

**ENVIRONMENTAL SCANNING IN DEVELOPED
AND DEVELOPING ECONOMIES**

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There is a renewed focus on top managers' impact on organizational outcomes. (Pettigrew, 1992). Hambrick and Mason's (1984) "upper echelons" perspective has been strongly supported by research findings. Managerial characteristics such as age, tenure, and experience have been shown to be associated with organizational outcomes such as structure and profitability (e.g., Bantel and Jackson, 1989; Eisenhardt and Schoonhoven, 1990; Finklestein and Hambrick, 1990; Michel and Hambrick, 1992; Murray, 1989; Norburn, 1986; Norburn and Birley, 1988; Wiersema and Bantel, 1992). Hambrick's (1989) call to put top managers back into the strategy picture emphasizes that a variety of human factors, such as biases, aptitudes, and experiences, can affect identification of options available to organizations, as well as implementation choices.

This paper addresses the identification of appropriate organizational options by moving beyond demographic explanations of organizational outcomes to consider a basic, critical strategy-making process: environmental scanning. Moreover, the scanning processes of managers in developing economies are likely to be quite different from those appropriate for developed economies. Differences facing managers in developing economies will be explicated.

Environmental Scanning

Scanning is the first step in the chain of activities leading to environmental adaptation (Daft, Sormunen, and Parks, 1988; Hambrick, 1981), but because "external information is abundant, attention can be directed any number of ways, but not every way" (Hambrick, 1981: 299). Top executives scan the environment in order to perceive external events and trends. The seminal work on scanning by Aguilar (1967) notes that important changes in the

environment were making it increasingly important for managers to foresee and understand these changes. That need may even be more important today than in the past, as evidenced by trends such as increased globalization, easing trade barriers, and technological developments. Sutcliffe (1994) found that effective organizational scanning increased managers' perceptions of environmental instability and munificence.

To the extent environments are turbulent, strategic decisions are ambiguous, multifaceted, and continually variable (Ansoff, 1965), characterized by novelty and complexity (Mintzberg, Raisinghani, and Theoret, 1976). Unless executives are aware of environmental trends important to their organization, and unless their perceptions are accurate, they cannot form judgments appropriate for efficient decision making supporting organizational success.

Studies have explored how executives perceive the business environment in terms of important segments (e.g., economic, regulatory, marketplace), and the sources from which environmental information is obtained (e.g., internal, external, personal, impersonal). Smeltzer, Fann, and Nikolaisen (1988) studied owner/managers of small firms without planning departments, and discovered that over 75% of the owner/managers concluded the most important environmental segments to be either general economic conditions or their own industry conditions. Personal information sources (regular direct contact with people) were considered significantly more important than impersonal sources of information by owners/managers of small firms. Family and customers, followed by friends, were the most prevalent personal information sources for these firms. Among impersonal sources, written sources such as magazines and journals were the most common. Small business

owner/managers responsible for both operational and strategic planning scan on a regular basis (Smeltzer, Fann, and Nikolaisen, 1988).

Keegan (1974) examined information sources used by headquarters executives in multinational companies, and found that human sources were considered far more important than documentary and physical phenomena by respondents. Sixty-six percent of important information came from outside the organization with the remainder originating internally. Informal personal information was considered most valuable of all.

Scanning Processes

Scanning process studies have examined time issues and scanning sophistication. Time issues include the amount of time executives spend scanning both in general and in particular environmental sectors. Scanning sophistication refers to the formalization and continuity of the scanning process, as well as the futurity and comprehensiveness of dimensions considered.

Aguilar (1967) found that upper-level executives devoted more time to scanning than those in lower levels. Sources of environmental information were segmented using personal-impersonal and internal-external dimensions. This finding is consistent with the treatment of firms in developing economies where environments may be more turbulent and macro-level analysis more important.

Kefalas and Schoderbek (1973) studied scanning behavior in conjunction with environmental dynamism and functional area. They classified the farm machinery industry as dynamic and the meatpacking industry as stable, and concluded that executives in a dynamic environment spent more time acquiring external information than those in a stable environment. Environmental sectors in this study included *market, technology, external*

growth, government, and other. Important components of the market sector included market potential, competitors' marketing tactics, and consumer behavior. The technology sector included new products and processes, information technology, licensing and patents. The external growth sector was comprised of mergers, acquisitions, joint ventures, takeovers, and foreign investments. The government sector included actions of the Federal Reserve, Department of Defense, Department of Commerce, Department of Agriculture, Department of Labor, and state governments. The *other* sector included unions, the community at large, ecology, and the demographic environment.

