Market Information Processing and Organizational Learning

Our understanding of how organizations process market information can be advanced substantially on the basis of principles derived from models of organizational learning. Accordingly, the author examines the extant literature on organizational learning, proposes a hierarchy of market sense making, and provides research propositions that will enhance marketers' understanding of information processing and knowledge creation in organizations.

Just as organizations learn what to strive for in their environment, they also learn to attend to some parts of that environment and not to others. One part of such adaptation is in learning search behavior (Cyert and March 1963, p. 123).

It has been suggested that organizational knowledge systems with shared cognitions represent a metaphorical view of an organizational culture, that warrants the attention of marketing scholars (Deshpandé and Webster 1989). More specifically, Deshpandé and Webster proposed that a focus on organizations as cognitive entities, centering on the concept of organizational memory, could prove to be an interesting way of understanding marketing knowledge development. Drawing on work in psychology, sociology, and organizational behavior, I present an organizational cognition perspective of market information use,1 framing its reasoning on the theory of organizational learning.

Organizational Learning in a Market Information Context

Organizational learning was addressed by Cyert and March (1963) over 30 years ago as a process by which organizations as collectives learn through interaction with their environments. The organizational learning process is viewed as a cyclical one in which "individuals' actions lead to organizational interactions with the environment, the environment responds, and environmental responses are interpreted by individuals who learn by updating their beliefs about cause-effect (i.e., action-response) relationships" (Lee, Courtney, and O'Keefe 1992, p. 23). Members of the organization share information, creating organizational memory in the form of shared beliefs, assumptions, and norms (Argyris and Schön 1978). This organizational memory, then, guides individual and organizational actions.

Individuals are fundamental to the development of organizational learning (Argyris and Schön 1978, p. 20):

"It follows both that there is no organizational learning without individual learning, and that individual learning is a necessary but insufficient condition for organizational learning (italics added)."

Despite their influence on organizational learning, individuals come and go and can have more (or less) knowledge without being integrated. After all, it would seem that the degree to which an organization uses market information is a function of what it has learned already. It is of little wonder that MSI recently has issued a call for research on the topic of organizational learning and marketing.

My purpose is to characterize the relationship between market information processing and organizational learning. Such a characterization gives marketing theorists and researchers an additional and, it is believed, sensible grounding on which to base further inquiry into issues regarding market information and knowledge development. I begin with a discussion of organizational learning as a concept, followed by a discussion of various levels of learning in organizations. Finally, some propositions are presented that will aid in the characterization of organizational learning's influence on the way that firms process market information.

James M. Sinkula

1Actually, the term market information processing, is preferred to market information use. The rationale is developed subsequently.

James M. Sinkula is an Associate Professor of Business, The University of Vermont. This research was supported in part by the University of Vermont Committee on Research and Scholarship. The author thanks Robert Lawson, Thomas Noordewier, Thomas Patterson, Ronald Savitt, and Curtis Ventress (all of the University of Vermont) as well as the three anonymous JM reviewers for their helpful comments.
than the organization. Organizational learning is the means by which knowledge is preserved so that it can be used by individuals other than its progenitor.

Organizations must keep track of how they learn about markets. For marketing tasks in particular, in charting the organizational learning curve, it is critical to note not only how much improvement takes place but how long it takes. "Argues Ray Stata, chairman of Analog Devices..."The rate at which individuals and organizations learn may become the only sustainable competitive advantage"" (Stewart 1991a, p. 54).

Organizational Learning and Sense Making: From Market Information Use to Market Information Processing

Understanding the nature of organizational learning is critical to our understanding of how organizations process market information. Information use, which has been the focus in the marketing literature (Deshpandé 1982; Deshpandé and Zaltman 1982, 1984, 1987; Hu 1986; Moorman, Zaltman, and Deshpandé 1992), is a multidimensional construct. Constructs from organizational learning theory such as information acquisition, distribution, interpretation, and memory are more unidimensional and, therefore, could be more consequential to our grasp of how market information is processed in organizations. Huber (1991, p. 90) describes four organizational learning-related constructs:

Knowledge acquisition is the process by which knowledge is obtained. Information distribution is the process by which information from different sources is shared and thereby leads to new information or understanding. Information interpretation is the process by which distributed information is given one or more commonly understood interpretations. Organizational memory is the means by which knowledge is stored for future use.

When possible in this article, I avoid using the term market information use in favor of the term market information processing, a term that encompasses the acquisition, distribution, interpretation, and storage of market information. This information processing perspective assumes that "an entity learns if, through its processing of information, the range of its potential behaviors is changed" (Huber 1991, p. 89, italics added). That is, I do not view overt change as a necessary condition for learning to have occurred. Nor do I view decision making as a necessary condition. A central tenet of this research, in the tradition of the organizational cognition perspective, is that organizational learning is more like sense making (Sackmann 1991) than it is decision making.

