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## **A Causal Model of Organizational Performance and Change**

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*To provide a model of organizational performance and change, at least two lines of theorizing need to be explored—organizational functioning and organizational change. The authors go beyond description and suggest causal linkages that hypothesize how performance is affected and how effective change occurs. Change is depicted in terms of both process and content, with particular emphasis on transformational as compared with transactional factors. Transformational change occurs as a response to the external environment and directly affects organizational mission and strategy, the organization's leadership, and culture. In turn, the transactional factors are affected—structure, systems, management practices, and climate. These transformational and transactional factors together affect motivation, which, in turn, affects performance.*

*In support of the model's potential validity, theory and research as well as practice are cited.*

Organization change is a kind of chaos (Gleick, 1987). The number of variables changing at the same time, the magnitude of environmental change, and the frequent resistance of human systems create a whole confluence of processes that are extremely difficult to predict and almost impossible to control. Nevertheless, there are consistent patterns that exist—linkages among classes of events that have been demonstrated repeatedly in the research literature and can be seen in actual organizations. The enormous and pervasive impact of culture and beliefs—to the point where it causes organizations to do fundamentally unsound things from a business point of view—would be such an observed phenomenon.

To build a *most likely* model describing the causes of organizational performance and change, we must explore two important lines of thinking. First, we must understand more thoroughly how organizations function (i.e., what leads to what). Second, given our model of causation, we must understand how organizations might be deliberately changed. The purpose of this article is to explain our understanding so far. More specifically, we present our framework for under-

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standing—a causal model of organizational performance and change. But, first, a bit of background.

In our organizational consulting work, we try very hard to link the practice to sound theory and research. The linkage typically is in the direction of theory and research to practice: that is, to ground our consultation in what is known, what is theoretically and empirically sound. Creation of the model to be presented in this article was not quite in that knowledge-to-practice direction, however. With respect to theory, we strongly believe in the open system framework, especially represented by Katz and Kahn (1978). Thus, any organizational model that we might develop would stem from an input-throughput-output, with a feedback loop, format. The model presented here is definitely of that genre. In other words, the fundamental framework for the model evolved from theory. The components of the model and what causes what and in what order, on the other hand, have evolved from our practice. To risk stating what is often not politic to admit in academic circles, we admit that the ultimate development of our causal model evolved from practice, not extensive theory or research. What we are attempting with this article, therefore, is a theoretical and empirical justification of what we clearly believe works. To be candid, we acknowledge that our attempt is not unlike attribution theory—we are explaining our beliefs and actions *ex post facto*: “This seemed to have worked; I wonder if the literature supports our action.”

Our consulting efforts over a period of about 5 years with British Airways taught us a lot—what changes seemed to have worked and what activities clearly did not. It was from these experiences that our model took form. As a case example, we refer to the work at British Airways later in this article. For a more recent overview of that change effort, see Goodstein and Burke (1991).

### Other Organizational Models

From the perspective of both research about organizations and consultation to organizational clients, we have experienced some frustration about most if not all current organizational models that do little more than describe or depict. A case in point is the 7S model developed by Pascale and Athos (1981) and further honed by Peters and Waterman (1982). Parenthetically, let us quickly add that by comparing our model with others, particularly those the reader may be familiar with, if not fond of, we wish to clarify the nature of our thinking and, ideally, its distinctive contribution, not cast our comments in a competitive manner.

The strengths of the 7S model are (a) its description of organizational variables that convey obvious importance—strategy, structure, systems, style, staff, skills, and shared values (as will be seen, we have incorporated these dimensions in one form or another in our model)—and (b) its recognition of the importance of the interrelationships among all of these seven variables, or dimensions. The 7S model, on the other hand, does not contain any external environment or performance variables. The model is a description of these seven important elements and shows that they interact to create organizational patterns, but there is no explanation of how these seven dimensions are affected by the external environment. Nor do we know how each dimension affects the other or what specific performance indices may be involved.

Some organizational models that in our judgment are largely descriptive do at least stipulate certain "shoulds." Weisbord (1976), for example, states that the role of the leadership box in his six-box model is to coordinate the remaining five. The Nadler-Tushman (1977) model is one of congruence. They argue that for organizational effectiveness the various boxes composing their model should be congruent with one another (e.g., organizational arrangements, or structure, should be congruent with organizational strategy).

Even contingency models of organizations, which imply that "it all depends" and that there is no one best way to organize or to manage (e.g., Lawrence & Lorsch, 1969, and Burns & Stalker, 1961, before them) have certain causal implications. Organizational effectiveness is, in part, contingent on the degree of match between the organization's external environment (whether static or dynamic) and the organization's internal structure (either mechanistic or organic).

To some degree, then, models such as Nadler-Tushman and the positions taken by Burns and Stalker and by Lawrence and Lorsch suggest a cause-effect linkage. Nadler and Tushman at least imply that little or no congruence between, say, strategy and structure produces low organizational performance, and the contingency models posit that an improper match between the organization's external environment and its internal structure "causes" organizational ineffectiveness. The issue in both is that the number of items that might be congruent (or matched in the case of contingency) is great and the models provide neither a formula for determining which are central nor an objective means for knowing when congruence or matching has occurred or what levels of congruence/matching or incongruence/nonmatching produce desirable or undesirable effects. In short, our desire is for a model that will serve as a guide for both organizational diagnosis *and* planned, managed organization change—one that clearly shows cause-and-effect relationships and can be tested empirically.

With respect to the latter half of this desire, a model of organization change, we are attempting to provide a causal framework that encompasses both the what and the how—what organizational dimensions are key to successful change and how these dimensions should be linked causally to achieve the change goals. In other words, we are attempting to integrate two categories of change theory from the world of organization development (OD), what Porras and Robertson (1987) as well as Woodman (1989) refer to as (a) implementation theory and (b) change process theory. The former concerns activities that must be undertaken to affect planned change (e.g., survey feedback) and the latter refers to specific changes that need to occur as a consequence of these implementation activities (e.g., embracing a particular value such as emphasizing service to customers more than adhering rigidly to procedures regarding how to deal with customers, rather than vice versa). As these OD researchers have pointed out, theory in OD is typically either one or the other—implementation or change process. With the model presented in this article, we are striving for an integration of both theories.