Kefalas and Schoderbek (1973) measured the distribution of time spent acquiring information among the five sectors. The sectors in order of importance (estimated percentage of scanning time devoted to sectors) were market, technology, *other*, government, and external growth. Sources were categorized as documentary and human conversation (both internal and external), or a combination (formal and informal meetings). Documentary sources were any printed or written media. Human conversation sources included one-on-one personal contacts, including telephone contacts.

Hambrick (1981) had limited findings regarding a functional area-scanning relationship. Insurance industry respondents reported paying more attention to the entrepreneurial environment than did college or hospital executives. Functional area was measured on an ordinal scale, and executives were allowed to list three out of the eight presented. The degree of scanning was measured in three ways. The frequency method involved asking subjects how often they stayed abreast of certain events or trends. The interest method involved asking them to what level of complexity they stayed abreast of those

same categories. The hours method involved asking them how many hours per week they estimated they spent learning of events or trends in each of the four broad environmental sectors. Thus all methods for measuring the degree of scanning relied on the retrospective accounts of executives as opposed to any sort of direct measure of scanning behavior as it occurred.

These studies collectively suggest that human and external sources of environmental information may be considered most important by upper-level decision makers. In addition, market and economic sectors appear to be of primary importance. The next set of studies examines the sophistication of the scanning process, both on an individual and an organizational level. Research on scanning sophistication may be seen as an attempt to provide a more fine-grained approach to elaborating on processes leading to specific organizational outcomes. Finally, the amount of time spent scanning the environment appears to increase as environmental uncertainty increases.

Scanning Sophistication

Sophistication of the scanning system, whether on an organizational or individual level, refers to the comprehensiveness of issues considered, the frequency or continuity of scanning, and the futurity of problem solving. Sophistication also includes proactivity versus reactivity, and the degree to which the firm attempts to handle environmental uncertainty. In short, scanning sophistication is an indication of how serious management is about the scanning effort, i.e., the importance management attaches to scanning. As will become clear, scanning

sophistication at the individual level is uniquely different from scanning sophistication at the organizational level.

Fahey, King, and Narayanan (1981) developed a typology of scanning system sophistication and complexity, with the categories of irregular, periodic, and continuous scanning. In irregular scanning systems, scanning is mostly reactive, responding to environmentally generated crises. Managers focus on problems that are short-term, relying largely on information from the past. Periodic scanning systems are more proactive, though the focus is still on problem solving. They are more future-oriented, but still emphasize near-term environmental changes. Periodic scanning systems tend to be primarily concerned with economic and sales projections. Finally, continuous scanning systems concentrate on seeking opportunities, and include general environmental contingencies such as cultural trends. They are geared toward handling environmental uncertainty rather than reducing it.

Jain (1984) conceptualized scanning activity as evolving in organizations according to four phases: primitive, ad hoc, reactive, and proactive. In the primitive phase, scanning takes place without management devoting any effort to it. The environment is taken as inevitable and random, and management perceives no control. No distinction is made between strategic and non-strategic information.

In the ad hoc phase, although little initiative is taken to scan the environment, management identifies some areas to be carefully monitored. Management is still tied to day-to-day operations, and information obtained in specific areas may not be related to strategy formulation.

In the reactive phase, management is aware of the importance of scanning and makes efforts to monitor the environment in a variety of areas. Yet the effort is unplanned and unstructured, and all information appears important. Cognitive limitations make full utilization of the information difficult. This makes the firm hesitant to break new ground, preferring instead to react quickly to moves made by the market leader.

Finally, in the proactive phase management carefully screens information to discern that which is most crucial. Important information is disseminated to those responsible for incorporating it into the strategy. In a corporation, both macro scanning (scanning related to the corporation) and micro scanning (scanning related to the business unit) are integrated for maximum synergies.

In Jain's (1984) study, the environment was categorized as consisting of four areas: economic, technological, political (including regulatory), and social. The general economic environment was ranked most significant; Jain speculated that this may be because companies have long assumed the economic environment to be of primary importance. The technological environment was ranked second; the implication was that large corporations have a significant amount at stake regarding technological shifts. Third was the political environment, including possible government actions that may impact the firm. Finally, the social environment was ranked last. Jain concluded that the political and social environments may be more difficult to conceptualize and scan objectively than the economic and technological environments.

Subramanian et al. (1993) found that strategic types (Miles and Snow, 1978) differed in environmental scanning focus. Based on Jain's (1984) typology of scanning system sophistication, or "levels" of scanning, the strategic types in decreasing order of scanning

sophistication were prospectors, analyzers, and defenders. Scanning systems used by defenders were significantly different from those used by analyzers and prospectors, with no significant difference between the latter two.