Time, Rules, and Routines

Organizational learning, like individual learning, is a function of age and experience (Bedeian 1986; Dixon 1992; Feldman 1986; Simon 1991). After all, it takes time for organizational members to function as a shared cognition system because "their work as learning agents is unfinished until the results of their inquiry—their discoveries, inventions, and evaluations—are recorded in the media of organizational memory" (Argyris and Schon 1978, p. 20).

Consider the market research function in young, small organizations. Here, market research may be sporadic and ad hoc, conducted or supervised by individuals who have no experience with marketing, let alone market research. In these organizations there may be no single individual who has sole responsibility for market research. The supply of market information likely will be viewed as inadequate. What little information there is will be treated as precious and will be distributed widely to organizational members. Proportionally more individuals may be involved in interpreting the information to make meaning of it. More information is likely to be stored in organizational memory because there is so much to learn. Inculcated in this memory are the unspoken rules and norms that will influence the subsequent processing of market information, the subsequent evolution of organizational memory, and so on.

As organizations grow and age, part of their market information processing requires search routines that will yield higher levels of knowledge. Once minor tasks can be replicated, managerial attention can shift to higher levels of abstraction (Jelenek 1979). Hence, the developing organizational memory will demand more unique and meaningful information in its quest to make sense of its markets. Siegler (1983) asserts that the rule2 is the basic unit for characterizing knowledge. Market research information that contradicts existing rules, according to Siegler (1983), would promote the most learning because such information leads to greater change. In addition, information that contradicts rules requires more interpreters and, because more people are involved in processing the information, enhanced organizational learning occurs (Huber 1991). This type of market information processing scenario will play out more often in organizations employing only partially correct, or "premastery," rules (Feldman 1986).

The new product development process is rife with examples illustrating the value of premastery rules. Silicon Graphics uses a rigorously defined set of rules that has enabled it to develop and launch most of its breakthrough products in less than 18 months. These are premastery rules in that Silicon Graphics realizes that they actually could be suboptimal. However, trying to accomplish 100% of the new product objectives, Silicon Graphics believes, would result in not beating the competition to the market (Dumaine 1991).

It is more probable that young organizations employ partially correct rules as they gain experience in their relevant markets. It is also more probable that they are active in processing information that contradicts a formerly applied partially correct rule. Eventually, enough action-response iterations result in little or no contradiction of the refined rule, and the task will become routine.

Though it is a natural tendency to trivialize routine learning activities because they arise so frequently, routines are a critically important means of "communicating learning beyond the individual who discovers it" (Jelenek 1979, p. 37).

2In a market research context, rules pertain to how information is to be acquired, distributed, or even interpreted. They are manifested as policies, norms, or tacit assumptions. For example, it could be a guiding principle in some organizations that market research results are to be distributed only to the managers who initially requested the research.
Thus, Cohen (1991, p. 136) explores "organizations as processing information to learn and apply skilled routines." Once the routine is in place, there could be substantial barriers to information that contradict it, the very information that Siegfried (1983) considers most crucial to learning. It has been shown that managers prefer market research results that contain few surprises (Deshpandé and Zaltman 1984). Surprising results disturb routines. But the paradox is that surprising results enhance organizational learning.

**Some Examples of Market-Based Organizational Learning**

It is not uncommon for some organizations to represent themselves as "information driven" (Galbraith 1977; Goldstein and Zack 1989), whereas others place less value on market information. A newcomer to the former organization will assume quite a different set of values, rules, and norms than he or she would in the latter. Market information processing, then, is a function of what the organization has learned in terms of both facts about its relevant markets and its particular way of acquiring, distributing, interpreting, and storing information. Examine the following recent illustrations of this point.

- Organizations learning about learning—Dow Corning’s market research division believes in continuous improvement programs. They engage in such programs even in market research areas believed to be optimized. Tracking studies, in particular, have been reviewed recently in an effort to learn whether Dow should continue to conduct such studies in house or whether to utilize external research providers as strategic partners. From this has come an interest in the process of improvement itself. For example, Dow learned that a system of review can facilitate the unlearning of research practices that are no longer appropriate. According to Dow’s research director, "The process of pushing and challenging these sacred cows is at the heart of improvement" (Smith 1992, p. 26).

- Organizations learning preferences for research methods—Hewlett-Packard (HP) defines three phases in its process for conducting market research: intelligence, testing, and tracking. The intelligence phase emphasizes open and creative thinking, whereas the testing phase is concerned with prioritizing, not creating, strategy ideas. HP contends that the testing phase has the greatest value to decision makers because it addresses concerns about resource allocation. In the testing phase, HP uses only controlled experimentation and quantitative choice modeling. "We find that conventional survey analysis methods are insufficient for the requirements of the testing task" (BonDurant 1992, p. 31).