An additional desire, as noted already, is to link what we understand from our practice to what is known from research and theory. It is clear that, for example, the 7S model came from consulting practice (see Peters & Waterman, 1982: 9-12), and we know firsthand that Weisbord's six-box model evolved from his prac-

tice. We believe that these models have valid components because they are in fact based on practice and do not convey irrelevant or the so-called ivory tower thinking. Yet these and other models do not go far enough. For example, such critical dimensions as the external environment, performance, and organizational culture are not accounted for sufficiently. Moreover, depicting organizational models as simply as possible can be beneficial, especially when attempting to explain systemic ideas to people who are relatively naive about large organizations; however, reality is much more complex than most, if not all, models depict. And when attempting to account for organizational functioning and change at the same time, we must depict a considerable degree of complexity while maintaining coherence—no mean feat. We know of no organizational models that attempt this degree of complexity, coherence, and predictability (i.e., causality).

### **Background: Climate and Culture**

#### *Climate*

The early, original thinking underlying the model presented here came from George Litwin and others during the 1960s. In 1967, the Harvard Business School sponsored a conference on organizational climate. The results of this conference were subsequently published in two books (Litwin & Stringer, 1968; Tagiuri & Litwin, 1968). The concept of organizational climate that emerged from this series of studies and articles was that of a psychological state strongly affected by organizational conditions (e.g., systems, structure, manager behavior, etc).

The importance of this early research and theory development regarding organizational climate was that it clearly linked psychological and organizational variables in a cause-effect model that was empirically testable. Using the model, Litwin and Stringer (1968) were able to predict *and* control the motivational and performance consequences of various organizational climates established in their research experiment. They were working with motivation analysis and arousal techniques developed by McClelland (1961), Atkinson (1958), and others over a period of more than 20 years.

#### *Culture*

In recent years, there has been a great deal of interest in the concept of organizational culture. Drawn from anthropology, the concept of culture is meant to describe the relatively enduring set of values and norms that underlie a social system. These underlying values and norms may not be entirely available to one's consciousness. They are thought to describe a "meaning system" that allows members of that social system to attribute meanings and values to the variety of external and internal events that are experienced.

In this article, we attempt to be very explicit about the distinction between climate and culture. Climate is defined in terms of perceptions that individuals have of how their local work unit is managed and how effectively they and their day-to-day colleagues work together on the job. The level of analysis, therefore, is the group, the work unit. Climate is much more in the foreground of organizational members' perceptions, whereas culture is more background and defined by beliefs and values. The level of analysis for culture is the organization. Climate is, of

course, affected by culture, and people's perceptions define both, but at different levels. We attempt to clarify in more depth these distinctions later in the article, as has Schneider (1985) before us. Further, we are attempting to create a model of organizational behavior within which both climate and culture can be described in terms of their interactions with other organizational variables. Thus, we are building on earlier research and theory with regard to predicting motivation and performance effects.

In addition, we are attempting to distinguish between the set of variables that influence and are influenced by climate and those influenced by culture. We postulate two distinct sets of organizational dynamics, one primarily associated with the transactional level of human behavior—the everyday interactions and exchanges that more directly create climate conditions. The second set of dynamics is concerned with processes of organizational transformation: that is, rather fundamental changes in behavior (e.g., value shifts). Such transformational processes are required for genuine change in the culture of an organization. In our effort to distinguish between transactional and transformational dynamics in organizations, we have been influenced by the writings of James McGregor Burns (1978) and by our own experience in modern organizations.

