Managers must continually identify and find solutions to problems caused by mismatched components within the organization. A unique approach that will help managers perform this vital function is offered in . . .

A Model for Diagnosing Organizational Behavior

David A. Nadler
Michael L. Tushman

Management's primary job is to make organizations operate effectively. Society's work gets done through organizations and management's function is to get organizations to perform that work. Getting organizations to operate effectively is difficult, however. Understanding one individual's behavior is challenging in and of itself; understanding a group that's made up of different individuals and comprehending the many relationships among those individuals is even more complex. Imagine, then, the mind-boggling complexity of a large organization made up of thousands of individuals and hundreds of groups with myriad relationships among these individuals and groups.

But organizational behavior must be managed in spite of this overwhelming complexity; ultimately the organization's work gets done through people, individually or collectively, on their own or in collaboration with technology. Therefore, the management of organizational behavior is central to the management task—a task that involves the capacity to *understand* the behavior patterns of individuals, groups, and organizations, to *predict* what behavioral responses will be elicited by various managerial actions, and finally to use this understanding and these predictions to achieve *control.*

How can one achieve understand-

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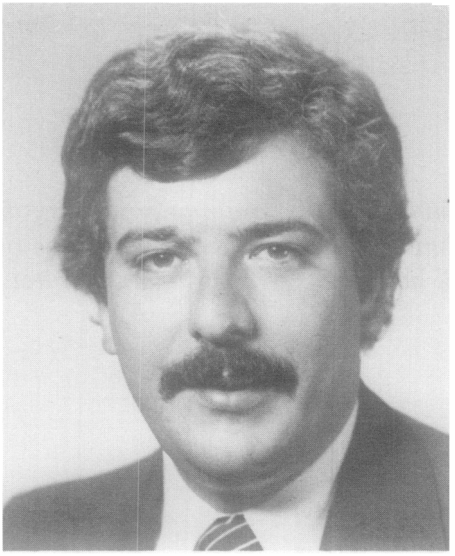
ing and learn how to predict and control organizational behavior? Given its inherent complexity and enigmatic nature, one needs tools to unravel the mysteries, paradoxes, and apparent contradictions that present themselves in the everyday life of organizations. One tool is the conceptual framework or model. A model is a theory that indicates which factors (in an organization, for example) are most critical or important. It also shows how these factors are related—that is, which factors or combination of factors cause other factors to change. In a sense then, a model is a roadmap that can be used to make sense of the terrain of organizational behavior.

The models we use are critical because they guide our analysis and action. In any organizational situation, problem solving involves the collection of information about the problem, the interpretation of that information to determine specific problem types and causes, and the development of action plans accordingly. The models that individuals use influence the kind of data they collect and the kind they ignore; models guide people's approach to analyzing or interpreting the data they have; finally, models help people choose their course of action.

Indeed, anyone who has been exposed to an organization already has some sort of implicit model. People develop these roadmaps over time, building on their own experiences. These implicit models (they usually are not explicitly written down or stated) guide behavior; they vary in quality, validity, and sophistication depending on the nature and extent of the experiences of the model builder, his or her perceptiveness, his or her ability to conceptualize and generalize from experiences, and so on.

We are not solely dependent, however, on the implicit and experience-based models that individuals develop. Since there has been extensive research and theory development on the subject of organizational behavior over the last four decades, it is possible to use scientifically developed explicit models for analyzing organizational behavior and solving organizational problems.



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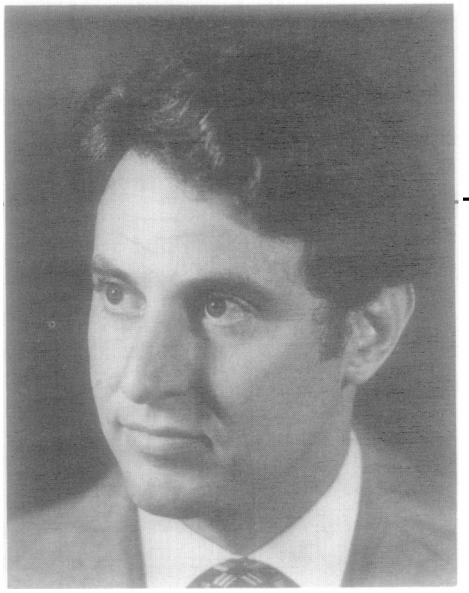
We plan to discuss one particular model, a general model of organizations. Instead of describing a specific phenomenon or aspect of organizational life (such as a model of motivation or a model of organizational design), the general model of organization attempts to provide a framework for thinking about the organization as a total system. The model's major premise is that for organi-

zations to be effective, their subparts or components must be consistently structured and managed—they must approach a state of congruence.