- Organizations learning about agency relationships in market research—Merrill Lynch conducts most of its market research in house. Though they do use a small group of high-quality tab houses and external focus group moderators, they have found that "few outside research suppliers have a sufficient understanding of the brokerage business to produce a satisfactory questionnaire and report, mainly because brokerage firms are small and specialized market" (Grudzina 1992, p. 5).

- Organizations learning about how market research information should be processed—Coca-Cola USA’s market research division has the mission of proactively influencing marketing decisions. This goes against the traditional role that, according to Coke, many organizations have internalized (i.e., learned). That traditional role is one of "limiting research involvement to only answering the questions asked" (Payne 1991, p. 4).

**What Makes Market-Based Organizational Learning Unique in the Creation of Knowledge?**

Organizational learning that is directed toward markets is different from other types of organizational learning in at least five ways. First, it is a core competency pertaining to external foci and it is less visible than most internally focused organizational learning competencies (e.g., organizing work processes). Day (1991, p. 3) argues that organizational learning rooted in internal foci "is too limited. ... For internally oriented competencies cannot be productively harnessed unless the organization has an equally well-honed ability to learn about its markets and diffuse the knowledge widely." In a sense, market-based organizational learning represents the genesis of internally focused organizational learning.

Second, market-directed organizational learning results in the fundamental bases of competitive advantage. Developing these bases of competitive advantage requires what I refer to subsequently as "higher-order learning." Difficulty in maintaining competitive advantage is exacerbated by three trends that, according to Day (1991), challenge marketers: (1) accelerated changes in the complexity of markets, (2) exponential growth in the volume of market data, and (3) the imperative "need for shared organizational assumptions about the market to assure the coherency and timeliness of strategies that anticipate rather than react to the market" (p. 2, italics added).

Third, market-based organizational learning is distinct from other types of organizational learning in that the observation of others is essential. At General Electric (GE), executives make a concerted effort to find companies worth emulating, dispatching representatives to those firms to learn how they operate. The subjects of a recent inquiry included electronic component maker AMP, Chaparral Steel, Ford, Hewlett-Packard, Xerox, and three Japanese companies. GE found that these organizations had market-based learning systems that allowed them to out-hustle their competitors in introducing new products, treat their suppliers as partners, and manage inventory so that they tied up less working capital per dollar of sales than GE (Stewart 1991b). This "open-minded inquiry ... relies on the ability and willingness to learn from the experiences of others, including customers, competitors, and channel partners" (Day 1991, p. 5).

Fourth, the market information that resides in organizational memory is typically more difficult to access. Though productivity data and financial results are often readily accessible, customer loyalty, satisfaction, brand equity, and image data traditionally have not been "placed" as effectively in retrievable memory. Oftentimes, decentralized organizational structures (e.g., brand management) foster this retrieval problem. Other times, such information exists only in anecdotal form, departing from organizational memory as personnel leave the organization. Only recently has information technology made it possible to store and retrieve details about marketing issues with the same level of efficiency that other functional areas of the firm have.

**Market Information Processing / 37**
Finally, market-based organizational learning is unique in that market-based information is more equivocal (cf. Daft and Huber 1987). "Before an organization can act on the daunting volume of incomplete and flawed information on market trends and conditions unleashed by the inquiry activities, it has to be interpreted" (Day 1991, p. 6). Interpreting market information is key to organizational learning. For example, after enormous amounts of market research, Campbell Soup recently launched a line of frozen foods only to find that they had missed the emerging trend toward healthier foods. Though research showed positive acceptance figures, the product failed (Dumaine 1991). In the next section, I examine various levels of organizational knowledge via a proposed hierarchy.

A Hierarchy of Market Knowledge
There is a temporal/evolutionary dimension to Figure 1 that, though perhaps not linear, is associated with organizational age. Though experience and organizational learning go hand in hand (Dixon 1992; Feldman 1986; Simon 1991), old organizations are not necessarily collectively wise in their processing of market information. Likewise, young organizations are not necessarily collectively obtuse. Figure 1, therefore, makes no assertions about the validity, accuracy, or truth involved in each level of understanding.

As in any hierarchy, low level elements usually are addressed, at least in part, prior to the consideration of high level elements. Dictionary knowledge (understanding "what is"), for example, is fundamental to augmented knowledge (understanding "how things should be done"). A distinguishing factor of market-based organizational learning is that, to develop and particularly to maintain bases of competitive advantage, the organization must develop higher-order knowledge as illustrated in Figure 1's highest levels.

Early Stages of Knowledge Development
A newly conceived organization enters the hierarchy with congenital knowledge, knowledge inherited from the organization's founders plus any additional knowledge acquired prior to its birth (Huber 1991). The breadth of congenital knowledge will have a profound effect on the degree and level at which market information processing will occur. "What an organization knows at its birth will determine what it searches for, what it experiences, and how it interprets what it encounters" (Huber 1991, p. 91). For example, it is feasible that a newly conceived organization could enter the hierarchy at the endorsed knowledge level because of extensive congenital knowledge deriving from market research, similar market experiences on the part of the founders, or other sources. But typically, newly conceived organizations possess congenital knowledge that focuses on generalized, rationalized concepts of how markets work with less situation-specific knowledge than they would desire, because such knowledge often comes only with trial and error. Thus, young organizations go about the business of acquiring dictionary and episodic knowledge (knowledge of "what has been") to build on the base of congenital knowledge, establish routines and rules, and make sense of their markets.