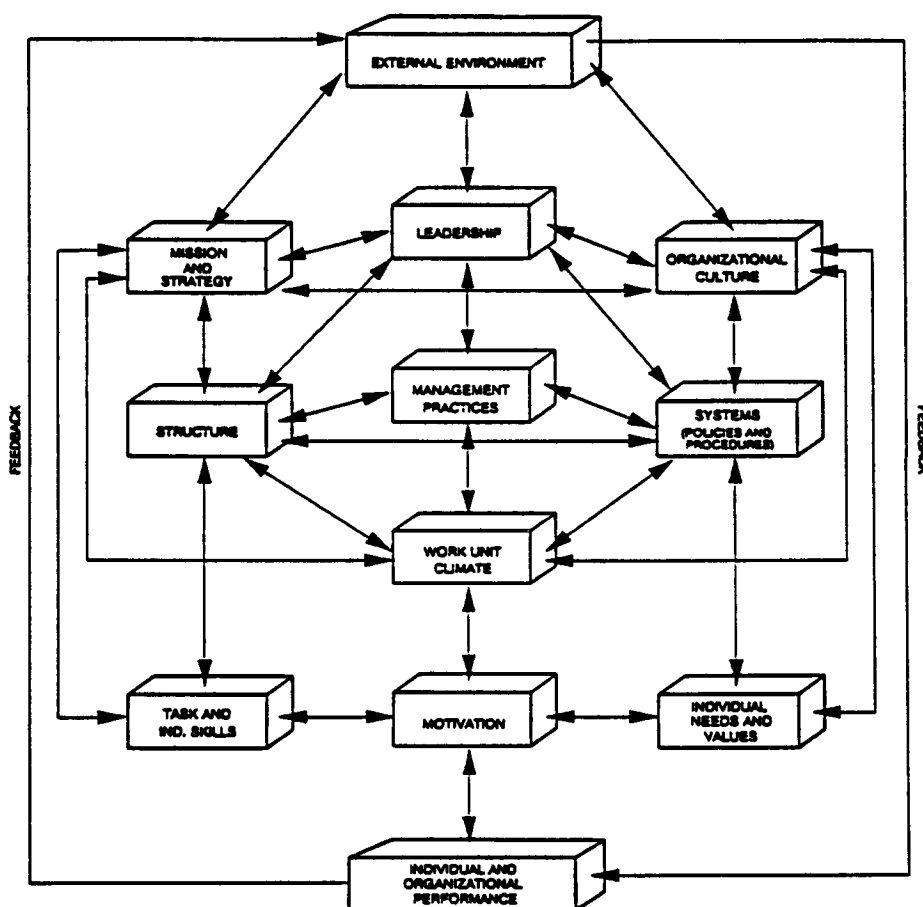
### The Model

Figure 1 is a diagram summarizing the model. As noted earlier, this model owes its original development to the work of Litwin and his associates (Litwin & Stringer, 1968; Tagiuri & Litwin, 1968), and has been refined through a series of studies directed by Burke and his colleagues (Bernstein & Burke, 1989; Michela, Boni, Schecter, Manderlink, Bernstein, O'Malley, & Burke, 1988). Recent collaboration has led to the current form of this model that (a) specifies by arrows which organizational variable (see the boxes) influences more directly which other variables and (b) distinguishes transformational and transactional dynamics in organizational behavior and change.

Conforming to accepted ways of thinking about organizations from general systems theory (Katz & Kahn, 1978), the external environment box represents the input, and the individual and organizational performance box the output. The feedback loop goes in both directions: that is, organizational performance affects the system's external environment via its products and services, and the organization's performance may be directly affected by its external environment (e.g., a change in government regulations or trends on Wall Street). The remaining boxes in the model represent the throughput aspect of general systems theory.

The total of 12 boxes represent, of course, our choices of organizational variables we consider to be the most important ones. These choices were not made in isolation. We have been influenced by others' thinking. To a large degree, therefore, we have followed precedence. For example, in one form or another, and perhaps using different labels, we have incorporated the seven S's of the McKinsey model explained by Peters and Waterman (1982). The same can be said of Weisbord's (1976) model and the one by Nadler and Tushman (1977). In addition, we have attempted to account for key variables at a total system level, with such variables as mission, strategy, and culture, at a group or local work unit level (e.g., cli-

Figure 1  
A Model of Organizational Performance and Change



mate) and at an individual level (e.g., motivation, individual needs and values, and job-person match).

It is no doubt an understatement to say that the model is complex. At the same time, however, we recognize the need for the human mind to simplify the rich complexity of organizational phenomena. And though complex to depict and describe, our model, exhibited two-dimensionally, is still an oversimplification. A hologram would be better, but is not available.

Arrows going in both directions are meant to convey the open-systems principle. A change in one (or more) "box(es)" will eventually have an impact on the others. Moreover, if we could diagram the model such that the arrows would be more circular—the hologram idea—reality could be represented more accurately. Yet this is a *causal* model. For example, though culture and systems affect one another, we believe culture has a stronger influence on systems than vice versa. Kerr and Slocum (1987), for example, have provided data that suggest a strong linkage

between corporate culture and the organization's reward system. They show how a company's reward system is a manifestation of its culture. They also point out that the organization's reward system can be used to help change the company's culture. Their data lend support to the linkage notion. We would simply take their evidence and suggest a step further by arguing that corporate culture (beliefs and values) determine the type of reward system an organization has. Yet we would strongly agree that to change culture the reward system should be used (i.e., to reward the behaviors that would reflect the new values we might wish to incorporate).

Displaying the model the way we have is meant to make a statement about organizational change. Organizational change, especially an overhaul of the company business strategy, stems more from environmental impact than from any other factor. Moreover, in large scale or total organizational change, mission, strategy, leadership, and culture have more "weight" than structure, management practices, and systems: that is, having organizational leaders communicate the new strategy is not sufficient for effective change. Culture change must be planned as well and aligned with strategy and leader behavior. These variables have more weight because when changing them (e.g., organizational mission), they affect the total system. Changing structure, on the other hand, may or may not affect the total system. It depends on where in the organization a structural change might occur.

We are not necessarily discussing at this stage where one could *start* the change, only the relative weighting of change dynamics. When we think of the model in terms of change, then, the weighted order displayed in the model is key. This point will be elaborated in the next section.

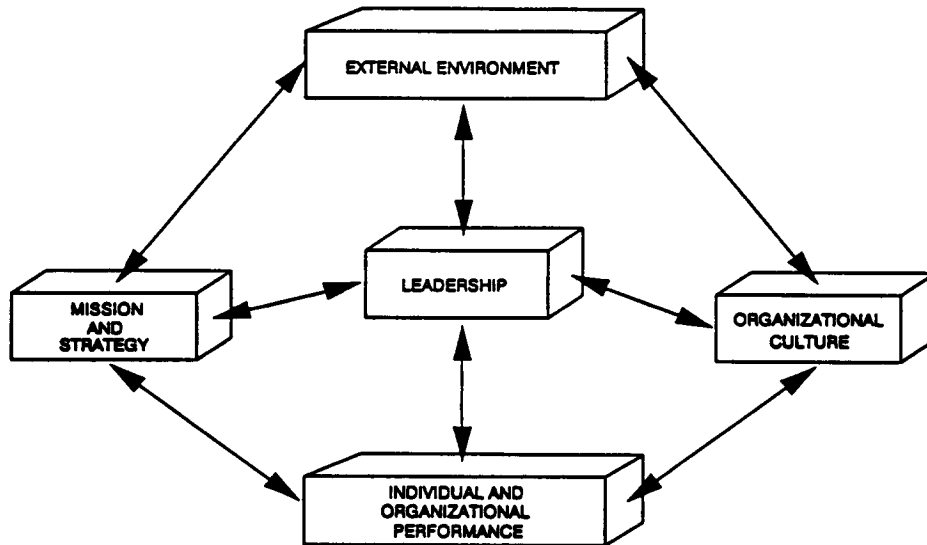
To summarize briefly so far, the model shown in Figure 1 attempts to portray the primary variables that need to be considered in any attempt to predict and explain the total behavior output of an organization, the most important interactions between these variables, and how they affect change. Again, in reality, all boxes would have bi-directional arrows with every other box. We are displaying with our model what we consider the most critical linkages. Later in this article we define each of the variables and give some examples of typical interactions.