In the first section of this article, we will discuss the basic view of organizations that underlies the model—that is, systems theory. In the second section, we will present and discuss the model itself. In the third section, we will present an approach to using the model for organizational problem analysis. Finally, we will discuss some of the model's implications for thinking about organizations.



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A Basic View of Organizations

There are many different ways of thinking about organizations. When a manager is asked to "draw a picture of an organization," he or she typically draws some version of a pyramidal organizational chart. This is a model that views the stable, formal relationships among the jobs and formal work units as the most critical factors of the organization. Although this clearly is one way to think about organizations, it is a very limited view. It excludes such factors as leadership behavior, the impact of the environment, informal relations, power distribution, and so on. Such a model can capture only a small part of what goes on in organizations. Its perspective is narrow and static.

The past two decades have seen a growing consensus that a viable alternative to the static classic models of organizations is to envision the organization as a social system. This approach stems from the observation that social phenomena display many of the characteristics of natural or mechanical systems. In particular, as Daniel Katz and Robert L. Kahn have argued, organizations can be better understood if they are considered as dynamic and open social systems.

What is a system? Most simply, a system is a set of interrelated elements—that is, a change in one element affects other elements. An *open system* is one that interacts with its environment; it is more than just a set of interrelated elements. Rather, these elements make up a mechanism that takes input from the environment, subjects it to some form of transformation process, and produces output. At the most general level, it should be easy to visualize organizations as systems. Let's consider a manufacturing plant, for example. It is made up of different related components (a number of depart-

ments, jobs technologies, and so on). It receives inputs from the environment—that is, labor, raw material, production orders, and so on—and transforms these inputs into products.

As systems, organizations display a number of basic systems characteristics. Some of the most critical are these:

• *Internal interdependence.* Changes in one component or subpart of an organization frequently have repercussions for other parts; the pieces are interconnected. Again, as in the manufacturing plant example, changes made in one element (for example, the skill levels of those hired to do jobs) will affect other elements (the productiveness of equipment used, the speed or quality of production activities, the nature of supervision needed, and so on).

• *Capacity for feedback*—that is, information about the output that can be used to control the system. Organizations can correct errors and even change themselves because of this characteristic. If in our plant example plant management receives information that the quality of its product is declining, it can use this information to identify factors in the system itself that contribute to this problem. However, it is important to note that, unlike mechanized systems, feedback information does not always lead to correction. Organizations have the potential to use feedback to become self-correcting systems, but they do not always realize this potential.

• *Equilibrium*—that is, a state of balance. When an event puts the system out of balance the system reacts and moves to bring itself back into balance. If one work group in our plant example were suddenly to increase its performance dramatically, it would throw the system out of balance. This group would be making increasing demands on the groups that supply it with the information or materials it needs; groups that work with the high-performing group's output would feel the pressure of work-in-process inventory piling up in front of them. If some type of incentive is in effect, other groups might perceive inequity as this one group begins to earn more. We would predict that some actions would be taken to put the system back into balance. Either the rest of the plant would be changed to increase production and thus be back in balance with the single group, or (more likely) there would be pressure to get this group to modify its behavior in line with the performance levels of the rest of the system (by removing workers, limiting supplies, and so on). The point is that somehow the system would develop energy to move back toward a state of equilibrium or balance.

• *Equifinality.* This characteristic of open systems means that different system configurations can lead to the same end or to the same type of input-output conversion. Thus there's no universal or "one best way" to organize.

• *Adaptation.* For a system to survive, it must maintain a favorable balance of input or output transactions with the environment or it will run down. If our plant produces a product for which there are fewer applications, it must adapt to new demands and develop new products; otherwise, the plant will ultimately have to close its doors. Any system, therefore, must adapt by changing as environmental conditions change. The consequences of not adapting are evident when once-prosperous organizations decay (for example, the eastern railroads) because they fail to respond to environmental changes.