Organizations never cease to learn at the dictionary and episodic levels, though many times to do so requires the ability to "unlearn" what has been stored in organizational memory to refine rules that are only partially correct (Nystrom and Starbuck 1984). For example, established organizations that are recent adopters of the marketing concept must engage in substantial unlearning activities and will not learn in the same way as newly conceived organizations. Instead they must employ an intentional process, the purpose of which is "to raise tacit knowledge to a level where it can be examined, challenged, and if necessary, discarded" (Dixon 1992, p. 45).

Over time, not only will the organization learn to make sense of its markets but it also will develop rules for the acquisition, distribution, and perhaps even the interpretation of information about those markets. This endorsed way of doing things manifests itself in the form of organizational norms, training programs, policies, and strategies. Occurring in parallel is a "cognitive consensuality" (Gioia and Simms 1986) about how things really are. Argyris and Schön (1978) refer to this as the organization's "theory-in-use" and describe it as essentially an understanding of "how things are done." It represents learning on the procedural level.

According to Argyris and Schön (1978), procedural knowledge is quite different from endorsed knowledge. For example, a market research unit's endorsed policy could be to review systematically at least three proposals prior to awarding a contract to an external research vendor. But it could be the procedural knowledge that such contracts are awarded only to vendors with whom company managers have had considerable experience. It is notable that procedural knowledge is not tantamount to information misuse (e.g., using information only as a symbol of competence) and this differentiates it from concepts such as ritualistic use (Weiss 1980). Indeed, procedural knowledge could result in even more optimal and efficient use of information.

Whether right or wrong, at the endorsed and procedural levels of learning, these organizational norms, rules, policies, and procedures are codified. Some organizations go so far as to codify rules and procedures in the form of computerized expert systems (Stewart 1991). This codification is essential because "if the new knowledge is to be truly institutionalized, truly organizational rather than individual, then others besides the inventor must use it and change it to suit new organizational realities" (Jelinek 1979, p. 150).

Later Stages of Knowledge Development
As differences widen between the endorsed and procedural knowledge as to how market information is processed, individuals in the organization will try to make sense about why these differences exist. Sackmann (1991) refers to this as axiomatic knowledge. In addition, response to detected differences between the espoused and the actual way of processing information could take the form of joint inquiry into the organizational norms themselves to resolve in-
**FIGURE 1**

A Hierarchy of Market Knowledge: The Case of Market Research Information Processing

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>Characteristic Question</th>
<th>Manifestation</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dictionary</td>
<td>&quot;What is?&quot;</td>
<td>Definitions of things, labels, &amp; events.</td>
<td>Description of market segments, product movement, &amp; market semantics.</td>
</tr>
<tr>
<td>Episodic</td>
<td>&quot;What has been?&quot;</td>
<td>Value is placed in the development of historical data bases.</td>
<td>Description of past sales, past causal relationships, &amp; phenomena.</td>
</tr>
<tr>
<td>Endorsed</td>
<td>&quot;What is the espoused way of doing things?&quot;</td>
<td>An organizational system of norms, assumptions, &amp; strategies is developed.</td>
<td>When market research information is interpreted the &quot;party line&quot; is to view both exploratory and confirmatory research with equal objectively.</td>
</tr>
<tr>
<td>Procedural</td>
<td>&quot;How things are actually done?&quot;</td>
<td>A task system governed by tacit rules develops among members which may vary from the espoused system.</td>
<td>Organizational members actually give greater attention to confirmatory research and avoid research which contains too many surprises.</td>
</tr>
<tr>
<td>Axiomatic</td>
<td>&quot;Why things are done the way they are?&quot;</td>
<td>Fundamental beliefs appear as organizational values which are set a priori and cannot be further reduced.</td>
<td>Over time and perhaps unnecessarily, market research continues to acquire information because the organization takes stock in the marketing concept and considers itself &quot;information driven.&quot;</td>
</tr>
<tr>
<td>Augmented</td>
<td>&quot;How should things be done?&quot;</td>
<td>Response to detected differences between the espoused vs. the actual way of doing things takes the form of joint inquiry into organizational norms themselves so as to resolve inconsistency and create new norms.</td>
<td>Market research joins with brand managers to conduct analyses which result in the decentralization of the market research function.</td>
</tr>
<tr>
<td>Deutero&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&quot;How does the organization create knowledge and learn?&quot;</td>
<td>The organization's members learn about organizational learning.</td>
<td>Market research, brand managers, and others examine the impact of organizational structure changes on the knowledge creation process in the firm.</td>
</tr>
</tbody>
</table>

<sup>a</sup>An interpretation drawn from Sackmann (1991) and Argyris and Schön (1978).