### **Transformational and Transactional Dynamics**

The concept of transformational change in organizations is suggested in the writings of such people as Bass (1985), Burke (1986), Burns (1978), McClelland (1975), and Tichy and Devanna (1986). Figure 2 contains a display of the transformational variables—the upper half of the model. By *transformational* we mean areas in which alteration is likely caused by interaction with environmental forces (both within and without) and will require entirely new behavior sets from organizational members.

It is true, of course, that members can influence their organization's environment so that certain changes are minimized (e.g., lobbying activities, forming or being involved in trade associations and coalitions). Our feedback loop in the model is meant to reflect this kind of influence. Our point here is that for the most part organization change is initiated by forces from the organization's external en-

Figure 2  
A Model of Organizational Performance and Change:  
The TRANSFORMATIONAL Factors



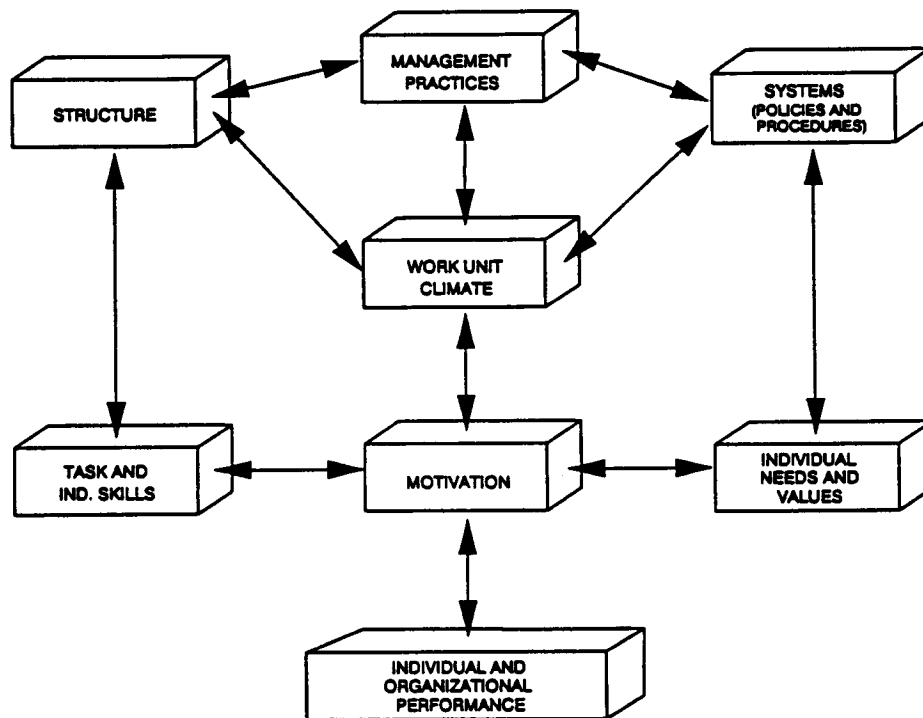
vironment (e.g., changes in the competitive environment, government regulations, technological breakthroughs). Not everyone would agree with our premise. Torbert (1989), for example, argues that organizational transformation emanates from transformational leaders, not from the environment. We would agree that strong leaders make a difference, especially in the early stages of their tenure. These leaders are responding, nevertheless, to forces in their organization's environment, we contend. This leader responsiveness does not mean passivity. Astute leaders are people who scan their organization's external environment, choose the forces they wish to deal with, and take action accordingly. This leadership process is neither passive nor in isolation, as Torbert's contention might imply.

Figure 3 contains the transactional variables—the lower half of the model. These variables are very similar to those originally isolated earlier by Litwin and, in part (structural effects on climate), later by Michela et al. (1988). By transactional we mean that the primary way of alteration is via relatively short-term reciprocity among people and groups. In other words, "You do this for me and I'll do that for you."

This transformational-transactional way of thinking about organizations that we are using for the model, as noted earlier, comes from theory about leadership. The distinction has been characterized as differences between a leader and a manager. Burke (1986) combined both the theorizing of Zaleznik (1977) and Burns (1978)—that is, transformational (Burns)-leader (Zaleznik) and transactional (Burns)-manager (Zaleznik)—to clarify further these distinctions and to hypothesize how each type, leader or manager, could empower others effectively. With respect to the model, and in keeping with the leader (transformational)-manager (transactional) distinctions, transformational change is therefore associated more



Figure 3  
A Model of Organizational Performance and Change:  
The TRANSACTIONAL Factors



with leadership, whereas transactional change is more within the purview of management.

With this broad distinction of transformational-transactional in mind, we now proceed with a more specific explanation of the model. And, at the risk of erring on the side of brevity, the next section defines each category or box in the model. With each box definition we have provided at least one reference from the literature that helps to clarify further what we mean.

*External environment* is any outside condition or situation that influences the performance of the organization (e.g., marketplaces, world financial conditions, political/governmental circumstances). For a broad view of the changing nature of our world economy, see Drucker (1986). For a more specific perspective on how the external environment affects the organization, see Pfeffer and Salancik (1978).

*Mission and strategy* is what the organization's (a) top management believes is and has declared is the organization's mission and strategy and (b) what employees believe is the central purpose of the organization. Apparently, the mere fact of having a written mission statement is important to organizational effectiveness (Pearce & David, 1987). Strategy is how the organization intends to achieve that purpose over an extended time scale. We prefer Porter's (1985) more recent way

of conceptualizing strategy (as opposed to, say, the Boston Consulting Group's way) because he links it directly to environment (industry structure), organizational structure, and corporate culture.

*Leadership* is executives providing overall organizational direction and serving as behavioral role models for all employees. When assessing this category we would include followers' perceptions of executive practices and values. As our model shows, we make a distinction between leadership and management. This difference follows the thinking of Bennis and Nanus (1985), Burke (1986), Burns (1978), and Zaleznik (1977).

*Culture* is "the way we do things around here." This clear, simple definition comes from Deal and Kennedy (1982). To be a bit more comprehensive in our definition, we should add that culture is the collection of overt and covert rules, values, and principles that are enduring and guide organizational behavior. Understanding an organization's history, especially the values and customs of the founder(s), is key to explaining culture (Schein, 1983). Also, as stated earlier, culture provides a "meaning system" for organizational members.