Thus systems theory provides a way of thinking about the organization in more complex and dynamic terms. But although the theory provides a valuable basic perspective on organizations, it is limited as a problem-solving tool. This is because a

model systems theory is too abstract for use in day-to-day analysis of organizational behavior problems. Because of the level of abstraction of systems theory, we need to develop a more specific and pragmatic model based on the concepts of the open systems paradigm.

A Congruence Model of Organizational Behavior

Given the level of abstraction of open theory, our job is to develop a model that reflects the basic systems concepts and characteristics, but that is more specific and thus more usable as an analytic tool. We will describe a model that specifies the critical inputs, the major outputs, and the transformation processes that characterize organizational functioning.

The model puts its greatest emphasis on the transformation process and specifically reflects the critical system property of interdependence. It views organizations as made up of components or parts that interact with each other. These components exist in states of relative balance, consistency, or "fit" with each other. The different parts of an organization can fit well together and function effectively, or fit poorly and lead to problems, dysfunctions, or performance below potential. Our *congruence model of organizational behavior* is based on how well components fit together—that is, the congruence among the components; the effectiveness of this model is based on the quality of these "fits" or congruence.

The concept of congruence is not a new one. George Homans in his pioneering work on social processes in organizations emphasized the interaction and consistency among key elements of organizational behavior. Harold Leavitt, for example, identified four major components of organization as being people, tasks, technology, and structure. The model we will present here builds on these views and also draws from fit models developed and used by James Seiler, Paul Lawrence and Jay Lorsch, and Jay Lorsch and Alan Sheldon.

It is important to remember that we are concerned about creating a model for *behavioral* systems of the organization—the system of elements that ultimately produce behavior patterns and, in turn, organizational performance. Put simply, we need to deal with questions of the inputs the system has to work with, the outputs it must produce, the major components of the transformation process, and the ways in which these components interact.

Inputs

Inputs are factors that, at any one point in time, make up the "givens" facing the organization. They're the material that the organization has to work with. There are several different types of inputs, each of which presents a different set of "givens" to the organization (see Figure 1 for an overview of inputs).

The first input is the *environment*, or all factors outside the organization being examined. Every organization exists within the context of a larger environment that includes individuals, groups, other organizations, and even larger social forces—all of which have a potentially powerful impact on how the organization performs. Specifically, the environment includes markets (clients or customers), suppliers, governmental and regulatory bodies, labor unions, competitors, financial institutions, special interest groups, and so on. As research by Jeffrey Pfeffer and Gerald Salancik has suggested, the environment is critical to organizational functioning.

The environment has three critical

Figure 1
KEY ORGANIZATIONAL INPUTS

Input	*Environment*	*Resources*	*History*	*Strategy*
Definition	All factors, including institutions, groups, individuals, events, and so on, that are outside the organization being analyzed, but that have a potential impact on that organization.	Various assets to which the organization has access, including human resources, technology, capital, information, and so on, as well as less tangible resources (recognition in the market, and so forth).	The patterns of past behavior, activity, and effectiveness of the organization that may affect current organizational functioning.	The stream of decisions about how organizational resources will be configured to meet the demands, constraints, and opportunities within the context of the organization's history.
Critical Features for Analysis	1. What demands does the environment make on the organization? 2. How does the environment put constraints on organizational action?	1. What is the relative quality of the different resources to which the organization has access? 2. To what extent are resources fixed rather than flexible in their configuration(s)?	1. What have been the major stages or phases of the organization's development? 2. What is the current impact of such historical factors as strategic decisions, acts of key leaders, crises, and core values and norms?	1. How has the organization defined its core mission, including the markets it serves and the products/services it provides to these markets? 2. On what basis does it compete? 3. What supporting strategies has the organization employed to achieve the core mission? 4. What specific objectives have been set for organizational output?

features that affect organizational analysis. First, the environment makes demands on the organization. For example, it may require certain products or services at certain levels of quality or quantity. Market pressures are particularly important here. Second, the environment may place constraints on organizational action. It may limit the activities in which an organization may engage. These constraints range from limitations imposed by scarce capital to prohibitions set by government regulations. Third, the environment provides opportunities that the organization can explore. When we analyze an organization, we need to consider the factors in the organization's environment and determine how those factors, singly or collectively, create demands, constraints, or opportunities.