<sup>b</sup>Argyris and Schön refer to this as the organization's "Instrumental Theory of Action."

<sup>c</sup>Sackmann likens them to religion or mathematical axioms.

<sup>d</sup>Argyris and Schön refer to this as "double-loop learning."

<sup>e</sup>The term deutero-learning was coined by Gregory Bateson (1972) to illustrate the process of "learning to learn."

consistency and create new norms (Argyris and Schön 1978). Let us refer to this as augmented knowledge.

Regarding axiomatic knowledge, circumstances in organizations dictate that members understand why rules, both written and unwritten, have evolved the way they have. Therefore, axiomatic knowledge represents an understanding of (though not necessarily an agreement with) fundamental organizational values and beliefs. Sackmann (1991, p. 38) argues that they are "basic reasons" for why things are the way they are in organizations "which cannot be further reduced.... They represent final causes just like axioms in mathematics." Market research, for example, might argue that information acquisition should be increased because the organization has embraced the marketing concept and, to truly understand consumer needs and wants, market information must be abundant, timely, and accurate. Other illustrations of axiomatic knowledge are explanations of "why a certain strategy is chosen, why a certain organizational structure is preferred over another ..., why a specific way of interacting and dealing with each other is considered important" (Sackmann 1991, p. 38).

Unlike the position taken here, some writers suggest that learning does not really occur in an organization unless change takes place that culminates in an improvement in organizational effectiveness (Argyris and Schön 1978; Fiol and Lyles 1985). Using this argument, augmented knowledge would be the product of true organizational learning because it is the result of a reexamination of the organizational norms themselves in an endeavor to unlearn, initiate change, and improve. A central tenet of Cyert and March’s (1963) work is that organizations should be viewed as adaptive systems, that they learn by "exhibiting adaptive behavior over time" (p. 123). In its purest sense, learning about markets and learning how to process market information involves endowed knowledge ("this is what the organization says"), procedural knowledge ("here's what really happens"), axiomatic knowledge ("this is why it happens"), and augmented knowledge ("here's what we should do to change it")

Therefore, at the augmented level, the organization is engaged in higher-order learning, not merely adjusting an information-related task to a preexisting organizational norm but rather resolving inconsistencies by adapting the norms
themselves. Market-based organizational learning is more deeply rooted in this type of activity than is organizational learning directed toward internal issues. From the 1980s to the present, for example, organizations systematically have changed their organizational structure by decentralizing, downsizing, and integrating marketing research departments with other organizational units (Keiser, Krum, and Rau 1987). The move toward decentralization in particular seems to have come from organizational knowledge that responsibility for the market research function should be placed closer to its users. Rather than merely changing a procedure, such as streamlining the distribution of market research information from a centralized market research department to various units, the norm itself is changed by reorganizing the structure of market research. In addition to decentralization, the organizational norms associated with the market research function have been adapted to embrace greater collaboration. The Carnegie Group has created a joint venture with US West, Digital Equipment, Ford Motor, and Texas Instruments, which they refer to as the Initiative for Managing Knowledge Assets (IMKA). "IMKA's aim is to make intellectual assets available through software that links databases, artificial intelligence, and plain old rules of thumb" (Stewart 1991a, p. 50).

Deutero learning (Bateson 1972) captured significant attention in the research community with the publication of Myers, Massy, and Greyser's (1980) work on market research and knowledge development. It represents an organization's ability to look inward, to learn how to carry out the process of organizational learning (Argyris and Schon 1978). The study of knowledge creation, marketing's research and development system, innovative activities, and continuous improvement are representative of the firm's desire to learn on the deutero level (cf. Kay 1979). Learning on this level is essential if the organization is to understand its ability to learn, its speed of learning, the correctness and relevance of what it learns, and ultimately the relationship between what it learns and how it performs in its relevant markets.

In the next section, I present some propositions about organizational learning and the processing of market information in the firm.

Organizational Learning and Market Information Processing

Consider information supply as the amount of information available relative to a particular organizational task (cf. Goldstein and Zack 1989) and information need as the volume of information inputs required for an organization to perform its tasks (Farance, Monge, and Russell 1977). Daft and Huber (1987, p. 10) assert that the principal requirement for organizational learning is resolution of the supply/need problem: "Fulfilling this need, and determining whether the amount of information is sufficient, excessive, or optimal, is a logistics problem." Cases of information excess, for instance, can be managed logistically through the tactics of message routing, summarizing, delaying, and modifying.5

A second requirement for organizational learning to occur is the reduction of equivocality (Daft and Huber 1987). Equivocality occurs when there are multiple and conflicting interpretations of information (Weick 1979). Hence, for the organization to make sense of its markets and in turn cultivate memory, it must have the proper supply of information and it must be able to reduce its equivocality.