*Structure* is the arrangement of functions and people into specific areas and levels of responsibility, decision-making authority, communication, and relationships to assure effective implementation of the organization's mission and strategy. Perhaps the classic articles on structure and no doubt some of the ones cited most often are by Duncan (1979) and Galbraith (1974). For perspectives about organizational structure and the future, see Jelinek, Litterer, and Miles (1986) and Peters (1988).

*Management practices* are what managers do in the normal course of events to use the human and material resources at their disposal to carry out the organization's strategy. By practices we mean a particular cluster of specific behaviors. An example of a behavioral management practice is "encouraging subordinates to initiate innovative approaches to tasks and projects." As a practice, two managers may "encourage subordinates" to the same extent, but how specifically each one does it may differ. Thus, we are following the work of such people as Boyatzis (1982), Burke and Coruzzi (1987), and Luthans (1988).

*Systems* are standardized policies and mechanisms that facilitate work, primarily manifested in the organization's reward systems, management information systems (MIS), and in such control systems as performance appraisal, goal and budget development, and human resource allocation. This category of the model covers a lot of ground. Some references that help to explain what we mean by the subcategories include Lawler (1981) on reward systems, Keen (1981) on MIS, Flamholtz (1979) on control systems, and Schuler and Jackson (1987) with their linkage of human resource management systems and practices to strategy.

*Climate* is the collective current impressions, expectations, and feelings that members of local work units have that, in turn, affect their relations with their boss, with one another, and with other units. For further clarification of what we mean by climate, see James and Jones (1974), Litwin, Humphrey, and Wilson (1978), and Michela et al. (1988).

*Task requirements and individual skills/abilities* are the required behavior for task effectiveness, including specific skills and knowledge required of people to

accomplish the work for which they have been assigned and for which they feel directly responsible. Essentially, this box concerns what is often referred to as job-person match. This domain of the model represents mainstream industrial/organizational psychology. Almost any good textbook, such as Maier and Verser (1982), will provide thorough coverage of this category of the model. On the job side, see Campion and Thayer (1987) for an up-to-date analysis of job design, and for the person side, at the general manager level, Herbert and Deresky (1987) provide a useful perspective on matching a person's talents with business strategy.

*Individual needs and values* are the specific psychological factors that provide desire and worth for individual actions or thoughts. Many behavioral scientists believe that enriched jobs enhance motivation and there is evidence to support this belief, yet as Hackman and Oldham (1980) have appropriately noted, not everyone has a desire for his or her job to be enriched. For some members of the workforce, their idea of enrichment concerns activities off the job, not on the job. As the American workforce continues to become even more diverse, the ability to understand differences among people regarding their needs and values with respect to work and job satisfaction increases in importance. See, for example, Kravetz (1988) regarding changes in the workforce and Plummer (1989) on our changing values (i.e., more emphasis on self-actualization).

*Motivation* is aroused behavior tendencies to move toward goals, take needed action, and persist until satisfaction is attained. This is the net resultant motivation: that is, the resultant net energy generated by the sum of achievement, power, affection, discovery, and other important human motives. The article by Evans (1986) is especially relevant because his model for understanding motivation in the workplace is not only multifaceted but the facets are very similar to our model.

*Individual and organizational performance* is the outcome or result as well as the indicator of effort and achievement (e.g., productivity, customer satisfaction, profit, and quality). At the organizational level the work of Cameron, Whetten, and their colleagues is especially relevant to this box: see, for example, Cameron (1980), Cameron and Whetten (1982), and Cameron and Whetten (1981), and at the individual level the article by Latham, Cummings, and Mitchell (1981).

### **Climate Results From Transactions, Culture Change Requires Transformation**

In attempting to explain this model so far, we have encountered many questions, but perhaps most have focused on the distinction between climate and culture. An additional explanation is no doubt appropriate.

In our causal model, we argue that day-to-day climate will be a result of transactions around such issues as

1. Sense of direction: effect of *mission* clarity or lack thereof.
2. Role and responsibility: effect of *structure*, reinforced by manager *practice*.
3. Standards and commitment: effect of manager *practice*, reinforced by *culture*.
4. Fairness of rewards: effect of *systems*, reinforced by manager *practice*.

5. Focus on customer versus internal pressures, standards of excellence: effect of *culture*, reinforced by other variables.

In contrast, the concept of organizational culture has to do with those underlying values and meaning systems that are difficult to manage, to alter, to even be aware of totally (Schein, 1985). We do not mean to use culture to describe another way of understanding the short-term dynamics of the organization. Rather, it provides us with a theoretical framework for delving into that which is continuing and more or less permanent. By more or less permanent, we mean that change can be arranged or may come about through the application of uncontrolled outside forces, but it will involve substantial upheaval in all transactional-level systems and will take time.

When we describe culture as the underlying values and meaning systems of an organization, we describe those forces that create the dimensions of climate, those underlying ideas and images around which specific attitudes and behaviors cluster. Thus, when we attempt to alter the organizational cluster, we change the climate framework (i.e., the gauge by which organizational members perceive their work climate). You might even think of such a period as involving a destabilized climate that would have quite distinctive properties of its own. The new organization culture, as it becomes accepted, would create a modified, if not an entirely new set of dimensions around which climate would be perceived, described, and responded to. Take, for example, customer service. The culture change desired is one of establishing a *value* that the customer comes first, to be served as quickly and as pleasantly as possible with the highest degree of quality, and a *norm* that behavior in a given work unit should be externally oriented first (i.e., focused on customers or those who members of the work unit serve) and internally oriented second (i.e., how members work together). The impact of this change in the culture—a significant shift of priority—on work unit climate might be to replace a former dimension of teamwork with one of interunit (or customer) relations. Or, at a minimum, this latter focus on unit relations might become an added dimension of climate.