The second input is the organization's *resources.* Any organization has a range of different assets to which it has access. These include employees, technology, capital, information, and so on. Resources can also include less tangible assets, such as the perception of the organization in the marketplace or a positive organizational climate. A set of resources can be shaped, deployed, or configured in different ways by an organization. For analysis purposes, two features are of primary interest. One concerns the relative quality of those resources or their value in light of the environment. The second concerns the extent to which resources can be reshaped or how fixed or flexible different resources are.

The third input is the organization's *history.* There's growing evidence that the way organizations function today is greatly influenced by past events. It is particularly important to understand the major stages or phases of an organization's development over a period of time, as well as the current impact of past events—for example, key strategic decisions, the acts or behavior of key leaders, the nature of past crises and the organization's responses to them, and the evolution of core values and norms of the organization.

The final input is somewhat different from the others because in some ways it reflects some of the factors in the organization's environment, resources, and history. The fourth input is *strategy.* We use this term in its broadest context to describe the whole set of decisions that are made about how the organization will configure its resources against the demands, constraints, and opportunities of the environment within the context of its history. Strategy refers to the issue of matching the organization's resources to its environment, or making the fundamental decision of "What business are we in?" For analysis purposes, several aspects of strategy are important to identify. First, what is the core mission of the organization, or how has the organization defined its basic purpose or function within the larger system or environment? The core mission includes decisions about what markets the organization will serve, what products or services it will provide to those markets, and how it will compete in those markets. Second, strategy includes the specific supporting strategies (or tactics) the organization will employ or is employing to achieve its core mission. Third, it includes the specific performance or output objectives that have been established.

Strategy may be the most important single input for the organization. On one hand, strategic decisions implicitly determine the nature of the work the organization should be doing or the tasks it should perform. On the other hand, strategic decisions, and particularly decisions about objectives determine the system's outputs.

In summary, there are three basic inputs—environment, resources, and history—and a fourth derivative input, strategy,

Figure 2
KEY ORGANIZATIONAL COMPONENTS

Component	*Task*	*Individual*	*Formal Organizational Arrangements*	*Informal Organization*
Definition	The basic and inherent work to be done by the organization and its parts.	The characteristics of individuals in the organization.	The various structures, processes, methods, and so on that are formally created to get individuals to perform tasks.	The emerging arrangements, including structures, processes, relationships, and so forth.
Critical Features for Analysis	1. The types of skill and knowledge demands the work poses. 2. The types of rewards the work can provide. 3. The degree of uncertainty associated with the work, including such factors as interdependence, routineness, and so on. 4. The constraints on performance demands inherent in the work (given a strategy).	1. Knowledge and skills individuals have. 2. Individual needs and preferences. 3. Perceptions and expectancies. 4. Background factors.	1. Organization design, including grouping of functions, structure of subunits, and coordination and control mechanisms. 2. Job design. 3. Work environment. 4. Human resource management systems.	1. Leader behavior. 2. Intragroup relations. 3. Intergroup relations. 4. Informal working arrangements. 5. Communication and influence patterns.

which determines how the organization responds to or deals with the basic inputs. Strategy is critical because it determines the work to be performed by the organization and it defines desired organizational outputs.

Outputs

Outputs are what the organization produces, how it performs, and how effective it is. There has been a lot of discussion about the components of an effective organization. For our purposes, however, it is possible to identify several key indicators of organizational output. First, we need to think about system output at different levels. In addition to the system's basic output—that is, the product—we need to think about other outputs that contribute to organizational performance, such as the functioning of groups or units within the organization or the functioning of individual organization members.

At the organizational level, three factors must be kept in mind when evaluating organizational performance: (1) goal attainment, or how well the organization meets its objectives (usually determined by strategy), (2) resource utilization, or how well the organization makes use of available resources (not just whether the organization meets its goals, but whether it realizes all of its potential performance and whether it achieves its goals by building resources or by "burning them up"), and (3) adaptability, or whether the organization continues to position itself in a favorable position vis-à-vis its environment—that is, whether it is capable of changing and adapting to environmental changes.

