futures markets in which experts "bet" financially on particular outcomes in the future. The results can turn out to be more accurate than those of "financially uncommitted" (nonbetting) experts. Software systems are even available to set up futures markets that allow employees to bet on the market success of various products a company has in development. What better experts than the employees creating and selling the product or service?

Scientific and technical developments are always fair game as interesting abstracts. Rapid developments in neuroimaging research have generated abstracts on neuromarketing, neuroeconomics, consumer behavior, and branding. Continuing advances in fields of complexity, nonlinear dynamics, and chaos theory—in scientific as well as business applications—turn up in abstract sets on a regular basis. Biotechnology and nanotechnology topics are continuing players in the abstract sets. Synthetic biology—the prospect of engineering cellular processes to operate as bioreactors, labs in a cell, or manufacturing mechanisms—is one of the latest arrivals to the abstract sets.

Cultural topics are of huge importance in the abstract set because they help define the environment in which commercial products must succeed. A plethora of abstracts on advertising indicate that tectonic shifts are under way in the marketing and branding domain. Advertisers are struggling to catch consumers' attention even as consumers find new ways to avoid ads that they do not want to see. The dramatic disparity between the behavior of Baby Boomers currently approaching retirement and the behavior of traditional retirees is yet another cultural topic in the abstract sets.

Many abstracts consist of short statements of fact that have significant and wide-ranging implications. In the United States, health officials estimate that 41 million people have pre-diabetes. In the United Kingdom, people older than age 50 account for 80% of the national wealth and 40% of consumer spending. Ocean biologists studying the Sargasso Sea have only recently discovered 1.2 million new genes (including 800 new genes for photoreceptors) representing 1800 new species. The *Implications* sections of these abstracts are far longer than the *Summary* sections.

In SRIC-BI's scanning system, each month's set of 100-plus abstracts serves as the starting point for a monthly open-ended discussion and brainstorming session by analysts, researchers, managers, sales and marketing staff, and consultants. SRIC-BI's staff in Croydon, England, holds a bimonthly Scan meeting.

The meetings consist of two parts. The first part is facilitated rather than led and takes the form of a free-floating discussion of any of the Scan abstracts that participants find provocative, interesting, disturbing, or important. The facilitator discourages judgmental, idea-killing behavior and steers the discussion clear of extended exchanges of opinion or philosophical discussions. Politics and philosophy are definitely fair game, but political or philosophical arguments simply waste the group's time. Lively exchanges of opinion are not uncommon. Frequent calls by the meeting facilitator for new clusters of abstracts or discussion topics are necessary to mine the month's abstracts as thoroughly as possible for signals of change. The facilitator keeps the discussion reasonably close to

the abstracts' data points to make sure that the meeting does not degenerate into a discussion unrelated to the real-world marketplace and client needs.

This paper describes just two of the many ways that scanning can lead to valuable insights. In the first method, a cluster of several abstracts characterizes a conceptual overlay that an organization can lift off the scanning data and apply to its own processes, products, or services. This type of clustering allows companies to gain ideas from other industries or other product domains. Fig. 2 demonstrates this type of overlay or conceptual pattern. Three abstracts from different areas—air-quality assessment, health care, and the auto industry—demonstrate new applications of continuous monitoring. Continuous monitoring, as a concept, is not new of course—thermostats use continuous monitoring to control the temperature of rooms. But the three abstracts demonstrate how new networking, computing, and sensing technologies are dramatically expanding the capabilities of and domains in which continuous-monitoring concepts can operate. An awareness of such new capabilities serves as a jumping-off point for generating ideas for new technology-based products and services.

The second method operates in a cross-category manner to help scanners and planners identify the defining forces that are operating in the business environment. When abstracts on particular topics (such as wireless technologies or privacy concerns) constitute clusters that cross industry-domain categories (such as health, education, information technology, retailing, and government), the analysts know that the technology or topic will have widespread impact (see Fig. 3).

The second part of the meeting consists of identifying the topics and clusters from among the results of the brainstorming session that bear further analysis and research for potential presentation to management. Meeting participants place the topics on a very rough ranking spectrum between "actionable" and "speculative" simply as a means of providing a perspective on a time frame for projected impacts.