El Sawy's (1985) focus on the scanning behavior of the individual CEO included the inactive, reactive, and proactive modes. In the inactive mode, the CEO receives unsolicited information, with no scanning effort on his or her part. In the reactive mode, the CEO searches for solutions to particular problems. In the proactive mode CEOs identify ill-defined settings in an attempt to act before problems emerge. CEOs of small to medium-sized high technology companies placed more importance on external than internal information sources. This can be compared with Aguilar's (1967) finding that managers in large manufacturing organizations use more internal information sources compared with those in smaller companies. One conclusion drawn from smaller firms' greater reliance on external sources for strategic information was that CEOs do much of their own scanning rather than delegating it to subordinates. This lack of delegation may be due in part to the fact that smaller firms may have limited resources and thus do not have specialists who conduct external scanning. Another possibility is that CEOs in general may prefer to do much of their own scanning because strategic information is stored largely in the minds of managers rather than in company files, and managers must often incorporate "soft" information, such as gossip and hearsay, in making inferences (Mintzberg, 1973). Collectively, these findings highlight the importance of studying the scanning behavior of the individual CEO, particularly in smaller organizations. If strategic information is stored mostly in the minds of managers, then formal information systems may have limited utility for decision making (El Sawy, 1985). Moreover,

the "soft" information previously discussed is interpreted and synthesized internally (by the individual). Finally, especially in small organizations, top managers appear to have a remarkable impact on organizational structure and processes (e.g., Miller, Droge, and Toulouse, 1988). Because scanning is the first step in environmental adaptation (Hambrick, 1981), the study of individual scanning is important, especially in small firms.

Performance Implications

Thus far in the review of studies dealing with environmental scanning, organizational performance has been conspicuously absent. This is understandable, because early empirical efforts in a science are typically aimed at description. Yet measures of performance, such as profitability, can be included in analyses of variables' impact on one another, even if for purely descriptive motives. Moreover, for normative implications to emerge, performance must be considered. Indeed, many would argue that if strategy research has a central paradigm, it is discovering how organizational performance is affected by various contextual factors (Meyer, 1991).

Daft, Sormunen, and Parks (1988), in a study of CEOs in single-business manufacturing companies, explored relationships between the environment and scanning behavior, as well as scanning behavior and performance. They distinguished between the task environment and the general environment in examining the relationship between scanning frequency and strategic uncertainty. Building on the work of Bourgeois (1980) and Dill (1958), they considered the task environment to be the layer closest to the organization, which influences day-to-day operations and goal attainment. Included were the customer, competition, and technological environments. Conversely, the outer layer, or the general

environment, consists of sectors that affect organizations indirectly. These were labeled the regulatory, economic, and sociocultural environments. The sectors in decreasing order of strategic uncertainty were customer, economic, competitor, technological, regulatory, and sociocultural. CEOs reported using every scanning mode (personal internal, personal external, impersonal internal, impersonal external) more frequently when strategic uncertainty was high. Also, the higher the uncertainty in environmental sectors, the more frequently they relied on personal modes.

Regarding the relationship between environmental scanning behavior and organizational performance, high-performing firms had consistently higher correlations between strategic uncertainty and scanning frequency for each mode than did low performers. In high performers, CEOs tailored scanning more closely to perceived uncertainty; they also increased scanning through personal more than written modes as strategic uncertainty increased. Moreover, high-performing firms showed stronger correlations between strategic uncertainty and scanning frequency in each environmental sector than did low performers. In low performers, scanning behavior did not vary with strategic uncertainty to the same degree it did in higher performing firms. Finally, the breadth of scanning was greater in the high performers, including the general as well as the task environments.

Accepting the critical role of individual scanning in environmental adaptation and subsequent organizational outcomes, it follows that outcomes, such as performance, should be examined in order to discover scanning-performance links. The Daft et al. (1988) study is unusual in that it investigates individual scanning activity and how it is affected by environmental context, as well as scanning activity associated with higher firm performance.

Firms in Developed and Developing Economies

Thus far this study has recounted research done on scanning behavior in developed economies. What does the behavior of managers in developed economies tell us about effective scanning techniques in developing economies? We begin by realizing that it is not always useful to make a clear cut distinction between scanning behavior based on the development stage of the economy in which the firm is embedded. Rather, an examination of the particular context in which each individual firm finds itself is required. We now turn to the question of generalized differences in effective scanning behavior between firms in developing versus developed economies, but first we will muddy the waters a bit by discussing overlaps between the two.

When examining what constitutes effective scanning behavior for firms we must look at the extent of environmental turbulence which they face. There are many factors which may influence the degree of environmental turbulence facing a firm. One such factor is the stage in the industry life-cycle which an industry and all the firms which comprise it inhabit. All firms in the initial stages of an industry face similar circumstances regardless of where they may be located or how developed their economy. Consistently, firms in the mature stage of an industry life-cycle face similar circumstances regardless of their location. A similar logic may be applied to other points in the life-cycle of an industry.