Market Information Supply and Time

Information supply increases with time as the organization acquires market information from both external and internal sources. External sources include acquisition from searching (e.g., market research), borrowing (e.g., employing consultants), grafting (e.g., acquiring other organizations with well-developed market information), and collaborating (e.g., joint ventures) (Dixon 1992). Internal knowledge often is grouped as congenital knowledge (knowledge of the founders), experiential knowledge (trial and error), experimental knowledge (developing new innovations), knowledge of improving processes, and knowledge by critical reflection (Dixon 1992; Huber 1991).

Though, ostensibly, information acquisition is a systematic endeavor, it is notable that often it is unintentional and "obtained as a by-product of organizational action that is taken for some other purpose" (Dixon 1992, p.35). For example, the entry into new markets provides salespeople with new customers who can provide supplementary, albeit unintended, information to the organization. In addition, information supply increases over time because its acquisition takes on increasing routine.

Finally, the supply of market information will increase with the advent of time because, as organizations grow and age, they tend to decentralize (Mintzberg 1979). Decentralized decision-making promotes decentralization of the market research function. Thus, market research can move from a sole headquartersed group to multiple divisional units that, in effect, duplicate some information while refining other information to the situation specificity of divisional members. Put simply, the first proposition is:

\[ P_1: \text{As organizations age and grow, their supply of market information increases.} \]

At the same time, the mix of actively versus passively acquired market information will change. In their model of organizations as interpretation systems, Daft and Weick (1984) consider whether the organization actively or pas-

---

5Though the term deutero learning has not been used in the marketing literature on knowledge development, it is a concept that is quite applicable to this literature.

6Communication theorists Farance, Monge, and Russell (1977) use the term "load" instead of "need." "Load" is not used here because, to those who are not familiar with the communication theory literature, it connotes a notion of amount regardless of need.

---

40 / Journal of Marketing, January 1994
sively intrudes into its environment. They argue that certain organizations actively search the environment for an answer whereas others increasingly accept a greater portion of whatever information the environment provides them. Active searchers can try to change routines, orchestrate rules, or control crucial elements of their environment. A possible explanation of varying levels of environmental intrusion is organizational age and size (Daft and Weick 1984, p. 288):

New, young organizations ... try new things and actively seek information about their limited environment. [They] are disbelievers, are unindoctrinated, and have less history to rely on ... but as the organization grows and time passes, the environment may be perceived as less threatening, so search will decrease.

The notion of passive versus active market information acquisition has obvious bearing on information processing and organizational learning. The research question is, "To what degree do organizational age and size affect the method with which market information is acquired?" This question leads to the following proposition:

P2: As organizations age and grow, a larger portion of their market information supply is passively, as opposed to actively, acquired.

The Interaction of Supply and Need

Of course, information supply says nothing about subsequent information processing. Daft and Huber (1987) suggest that the highest levels of information processing occur when the organization is (1) in a rapidly changing environment, (2) in an emerging (i.e., young) industry, or (3) undergoing rapid technological development.

The relationship of market information supply and need can be thought of in much the same way we think of the interaction of supply and demand for any commodity. Though inefficient, a situation in which information supply exceeds need is not a learning inhibitor. However, a situation in which need exceeds supply would be deleterious to learning. Either case represents a market information scenario in which supply and need are not in equilibrium—a typical scenario. Moreover, market information tends to be out of equilibrium on the high side. Many organizations "gather more information and don't use it, ask for more and ignore it, make decisions first and look for more relevant information afterwards" (March and Shapira 1982, p. 98). To the extent that supply outpaces need, the utility of market information will diminish and it will be processed to a lesser extent.

Though cases of information surplus in organizations are often attributed to oversupply, there are also need-based explanations. Organizations exhibit increasing returns to experience (March 1991), which in turn influence their need for additional market information. In a traditional bureaucracy, for example, market information need is low. In such organizations "learning is based on institutionalized experience and the organization expects to continue, only more efficiently, the same behavior that worked in the past" (Daft and Huber 1987, p. 26). In other types of organizations, the learning emphasis could be focused more on adaptive behavior, such as the case in which they are attempting to develop augmented knowledge. Market information need for these organizations is high.

Further research should profile more explicitly the nature of the relationship between market information supply and need. Such research might planned around the following four propositions:

P3: Market information processing and organizational learning are only partially a function of information supply. That is, typically organizations do not distribute, interpret, and store all the information they have acquired.

P4: The acquisition, distribution, interpretation, and storage of market information (and thus organizational learning) are a function of information need, which is in turn a function of the organization's environment, age, and experience.

P5: In general, as organizations age and grow, they acquire increasing portions of routinely collected, unneeded information.

P6: Market information will be underprocessed to the extent that information supply exceeds need. Underprocessing can take the form of message routing, summarizing, delaying, modification, or outright refusal to interpret the information.