First-time observers or participants in the scanning process frequently comment on the fact that the meetings are dramatically different from meetings that people typically experience in a corporate setting. The meetings are nonhierarchical because experienced participants know that the process works best if participants value each other's contributions regardless of rank in the organization. The meetings can be relatively self-regulating when the players have sufficient experience to know what kind and what level of discussion and participation are most productive. The meetings include a wide variety of expertise and
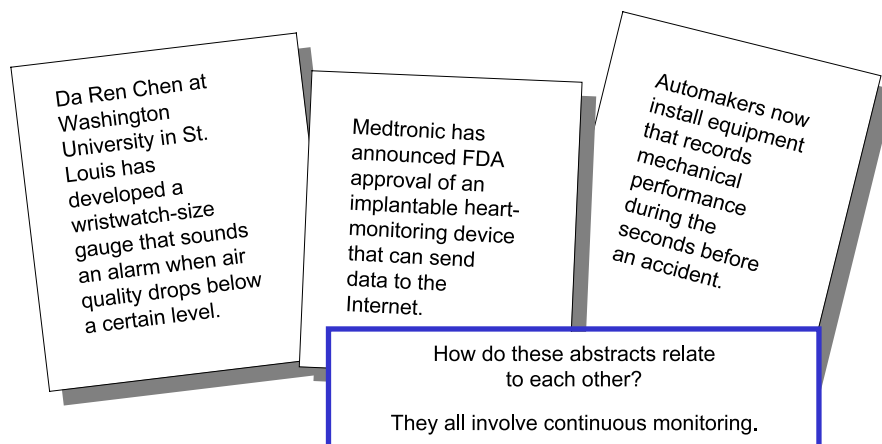
Fig. 2. Conceptual overlays.

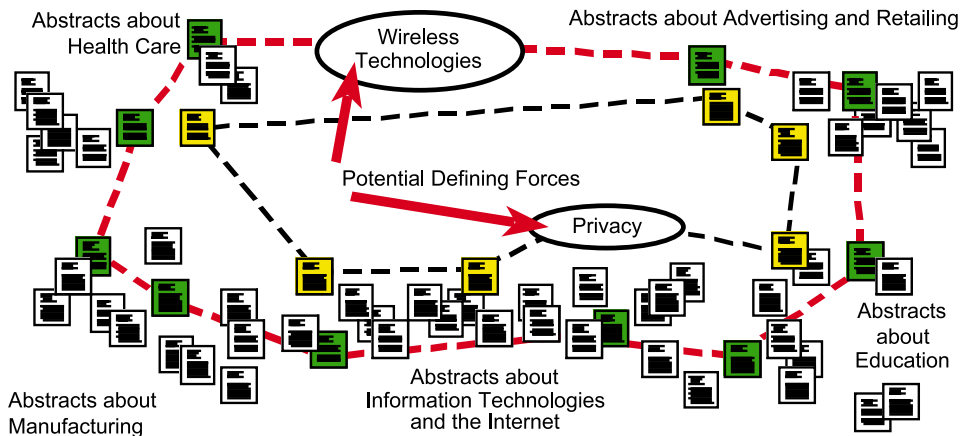Scan abstracts typically cluster around industry categories.

Fig. 3. Defining forces.

backgrounds, from technology to specialties in consumer behavior, from engineering to anthropology, and from management to marketing.

Following the scanning meetings, the filtering process that identifies valuable ideas and knowledge for an organization can begin in earnest. Researchers and analysts will need to examine carefully the clusters of abstracts and topics that surfaced during the meeting. The analysts compare the new topics and ideas to ones the Scan process has previously identified, and they probe and test the ideas and topics for their substance, plausibility, and potential implications.

4. The players

Because the scanning process profits from a wide variety of perspectives in the abstract-collection process and the Scan meeting, diversity of participants is important. The SRIC-BI process taps:

- Researchers and analysts
- Technology monitors
- Strategy consultants
- Principal consultants
- Marketing and sales staff.

Representation from a wide variety of academic and professional backgrounds is helpful as well. SRIC-BI's staff includes experts with backgrounds in anthropology, business, economics, international affairs, communication arts, marketing, information technology, life sciences, and chemical and electrical engineering. Employees from all levels of the organization, from CEO on down, participate in the process of submitting abstracts and attending Scan meetings. As I mention earlier, the Scan abstract sets include abstracts from SRIC-BI staff in SRIC-BI's Tokyo, Japan, and Croydon, England, offices, providing a global perspective.

Employees participate primarily on a voluntary basis because creative or proactive thinking is difficult if not impossible to mandate. The Scan program is interested to have people participate who are interested in participating.

Scanning experience on the part of participants is highly valuable for success with the scanning process. Learning what constitutes a good Scan abstract can take 6 months to a year of attending Scan meetings. Learning to identify unique clusters of abstracts can take a year or more. Experience on the part of Scan meeting participants also makes for a smooth meeting, with participants pacing the introduction of new topics themselves rather than depending on the facilitator to set the pace. A consistent set of attendees at Scan meetings also establishes a memory for the meetings so that topics and ideas do not appear repeatedly unless new developments merit a resurfacing of the topic.