Relatedly, the degree of competition facing a firm may be more important than where the firm is located (although the two may be correlated). There may be strong similarities between firms in low or highly competitive environments regardless of location. That brings up the question of how important is location for that particular firm or industry? More

directly, is the firm embedded in a local or a global context? How much does the firm depend on local conditions and how much on global ones? Importantly, what combination may exist between these two separate sets of constraints?

Location effects such as the level of development of the local economy impact a firm in conjunction with other forces such as the overall competitive environment and idiosyncratic firm characteristics. This study does not attempt to portray the dichotomy between firms in developing and developed economies as absolute. Rather, we acknowledge the integrated nature of forces affecting individual firm environments and here discuss one of these factors: difference in effective firm scanning behavior based on whether that firm is located in a developed or developing economy.

Differences Between Environments in Developing and Developed Economies

In this section we examine some general differences between the environments facing firms in developed and developing economies. The last section stated that these differences are by no means absolute. Here we examine some of these differences. In order to effectively explicate the differing environments facing firms in developed and developing economies we attempt to hold confounding variables constant and examine only the difference of interest (developed or developing economies).

Conditions in developing economies differ from those in developed economies in many ways, including the turbulence of the economic environment. Smaller economies are more prone to being affected by exogenous shocks which would have little impact on larger ones. This increased sensitivity to environmental conditions leaves firms in developed economies more likely to adopt an environmental scanning strategy which is at once more proactive and

at a more macro-level. Firms need to be aware of the devastating consequences these exogenous shocks may have and constantly comb their environments for evidence of the formation of such conditions.

Here, search heuristics focus on the building and maintenance of firm flexibility as well as effective scanning techniques. Firms through their adroit and flexible managerial cognition create and exercise sufficient flexibility to survive and prosper in their environments. For firms in developing economies the return to flexibility may be higher than to firms in developed economies, all things being equal.

We need not look far for evidence of turbulence in developing economies. Volatility in foreign exchange rates, interest rates, inflation, and local demand functions is generally much higher than in developed economies. Firms in these more volatile environments must be prepared to weather through crises large and small in the normal course of business. They do not have the luxury of an internal focus as do some firms in developed economies. It would seem logical that the cost structure of firms in developing economies should be more heavily weighted towards variable rather than fixed costs in order to maximize flexibility. This could be a reason in addition to such things as low labor costs, high interest rates, and foreign currency constraints that input factors in developing countries are heavily weighted in favor of labor.

Conclusion

The recent Asian currency crises demonstrated some of the interesting dynamics encountered when firms must manage a combination of local and global economic constraints. This paper discussed the scanning behavior of managers in developed economies and also how

the environments in developed and developing economies are different. These different environments lead to different ramifications for the firms involved.

Firms in developing countries must understand their local environments, coordinate with the economies of developed countries, and manage the interface between the two. This interface may provide firms with their greatest challenge and may require more detailed scanning and attention in the future.

An example of this interface is the decision to borrow funds or have important markets in countries whose currencies have the potential to move significantly against those firms' home currency. If a firm (or even a country) borrows money in foreign markets then it has a foreign exchange exposure which if not hedged needs to be managed closely. It does a company little good to have compensating balances of local currency when liabilities are denominated in foreign currency. Under these circumstances firms must not only manage their own operational affairs, they must also manage their foreign currency exposure.

Foreign currency is of course not the only variable where firms may have problems. Any situation where they must manage the interface between their local economy and the economies of developed countries may generate difficulties. These difficulties impose complications on firms in developing economies which don't exist in developed ones. As a consequence, although there is always a danger of over-generalizing, it is probably safe to say that the main differences facing firms in developing economies when compared to developed ones are the potential for greater environmental turbulence and the need to manage the interfaces with developed economies.

In order to effectively manage these constraints firms in developing economies must acquire and maintain relatively high levels of flexibility. They must also manage exogenous changes imposed from without to a much greater degree than must firms in developed economies (generally). Under these circumstances environmental scanning techniques must differ in at least two important ways from those practiced in developed countries: first, they must be more macro oriented. Environmental turbulence is greater and as a consequence scanning techniques to monitor this turbulence must be better honed. Second, environmental scanning must occur at all levels of the firm simultaneously. The organization as a whole must be receptive to environmental cues. These cues must be communicated, combined, and analyzed across the organization. Just as firms are required to be “learning “ organizations, in turbulent environments they must also be “scanning” organizations.

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