Obviously, the functioning of groups or units (departments, divisions, or other subunits within the organization) contribute to these organizational-level outputs. Organizational output is also influenced by individual behavior, and certain individual-level outputs (affective reactions such as satisfaction, stress, or experienced quality of working life) may be desired outputs in and of themselves.

The Organization as a Transformation Process

So far, we've defined the nature of inputs and outputs of the organizational system. This leads us to the transformation process. Given an environment, a set of resources, and history, "How do I take a strategy and implement it to produce effective performance in the organization, in the group/unit, and among individual employees?"

In our framework, the organization and its major component parts are the fundamental means for transforming energy and information from inputs into outputs. On this basis, we must determine the key components of the organization and the critical dynamic that shows how those components interact to perform the transformation function.

Organizational Components

There are many different ways of thinking about what makes up an organization. At this point in the development of a science of organizations, we probably do not know the one right or best way to describe the different components of an organization. The task is to find useful approaches for describing organizations, for simplifying complex phenomena, and for identifying patterns in what may at first blush seem to be random sets of activity. Our particular approach views organizations as composed of four major components: (1) the task, (2) the individuals, (3) the formal organizational arrangements, and (4) the informal organization. We will discuss each of these individually (see Figure 2 for overviews of these components).

The first component is the organi-

zation's *task*—that is, the basic or inherent work to be done by the organization and its subunits or the activity the organization is engaged in, particularly in light of its strategy. The emphasis is on the specific work activities or functions that need to be done and their inherent characteristics (as opposed to characteristics of the work created by how the work is organized or structured in this particular organization at this particular time). Analysis of the task would include a description of the basic work flows and functions with attention to the characteristics of those work flows—for example, the knowledge or skills demanded by the work, the kinds of rewards provided by the work, the degree of uncertainty associated with the work, and the specific constraints inherent in the work (such as critical time demands, cost constraints, and so on). Since it's assumed that a primary (although not the only) reason for the organization's existence is to perform the task consistent with strategy, the task is the starting point for the analysis. As we will see, the assessment of the adequacy of other components depends to a large degree on an understanding of the nature of the tasks to be performed.

A second component of organizations involves the *individuals* who perform organizational tasks. The issue here is identifying the nature and characteristics of the organization's employees (or members). The most critical aspects to consider include the nature of individual knowledge and skills, the different needs or preferences that individuals have, the perceptions or expectancies that they develop, and other background factors (such as demographics) that may potentially influence individual behavior.

The third component is the *formal organizational arrangements*. These include the range of structures, processes, methods, procedures, and so forth that are explicitly and formally developed to get individuals to perform tasks consistent with organizational strategy. The broad term, organizational arrangements, encompasses a number of different factors. One factor is organization design—that is, the way jobs are grouped together into units, the internal structure of those units, and the coordination and control mechanisms used to link those units together. A second factor is the way jobs are designed within the context of organizational designs. A third factor is the work environment, which includes a number of factors that characterize the immediate environment in which work is done, such as the physical working environment, the available work resources, and so on. A final factor includes the organization's formal systems for attracting, placing, developing, and evaluating human resources.

Together, these factors create the set of formal organizational arrangements—that is, they are explicitly designed and specified, usually in writing.

The final component is the *informal organization*. Despite the set of formal organizational arrangements that exists in any organization, another set of arrangements tends to develop or emerge over a period of time. These arrangements are usually implicit and unwritten, but they influence a good deal of behavior. For lack of a better term, such arrangements are frequently referred to as the informal organization and they include the different structures, processes, and arrangements that emerge while the organization is operating. These arrangements sometimes complement formal organizational arrangements by providing structures to aid work where none exist. In other situations they may arise in reaction to the formal structure, to protect individuals from it. They may therefore either aid or hinder the organization's performance.

Because a number of aspects of the informal organization have a particularly

critical effect on behavior, they need to be considered. The behavior of leaders (as opposed to the formal creation of leader positions) is an important feature of the informal organization, as are the patterns of relationships that develop both within and between groups. In addition, different types of informal working arrangements (including rules, procedures, methods, and so on) develop. Finally, there are the various communication and influence patterns that combine to create the informal organization design.