### Applying the Model

For major organizational change to occur, the top transformational boxes represent the primary and significant levers for that change. Examples from our experience include (a) an acquisition where the acquired organization's culture, leadership, and business strategy were dramatically different from the acquiring organization, even though both organizations were in the same industry, requiring yet a new merged organization to come about, (b) a federal agency where the mission had been modified, the structure and leadership changed significantly, yet the culture remained in the 1960s—obviously a culture change effort—and (c) a high-tech firm where leadership had recently changed and was perceived negatively, the strategy was unclear, and internal politics had moved from minimal (before) to predominant (after). The hue and cry in this latter high-tech organization was something like, "We have no direction from our leaders and no culture to guide our behavior in the meantime." These examples represent transformational change (i.e., the need for some fundamental shifts).

For organizations where the problems are more of a fine tuning, improving process, the second layer of the model serves as the point of concentration. Examples include some changes in the organization's structure, modification of the reward system, management development (perhaps in the form of a program that concentrates on behavioral practices), or conducting a climate survey to obtain a current measure of such variables as job satisfaction, job clarity, and degree of teamwork.

We have been involved recently with one organization where almost all of the model was used to provide a framework for executives and managers to understand the massive change they were attempting to manage. This organization, British Airways, became a private corporation in February 1987, and changing from a government agency to a market-driven, customer-focused business enterprise required quite a change indeed. *All* boxes in the model have been and still are being affected. Data were gathered based on most of the boxes and summarized in a feedback report for each executive and manager. This feedback, organized according to the model, helped executives and managers understand which of the boxes within his or her organizational domain (or "patch," as the British call it) needed attention.

It is also useful to consider the model in a vertical manner. For example, in one large manufacturing organization (Bernstein & Burke, 1989) we examined the causal chain of culture-management practices-climate. Feedback to executives in this corporation showed how and to what degree cultural variables influenced management practices and, in turn, work unit climate (our dependent variable in this case).

### **Some Preliminary Support for the Model's Validity**

Within the context of general system theory, all variables affect one another, and the hologram notion, introduced earlier, is a useful way to visualize organizational reality. But with respect to organization change, our contention is that external environment has the greatest impact and, internally, the transformational variables (mission/strategy, leadership, culture) have the greatest impact, and next the transactional variables, etc. If we were able to conduct the statistical procedure of path analysis on all variables (boxes) of the model, the beta weights for the downwardly directed arrows would be larger than the beta weights in the opposite direction (e.g., the structure-to-climate direction would be larger than the climate-to-structure one).

What follows are citations of research studies that provide support for our organization change argument. These citations are limited to one or two per "arrow" and do not represent an exhaustive listing.

#### *The Influence of External Environment*

Because our model is based on open-systems theory, we believe in the causal nature of environments. An excellent framework for understanding this causal relationship is the one provided by Emery and Trist (1965). More specifically and recently, Prescott (1986) has empirically demonstrated how environment influences strategy and, in turn, performance. Miles and Snow (1978) have provided evidence to show that executive perceptions of their organization's environment

and their consequent decision making is directly and causally linked. With respect to organizational culture, if we limit our definition of external environment to industry group, for example, then Gordon (1985), who studied utility companies and financial institutions, has shown that corporate culture is directly influenced by the industry category (external environment) of the firm.

### *The Transformational Variables*

Chandler's (1962) classic study clearly demonstrated the differential impact of strategy or structure. More recently, Miles, Snow, Meyer, and Coleman (1978) have shown how strategy affects structure. And, as noted earlier, company mission apparently influences strategic decisions, which in turn affect performance (Pearce & David, 1987). When mission statements include corporate values and philosophy, or at least imply certain values, they also reflect the organization's culture, as Wilkins (1989) has noted. The influence of *culture* on policy and systems, in this case the *reward system*, has been shown by Kerr and Slocum (1987) and Bernstein and Burke (1989) have demonstrated the impact of culture on management practices. It also seems that culture makes a difference with respect to organizational performance: that is, some cultures are more efficient than others (Wilkins & Ouchi, 1983).

It should be mentioned at this stage that we are quite aware of the fact that models may only help us to understand reality; they do not necessarily depict it. With respect to our three transformational boxes, they can be thought of more realistically as being in the minds of organization leaders and as part of their behavior, not in organizational categories. The thinking of Tregoe and Zimmerman (1980) is helpful here. They define nine different categories of strategy, or what they call strategic driving forces: product or services offered, market needs, technology, production capability, method of sale, method of distribution, natural resources, size and growth, and profit-return on investment. They contend that any given company has only one, singular strategic driving force. This idea, incidentally, is similar to Galbraith's (1983) "center of gravity" notion. The strategic driving force is a manifestation of the company leader's beliefs about how to succeed in a particular industry or line of business. Beliefs are part and parcel to corporate culture, and the leadership category is where they (strategy and culture) come together—in the minds of organization leaders and as part of their behavior. When these executives believe differently about which strategy brings success, the company is in trouble (see Burke, 1991, for a case example). Incidentally, in this organizational case, there was a clear need for transformational change; that is, in particular, change in leadership and in corporate culture. In the end, however, at best, there was only a transactional change limited largely to a modification in the organization's structure.

And, finally, for this transformational category, do *leaders* make a difference organizationally? It is not difficult to find research to verify the hierarchical effect on behavior (i.e., that bosses affect subordinates). One of the early studies that showed how supervisors were directly affected by their bosses' managerial style was Fleishman's (1953). But even through mediating variables, as our model reflects, do leaders have an impact on organizational performance? Surprisingly, lit-

tle research has been conducted to address this question. And the studies that have are not always consistent with one another. Salancik and Pfeffer (1977), for example, showed that turnover of mayors had little effect on the city's performance. Two more recent studies do provide support, however. Weiner and Mahoney (1981) found that leadership accounted for more variance in organizational performance than other variables, and Smith, Carson, and Alexander (1984), in a longitudinal study, showed empirically that leadership was associated with improved organizational performance.

### *The Transactional Variables*

These variables, structure, management practices, and systems, are more operational and are more incremental with respect to organization change. Although our main variable to consider as the dependent one is *climate*, structure also has a direct impact on task requirements and individual skills/abilities (job-person match). Systems, especially rewards, also directly affect individual needs and values.