Though further research into P3 through P6 could lead to some interesting main effects results, many of the relationships between information supply and information processing could be stated explicitly as contingent on the need-based factors mentioned previously (i.e., environmental change and organizational age). Research that develops and tests interaction effect hypotheses, therefore, can furnish a higher level of detail to our understanding of how market information supply relates to its subsequent processing. Such research might commence with a focus on the following propositions, which, through their proposed interactions, can be viewed as extensions of P3 through P6:

P7: The relationship between market information processing (and thus organizational learning) and market information supply is contingent on environmental change.

P7a: Under conditions of low environmental change, increasing the supply of market information will have little effect on information distribution, interpretation, storage, and organizational learning.

P7b: Under conditions of high environmental change, increasing the supply of market information will result in increased information distribution, interpretation, storage, and organizational learning.

P8: The relationship between market information processing (and thus organizational learning) and market information supply is contingent on organizational age.

P8a: In old organizations, increasing the supply of market information will have little effect on information distribution, interpretation, storage, and organizational learning.

P8b: In young organizations, increasing the supply of market information will result in increased information distribution, interpretation, storage, and organizational learning.

Success, Organizational Memory, and Market Information Processing

Organizational memory, of course, is the fundamental result of organizational learning. Though nonlinear and
lumpy, organizational memory is related to organizational age and growth. Dixon (1992, p. 44) argues that "organizational memory works as a sorting device for identifying successful practice." In essence, organizations use memory as a market information filter. Recent empirical evidence supports the contention that market information filtering is a function of organizational age and size; that as memory develops, organizations distribute, interpret, and store less of their newly acquired market information. Sinkula (1992) found that managers of young, small firms report significantly ($p < .05$) greater use of their market information than their older, larger counterparts. It is reasonable to assume that these older, larger organizations have more well developed memories and report using their market information less because they have become more proficient at separating relevant from irrelevant information. In addition, older, larger organizations increasingly can experience situations in which particular types of market information are perceived to be less equivocal than they were when organizational memory was less developed. Thus, ignoring certain market information might be viewed as one of the more positive outcomes of organizational memory.

Development of organizational memory may not always have a positive effect. Dixon (1992), drawing on work from Levitt and March (1988, p. 320), notes that "the experience lessons of history are captured by routines in a way that makes the lessons, but not the history, accessible to organizations and organizational members who have not themselves experienced the history." This might cause an organization to have a false sense of security with its current routines rather than experiment with superior procedures. Those who do seek superior procedures must be aware that organizational memory serves as a "lens" through which market information is interpreted, potentially biasing the interpretation and sense-making process (Nyström and Starbuck 1984). Letting the interpretation of market information become too historically driven can lead to the selective attention to information which confirms past historical patterns.

Finally, organizational memory has much to do with learning from success. Consider March's (1991, p. 71) contention that organizational learning is a function of the balance between the exploration of new possibilities versus the exploitation of old certainties:

- Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploration includes such things as refinement, choice, production, efficiency, selection, implementation, execution.

- Organizations whose primary objective is exploitation have become successful and, in all likelihood, are resistant to change. The processing of marketing information will, no doubt, be affected by this aversion to change. Nyström and Starbuck (1984, p. 53) posit that "as their successes accumulate, organizations emphasize efficiency, grow complacent, and learn too little." In addition, they contend that, to initiate change, top managers must engage in a continuous process of unlearning.

The influence of organizational success and memory on market information processing suggests the following four propositions:

- $P_1$: Market information processing is a function of organizational memory. As organizational memory develops, organizations will distribute, interpret, and store less of their newly acquired market information.

- $P_{16}$: As organizational memory develops, market information becomes less equivocal. As equivocality is reduced, organizations will distribute, interpret, and store less of their newly acquired market information.

- $P_{14}$: High-performing firms are less willing to change and will distribute, interpret, and store less of their newly acquired market information than will low-performing firms. This is because the experience lessons in high-performing firms lead them to favor exploitation over exploration objectives.

- $P_{12}$: High-performing firms that are actively engaged in unlearning activities will distribute, interpret, and store greater amounts of their newly acquired market information.

Testing the propositions presented here probably will require a departure from the ethnographic anthropological nature of the bulk of the organizational cognition literature. Recent studies dealing with organizational culture (Deshpandé, Farley, and Webster 1993; Menon and Varadarajan 1992), knowledge utilization (Menon and Varadarajan 1992), and market research user/provider relationships (Moorman, Deshpandé, and Zaltman 1993; Moorman, Zaltman, and Deshpandé 1992) show that empirical analyses have the potential to offer enormous insight into the organizational learning process.

In addition, a test of these propositions will require that certain new constructs be developed. Of primary importance is organizational memory. This construct might be operationalized best in the context of the degree to which the organization exemplifies a "learning culture" (Sackmann 1991). Though the construct is multifarious and presents a monumental measurement task, work must progress that aims to do so. A starting point lies with Walsh and Ungson's (1991) article, which posits that organizational memory is composed of six storage bins: individuals, culture, transformations, structures, ecology, and external archives. They argue that any attempt to study organizational memory can be done best by attempting to disconfirm the existence of information in each bin. If market knowledge, through the concept of organizational memory, could be introduced as a control variable, models explaining the processing of market information would be enhanced significantly.