5. The product

The most important product of the scanning process is an increased awareness on the part of planners, employees, and managers of the importance of a heads-up attitude about the external environment. The likelihood of strategic plans' being blindsided by external developments increases every year with the increasing complexity and competition in the business environment. The scanning process provides a language, infrastructure, and mind-set for cultivating a future orientation in any organization. The process also provides a tonic against the entrainment of thinking that discourages innovation and adaptation.

To "distribute" a future orientation throughout client companies, both push and pull distribution mechanisms are necessary. A pull mechanism, in which employees in the client company can pull content from the scanning abstract data base as the need arises, is a necessity in today's fast-paced environment. A push mechanism, in which the scanners and meeting participants push content into distribution throughout the company, is necessary because the topics and questions that scanning regularly surfaces are not typically on the radar screen or agenda of managers, planners, and administrators in the company. Boring memos or e-mails typically are lost in the shuffle, so a journalistic flair is frequently helpful in attracting attention and readership. Sound-bite titles that can pique the reader's curiosity are essential for the push distribution. Items coming from recent SRIC-BI meetings include:

- *The End of Actuarial Medicine?*
- *Neuromarketing*
- *Disabled by Design*
- *Automating Research*
- *Bettor Predictions*
- *eScience*
- *China's Global Designs*
- *The United States of Asia*
- *Elderly Assumptions*
- *Beauty Medicine and the Worried Well*
- *E-Commerce Ecosystems.*

In addition to performing ongoing scanning for clients who wish to outsource the scanning function, SRIC-BI has the consulting expertise and experience to assist companies in creating their own internal

scanning systems. That experience includes an awareness of the hurdles that companies typically face in attempting to implement scanning processes internally. Hurdles include:

- *Hierarchical meetings*: The presence of a senior manager can inhibit the discussion and stifle innovative ideas and input. Junior employees do not want to risk looking bad. Senior managers must understand their role (refraining from normal decision-making, judgmental behavior patterns), and junior staff must feel comfortable in expressing themselves.
- *Accountantitis*: Given the opportunity, the accountants will want immediate documentation of a return on investment for the cost of the meetings. An executive with the budget and vision to assess costs and longer-term benefits accurately is important to a fair trial of the process within a company.
- *Premature evaluation*: The Scan process benefits from experienced participants, so the early meetings can seem ambiguous, unfocused, and unproductive.
- *Naysayers*: The Scan process is particularly susceptible to tunnel-visioned naysayers who focus on this quarter's earnings. One naysayer can deflate an entire room of energized, creative innovators. Selection of appropriate personality types for participation in the process is the most important success factor in implementing a Scan process.
- *Low priority*: To sustain the process beyond 6 months requires a strong commitment from the organization to make the process work and to use the results in planning and decision making.

Although the Scan process serves most effectively as an early-warning system, companies have applied it in various other ways. Scanning processes can serve as a form of peripheral vision (to avoid being blindsided by events outside one's industry), as an input to innovation processes, as a strategic stimulant, as a strategic irritant, and as a means of questioning the conventional wisdom or complacency within an organization.

Through the years, scanning has played an essential role in SRIC-BI's foresight capabilities by providing a systematic means for surveying the broad external environment for change vectors. Traditional monitoring processes in most organizations are largely arbitrary, depending on what concerned individuals in the organization are reading, thinking about, and sharing informally with each other. But in today's world, *arbitrary* is insufficient. No foresight function can operate with confidence without a disciplined process for spotting new patterns of change and bringing those issues into the organization for early consideration and action.

References

[1] Mark Buchanan, Power laws and the new science of complexity management, Strategy & Business 34 (2003 Spring) 71.
[2] Stephen Haeckel, Adaptive Enterprise: Creating and Leading Sense-and-Respond Organizations, Harvard Business School Press, Boston, 1999, p. 9.
[3] Ray Kurzweil, The Age of Spiritual Machines, Penguin Books, New York, 1999, p. 103.
[4] Andrew S. Grove, Only the Paranoid Survive, Doubleday, 1999.
[5] Dorothy Leonard-Barton, Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation, Harvard Business School Press, Boston, 1995, p. 135.
[6] Eric D. Beinhocker, Sarah Kaplan, Tired of strategic planning? McKinsey Quarterly 2 (2002) 48–57.
[7] Mark Buchanan, Power laws and the new science of complexity management, Strategy & Business 34 (2003 Spring) 76.

[8] Jessie Scanlon, Big business: rising obesity rates add up to a growing industry in plus-size design, I.D. 65 (2004 March/April) 61–63.

Kermit M. Patton is research director of the Scan Program at SRI Consulting Business Intelligence (SRIC-BI). He holds a BS degree from Cornell University. Patton has been at SRIC-BI since 1978 and has managed the Scan process since 1991. Patton is available at kpatton@sric-bi.com. More information about SRIC-BI's Scan program is available at www.sric-bi.com.