Joyce and Slocum (1984) have shown that both management practices and structure influence climate, and an earlier study by Schneider and Snyder (1975) also demonstrated that climate is affected by the same two variables and by the reward system (i.e., pay and promotion policies). Schneider has also shown a direct linkage between management practices and climate in a series of studies in the service sector (Schneider, 1980; Schneider & Bowen, 1985).

With respect to the impact of *structure* on variables other than climate, the work of Lawrence and Lorsch (1967, 1969), of course, has shown its influence on management practices. The relationship between structure and systems has been demonstrated in numerous ways, just one example being Ouchi's (1977) study of structure and organizational control. And the relationship between structure and task requirements has also been demonstrated many times, perhaps the work by Galbraith (1977, 1973) being one of the best illustrations.

Regarding the impact of *systems*, perhaps the most important subsystem of the policy and procedures (systems) box is the organization's reward system. The belief that "people do what they are rewarded for doing" is practically a cliché. Demonstrating this relationship of rewards and behavior in the workplace is not as obvious and straightforward as one might presume, however. Witness the pay-for-performance controversy for a case in point. There is evidence, nevertheless.

Research on gainsharing shows linkage among management practices, climate, and motivation/performance. Gainsharing positively influences performance (Bullock & Lawler, 1984). As Hammer (1988) has noted, however, the presence of worker participation is close to being a necessary condition for success (in particular, Scanlon Plans). In other words, when management establishes a working climate of participation coupled with pay for performance, positive results occur. For more direct evidence that a participatory climate affects productivity, see Rosenberg and Rosenstein (1980).

And for evidence that reward systems affect individual needs/values, and vice versa, see Deutsch (1985). For a more specific example, see the research of Jor-

dan (1986), a field study indicating that Deci's (1975) contention that extrinsic rewards have a negative effect on intrinsic motivation is probably correct.

Another subsystem within the policy and procedures box and one that is intertwined with the reward system is the organization's performance appraisal system. For evidence that this subsystem affects management practices and climate and, in turn, motivation and ultimately performance, see the work of Cummings (1982) and Cummings and Schwab (1973).

Yet another major subsystem within the policy and procedure box is the organization's management information system. Perhaps the latest and broadest research in this area—the impact of information technology on worker behavior—is the work of Zuboff (1988).

To summarize, these transactional dimensions are central to the model. They affect and are affected by a greater variety of variables than most other dimensions.

### **Motivation and Performance**

With respect to the differential impact of individual needs and values on motivation and job satisfaction, the work of Hackman and Oldham (1980) shows some of the clearest evidence. Among other findings, their research indicates that a majority of people probably have a need for growth and development on the job and therefore would respond to and be more motivated by job enrichment, but not everyone would be so motivated. Among other findings that certain psychologically based interventions affect productivity positively, Guzzo, Sette, and Katzell (1985) more recently have provided evidence that work redesign (i.e., job enrichment) does as well.

Compared with other boxes in the model, finding evidence to support our contention that congruence between persons' skills/abilities and job requirements leads to enhanced motivation and, in turn, higher performance is very easy. For a summary of this area of research, see M. J. Burke and Pearlman (1988) and for an example of impressive evidence, see Hunter and Schmidt (1982).

### **Summary**

Table 1 provides a summary of the studies that we have cited as preliminary support for the model's validity, particularly in terms of arrows that are in the downward direction.

A summary word of qualification: The studies we have chosen to demonstrate support for our ideas about organizational performance and change are highly selective. There are no doubt numerous other studies that both support and perhaps question our arguments. The fact that evidence does exist, however, is the point we wish to make.

The evidence that we have cited comes from disparate sources and, with respect to the model, is piecemeal. Ideally, a proper test of the model would be a study that simultaneously examines the impact of all boxes across a variety of organizations. The closest we have come so far is to examine organizational members' perceptions and beliefs: how managers' beliefs about mission and strategy, for example, relate to (if not predict) their perceptions and their subordinates' perceptions of work unit climate. To cite an actual example, at British Airways one



Table 1 Summary of Studies in Support of Model's Validity		
<i>Dimensions of Model</i>		<i>Studies</i>
External Environment	<ul style="list-style-type: none"> <li>→ Mission &amp; Strategy</li> <li>→ Leadership</li> <li>→ Culture</li> </ul>	Prescott (1978) Miles & Snow (1978) Gordon (1985)
Mission and Strategy	<ul style="list-style-type: none"> <li>→ Structure</li> <li>→ Leadership/Culture</li> </ul>	Chandler (1962); Miles et al. (1978) Tregoe & Zimmerman (1980)
Leadership	<ul style="list-style-type: none"> <li>→ Management Practices</li> <li>→ Performance</li> </ul>	Fleishman (1953) Weiner & Mahoney (1981); Smith et al. (1984)
Culture	<ul style="list-style-type: none"> <li>→ Reward System</li> <li>→ Management Practices</li> <li>→ Performance</li> </ul>	Kerr & Slocum (1987) Bernstein & Burke (1989) Wilkins & Ouchi (1983)
Structure	<ul style="list-style-type: none"> <li>→ Climate</li> <li>→ Management Practices</li> <li>→ Systems</li> <li>→ Task Requirements</li> </ul>	Joyce & Slocum (1984); Schneider & Snyder (1975) Lawrence & Lorsch (1967) Ouchi (1977) Galbraith (1977; 1973)
Management Practices	<ul style="list-style-type: none"> <li>→ Climate</li> </ul>	Schneider (1980); Schneider & Bowen (1985)
Systems	<ul style="list-style-type: none"> <li>→ Climate</li> <li>→ Management Practices</li> <li>→ Individual Needs and Values</li> </ul>	<ul style="list-style-type: none"> <li>{ Bullock &amp; Lawler (1984);</li> <li>{ Cummings (1982)</li> <li>{ Cummings &amp; Schwab (1973);</li> <li>{ Hammer (1988); Zuboff (1988)</li> <li>{ Deutsch (1985); Jordan (1986)</li> </ul>
Climate	<ul style="list-style-type: none"> <li>→ Motivation-Performance</li> </ul>	Rosenberg & Rosenstein (1980)
Task-Person	<ul style="list-style-type: none"> <li>→ Motivation-Performance</li> </ul>	M.J. Burke & Pearlman (1988); Hunter & Schmidt (1982)
Individual Needs and Values		Hackman & Oldham (1980); Guzzo et al. (1988)