Organizations can therefore be thought of as a set of components—the task, the individuals, the organizational arrangements, and the informal organization. In any system, however, the critical question is not what the components are, but what the nature of their interaction is. This model raises the question: What are the dynamics of the relationships among the components? To deal with this issue, we must return to the concept of congruence or fit.

The Concept of Congruence

A relative degree of congruence, consistency, or "fit" exists between each pair of organizational inputs. The congruence between two components is defined as "the degree to which the needs, demands, goals, objectives, and/or structures of one component are consistent with the needs, demands, goals, objectives, and/or structures of another component."

Congruence, therefore, is a measure of how well pairs of components fit together. Consider, for example, two components—the task and the individual. At the simplest level, the task presents some demands on individuals who would perform it (that is, skill/knowledge demands). At the same time, the set of individuals available to do the tasks have certain characteristics (their levels of skill and knowledge). Obviously, if the individual's knowledge and skill match the knowledge and skill demanded by the task, performance will be more effective.

Obviously, too, the individual-task congruence relationship encompasses more factors than just knowledge and skill. Similarly, each congruence relationship in the model has its own specific characteristics. Research and theory can guide the assessment of fit in each relationship. For an overview of the critical elements of each congruence relationship, see Figure 3.

The Congruence Hypothesis

The aggregate model, or whole organization, displays a relatively high or low degree of system congruence in the same way that each pair of components has a high or low degree of congruence. The basic hypothesis of the model, which builds on this total state of congruence, is as follows: "Other things being equal, the greater the total degree of congruence or fit between the various components, the more effective will be the organization—effectiveness being defined as the degree to which actual organization outputs at individual, group, and organizational levels are similar to expected outputs, as specified by strategy."

The basic dynamic of congruence sees the organization as most effective when its pieces fit together. If we also consider strategy, this view expands to include the fit between the organization and its larger environment—that is, an organization is most effective when its strategy is consistent with its environment (in light of organizational resources and history) and when the organizational components are congruent with the tasks necessary to implement that strategy.

One important implication of the congruence hypothesis is that organizational problem analysis (or diagnosis) involves description of the system, identification of

Figure 3
DEFINITIONS OF FITS

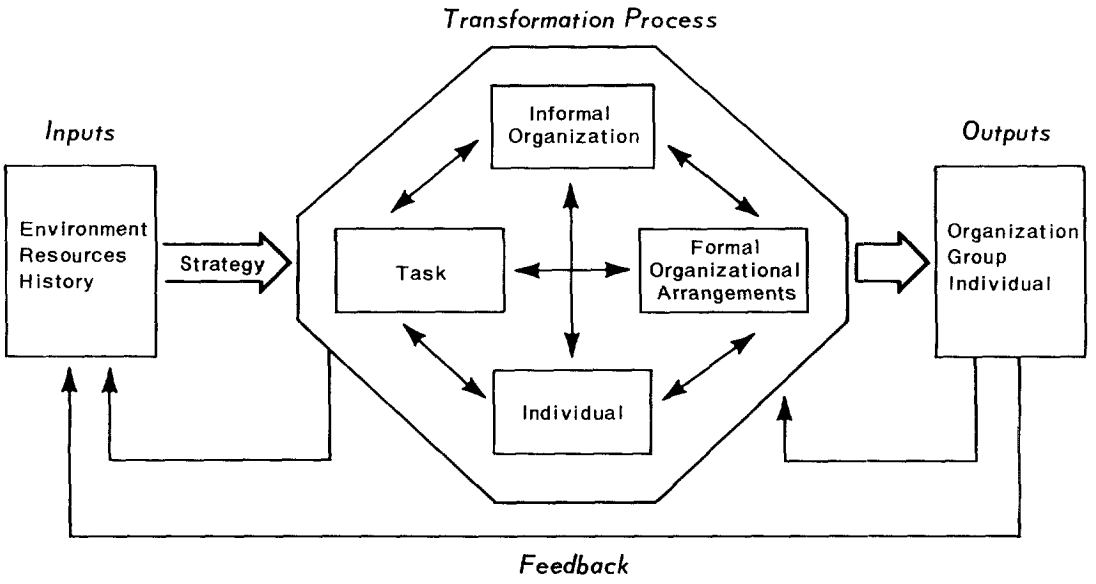
Fit	*Issues*
Individual/Organization	How are individual needs met by the organizational arrangements? Do individuals hold clear or distorted perceptions of organizational structures? Is there a convergence of individual and organizational goals?
Individual/Task	How are individual needs met by the tasks? Do individuals have skills and abilities to meet task demands?
Individual/Informal organization	How are individual needs met by the informal organization? How does the informal organization make use of individual resources consistent with informal goals?
Task/Organization	Are organizational arrangements adequate to meet the demands of the task? Do organizational arrangements motivate behavior that's consistent with task demands?
Task/Informal organization	Does the informal organization structure facilitate task performance or not? Does it hinder or help meet the demands of the task.
Organization/Informal organization	Are the goals, rewards, and structures of the informal organization consistent with those of the formal organization?