Multi-item scales that accurately portray other relevant constructs, such as passive acquisition, exploration versus exploration objectives, and information equivocality should be operationalized with the utmost care. Research agendas should utilize accepted paradigms for scale development (cf. Churchill 1979).
Moreover, traditional cross-sectional survey methodologies could be inappropriate for testing certain propositions delineated here. Longitudinal studies may be required to test propositions that appear to be time dependent (e.g., $P_1$ and $P_2$). The testing of others may require experimental designs that address extraneous variables that cannot be statistically controlled (e.g., $P_{10}$ and $P_{11}$). Finally, recent work utilizing multiple informants (Deshpandé, Farley, and Webster 1993) shows great promise in bolstering results in studies directed toward organizational culture and learning.

**Conclusions and Implications**

Organizations learn. What they know affects how they search, what they pay attention to, and how they interpret what they find. In their agenda-setting article, Deshpandé and Webster (1989, p. 13) said, "it is time to move beyond structural explanations of marketing management, of 'what happens around here,' to an understanding of 'why things happen the way they do.'" Despite the considerable progress that has been made in understanding market information processing in the firm, marketing scholars appear to be seeking a deeper understanding of the forces behind the utilization of market information. A theory of market information processing grounded in organizational learning holds tremendous promise in accomplishing these ends. If we accept that the way an organization acquires, distributes, interprets, and stores market information is tied fundamentally to the shared cognitions that constitute its memory, we can inaugurate whole new constructs and models of information processing—models that are premised on the sociology of the organization rather than on a purely structural functionalist perspective.

Hence, marketing scholars aspiring to understand why market information is processed the way it is might do well to utilize the prolific literature on organizational learning. Five guiding principles are presented herein.

First, research focusing on the way organizations process market information should take precedence over that focusing on market information use. A market information processing approach could exploit the already rich literature in which there is substantial agreement on the theoretical parameters of constructs such as information acquisition, distribution, and interpretation. In addition, the literature on organizational information processing could guide further research centering on the interplay of information capabilities (which include the supply of information and processes for its distribution) and information requirements (which include the amount of information needed by managers, its structure, format, and timeliness). Inquiry into this interplay would allow for finer resolution in our thinking about the knowledge creation process because it would augment what we already know about managers' use of market research information.

Second, it is time to end the analogy between market information processing and decision making. Market information processing and organizational learning do not always involve decision making. As stated previously, organizations learn about their markets if, by processing market information, their range of potential behaviors is changed. Thus, processing market information in the endeavor to learn is probably more about sense making than decision making. Further research in the area should take this broadened view and concentrate on the sense-making mechanisms that individuals in organizations use to assign meaning to events. "These mechanisms include the standards and rules for perceiving, interpreting, believing, and acting that are typically used in a given cultural setting" (Sackmann 1991, p. 33).

Third, researchers must attempt to develop measures of market-based learning competency. A starting point is Day's (1991) work on the subject. He notes that assessing the learning competency should include factors such as (1) the organization's reliance on outside consultants, (2) the integration of market information into the new product development process, (3) organizational audits of unsuccessful programs, (4) access to previous market studies, and (5) the frequency of market monitoring, to name a few. Such measures eventually could lead to the identification of learning-oriented organizations and the subsequent assessment of their market performance.

Fourth, a look at the limits of the propositions presented here might prove interesting. If, for example, supply increases over time ($P_1$) and organizational learning is, at least partially, a function of supply ($P_2$) then learning increases over time. But to what extent is all this constrained by need ($P_{10}$)? What are the limits of organizational learning and memory? I have hinted that success inhibits organizational learning ($P_{31}$). If so, how necessary is it for the organization to continue learning and exploring versus exploiting what it already knows about its current markets?

Finally, the time has come for marketing scholars to address the question of when to ignore market information. Put simply, when is too much too much? Our focus on use has obstructed explorations into the wisdom of refrain. Studies that link specific logistical mechanisms, such as information routing, summarizing, delaying, and modifying to organizational performance, would be interesting to say the least. Marketing scholars and practitioners alike may view market information avoidance as deleterious. An organizational learning perspective suggests that such a view could be unfounded.

There exists an expansive and untapped body of thought on organizational learning that is undergoing active scrutiny by our friends in organizational sociology, organizational behavior, and psychology. Introducing this thinking to scholars who are curious about marketing knowledge development could foster an innovative way of discerning how organizations process information as they attempt to make sense of their markets. Such insights can lead organizations to better utilization of market information, learning that is aversive of truth, and better market performance.
REFERENCES


44 / Journal of Marketing, January 1994