of the performance indices used was perceived team effectiveness. Data were also collected from BA managers regarding their beliefs and perceptions about (a) team manager practices (e.g., degree of empowering behavior toward subordinates), (b) the usefulness of BA's structure toward subordinates, (c) the clarity of BA's strategy, (d) the extent to which BA's culture supports change, and (e) the team's climate (e.g., goal and role clarity). These data categorized according to just these five boxes from the model accounted for 54% of the variance in ratings of team effectiveness for this organization, British Airways (Bernstein, 1987). We are not implying that the model always explains this degree of variance. We are illustrating how the model can be used methodologically for particular client organizations.

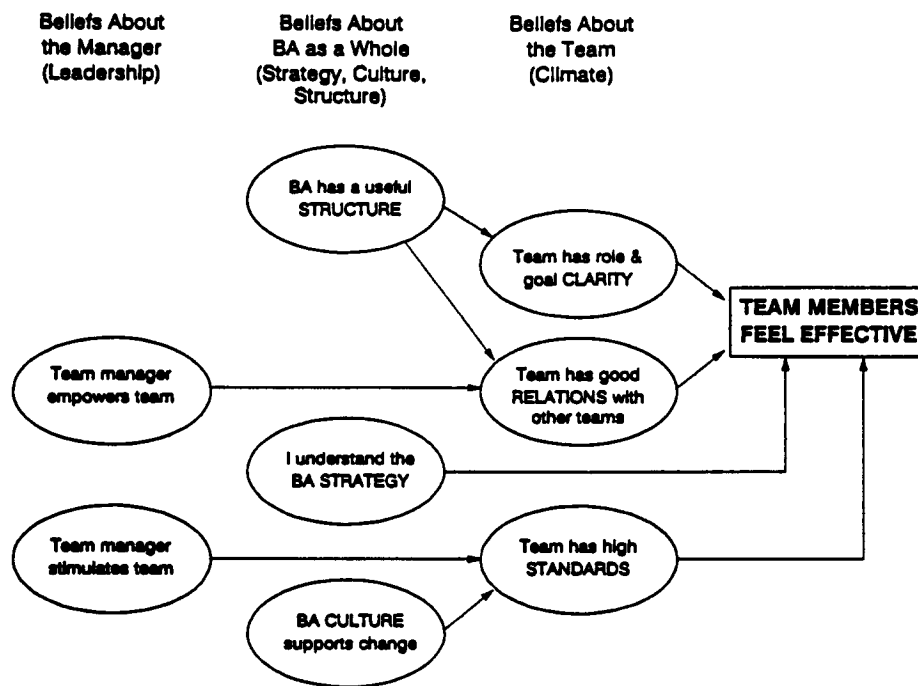
Figure 4 shows these relationships diagrammatically from the model as they were applied to the client organization, in this case, BA.

In another more recent, direct attempt to test the validity of the model in assessing primarily (but not exclusively) the culture of a hospital, Fox (1990) showed significant support for the causal relationships of certain dimensions ("boxes"). Using the model as a causal predictor, her path analysis outcomes demonstrated that leadership, culture, and management practices predicted significant variance in employees' perceptions of work unit climate and organizational performance. The two transformational dimensions, leadership and culture, were clearly the two strongest predictors.

### Conclusions

By covering the choice of variables (boxes) that we have selected, we have made an attempt with this article to describe and define an organizational model that, at least at face value, makes good, common sense. Yet others have done this kind of modeling work as well. It is our contention, however, that we have taken an additional step by hypothesizing causality (arrows), particularly in the weighted direction; that is, top-down, the transformational then transactional factors. We have searched and have found, from the literature and from our own work, at least in part, empirical support for this hypothesized causality. We are as a consequence encouraged, and we intend to search further and conduct more re-

Figure 4  
Beliefs Associated with Team Members' Perceptions of Effectiveness



search. For a recent and further application of the model in a corporate setting, see Burke and Jackson (1991).

We do not always obtain evidence that supports precisely the causal chain depicted in the model, however. We have found from our experience, for example, that on occasion perceptions regarding strategy or structure explain more variance in ratings of climate or some index of performance than do management practices, usually a heavy indicator. These occasions are when the organization is in the midst of a change in strategy, a change in structure, or both. It may also be that national differences would affect the causal chain in ways that are not quite the same as the model predicts. In the UK, for example, beliefs about “the team” and what constitutes satisfaction may not be the same as American beliefs. When given the opportunity to complain or criticize, the British seem to attribute their feelings of dissatisfaction more toward distant factors—the culture, the structure—than to factors close to home—one’s teammates. Americans, on the other hand, are just as likely to criticize their teammates as they are to complain about the inadequate organizational structure.

Finding exceptions to the causal implications of the model does not detract necessarily from its usefulness. As a guide for what to look for and as a predictor for what and how to manage large-scale organizational change, we have found the model invaluable. Like any other model, however, we must not allow it to determine exclusively what we diagnose or how we handle organization change. We cannot afford to allow our model to become ideology, as Morgan (1986) has warned, and that our “way of seeing is a way of not seeing.” (Morgan, 1986: 73)

A final note: It is interesting to point out that executives and managers more typically concern themselves with the left side of the model—mission and strategy, structure, task requirements and individual skills/abilities, and performance (i.e., when one wants to change an organization, these are the critical dimensions). Behavioral scientists, on the other hand, are more likely to be concerned with the right side and middle—leadership, culture, systems (especially rewards), management practices, climate, individual needs and values, motivation, and performance. We are criticized by the former group as only dealing with the “soft” stuff. We, of course, should be concerned with *both*, and with a more effective integration of purpose and practice.

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