problems, and analysis of fits to determine the causes of problems. The model also implies that different configurations of the key components can be used to gain outputs (consistent with the systems characteristic of equifinality). Therefore the question is not how to find the "one best way" of managing, but how to find effective combinations of components that will lead to congruent fits among them.

The process of diagnosing fits and identifying combinations of components to produce congruence is not necessarily intuitive. A number of situations that lead to congruence have been defined in the research literature. Thus in many cases fit is something that can be defined, measured, and even quantified; there is, in other words, an empirical and theoretical basis for assessing fit. The theory provides considerable guidance about what leads to congruent relationships (although in some areas the research is more definitive and helpful than others). The implication is that the manager who wants to diagnose behavior must become familiar with critical aspects of relevant organizational behavior models or theories so that he or she can evaluate the nature of fits in a particular system.

The congruence model provides a general organizing framework. The organizational analyst will need other, more specific "submodels" to define high and low congruence. Examples of such submodels that might be used in the context of this general diagnostic model include the following: (1) the job characteristics model to assess and explain the fit between individuals and tasks as well as the fit between individuals and organizational arrangements (job design), (2) expectancy theory models of motivation to explain the fit between individuals

Figure 4
A CONGRUENCE MODEL FOR ORGANIZATION ANALYSIS



and the other three components, (3) the information processing model of organizational design to explain the task-formal organization and task-informal organization fits, or (4) an organizational climate model to explain the fit between the informal organization and the other components. These models and theories are listed as illustrations of how more specific models can be used in the context of the general model. Obviously, those mentioned above are just a sampling of possible tools that could be used.

In summary, then, we have described a general model for the analysis of organizations (see Figure 4). The organization is seen as a system or transformation process that takes inputs and transforms them into outputs—a process that is composed of four basic components. The critical dynamic is the fit or congruence among the components. We now turn our attention to the pragmatic question of how to use this model for analyzing organizational problems.

A PROCESS FOR ORGANIZATIONAL PROBLEM ANALYSIS

The conditions that face organizations frequently change; consequently, managers are required to continually engage in problem-identification and problem-solving activities. Therefore, managers must gather data on organizational performance, compare the data with desired performance levels, identify the causes of problems, develop and choose action plans and, finally, implement and evaluate these action plans. These phases can be viewed as a generic problem-solving process. For long-term organizational viability, some type of problem-solving process

Figure 5

BASIC PROBLEM ANALYSIS STEPS USING THE CONGRUENCE MODEL

Step	*Explanation*
1. Identify symptoms.	List data indicating possible existence of problems.
2. Specify inputs.	Identify the system. Determine nature of environment, resources, and history. Identify critical aspects of strategy.
3. Identify outputs.	Identify data that define the nature of outputs at various levels (individual, group/unit, organizational). This should include desired outputs (from strategy), and actual outputs being obtained.
4. Identify problems.	Identify areas where there are significant and meaningful differences between desired and actual outputs. To the extent possible, identify penalties; that is, specific costs (actual and opportunity costs) associated with each problem.
5. Describe components of the organization.	Describe basic nature of each of the four components with emphasis on their critical features.
6. Assess congruence (fits).	Conduct analysis to determine relative congruence among components (draw on submodels as needed).
7. Generate and identify causes.	Analyze to associate fit with specific problems.
8. Identify action steps.	Indicate the possible actions to deal with problem causes.

must operate—and operate continuously.

Experience with using the congruence model for organizations for problem analysis in actual organizational settings has led to the development of an approach to using the model that's based on these generic problem-solving processes (see Figure 5). In this section, we will "walk through" this process, describing each step in the process and discussing how the model can be used at each stage. Here are the steps in the problem-analysis process:

1. *Identify symptoms*: In any situation initial information (symptomatic data) may indicate that there are problems, but not what the problems are or what the causes are. Symptomatic data are important because the symptoms of problems may indicate where to look for more complete data.

2. *Specify inputs*: Once the symptoms are identified, the starting point for analysis is to identify the system and the environment in which it functions. This means collecting data about the nature of environment, the type of resources the organization has, and the critical aspects of its history. Input analysis also involves identifying the overall strategy of the organization—that is, its core mission, supporting strategies, and objectives.

3. *Identify outputs*: The third step

is an analysis of the organization's outputs at the individual, group, and organizational levels. Output analysis actually involves two elements: (1) defining the desired or planned output through an analysis of strategy that explicitly or implicitly defines what the organization wants to achieve in terms of output or performance indicators, and (2) collecting data that indicate the type of output the organization is actually achieving.

4. *Identify problems*: Symptoms may indicate problems—in this case, significant difference between desired or planned output and actual output. Such problems might be discrepancies (actual vs. expected) in organizational performance, group functioning, individual behavior, or affective reactions. These data tell us what problems exist, but they still don't tell us the causes. (Note: Where data are available, it's frequently also useful to identify the costs associated with the problems or the *penalties* the organization incurs by not fixing the problem. Penalties might be actual costs—increased expenses, and so on—or opportunity costs, such as revenue lost because of the problem.)

5. *Describe organizational components*: At this step the analysis to determine the causes of problems begins. Data are collected about the nature of each of the four major organizational components, including information about the component and its critical features in this organization.

6. *Assess congruence (fits)*: Using the data collected in step 5 as well as applicable submodels or theories, an assessment is made of the positive or negative fit between each pair of components.

7. *Generate hypotheses about problem causes*: Once the components are described and their congruence assessed, the next step is to link together the congruence analysis with the problem identification (step 4). After analyzing to determine which are the poor fits that seem to be associated with, or account for, the output problems that have been identified, the patterns of congruence and incongruence that appear to cause the patterns of problems are determined.

8. *Identify action steps*: The final step in problem analysis is to identify possible action steps. These steps might range from specific changes to deal with relatively obvious problem causes to a more extensive data collection designed to test hypotheses about relatively more complex problems and causes.

In addition to these eight steps, some further steps need to be kept in mind. After possible actions are identified, problem solving involves predicting the consequence of various actions, choosing the course of action, and implementing and evaluating the impact of the chosen course of action. It is, of course, important to have a general diagnostic framework to monitor the effects of various courses of action.

The congruence model and this problem-analysis process outline are tools for structuring and dealing with the complex reality of organizations. Given the indeterminate nature of social systems, there is no one best way of handling a particular situation. The model and the process could, however, help the manager in making a number of decisions and in evaluating the consequences of those decisions. If these tools have merit, it is up to the manager to use them along with his or her intuitive sense (based on experience) to make the appropriate set of diagnostic, evaluative, and action decisions.

Future Directions

The model we've presented here reflects a particular way of thinking about organizations. If that perspective is significant, the model might be used as a tool for handling more complex problems or for structuring more complex situations. Some directions for further thought, research, and theory development could include these:

1. *Organizational change*. The issue of organizational change has received a good deal of attention from both managers and academics. The question is how to effectively implement organizational change. The problem seems to center on the lack of a general model of organizational change. It is hard to think about a general model of organizational change without a general model of organizations. The congruence perspective outlined here may provide some guidance and direction toward the development of a more integrated perspective on the processes of organizational change. Initial work in applying the congruence model to the change issue is encouraging.

2. *Organizational development over time*. There has been a growing realization that organizations grow and develop over time, and that they face different types of crises, evolve through different stages, and develop along some predictable lines. A model of organizations such as the one presented here might be a tool for developing typology of growth patterns by indicating the different configurations of tasks, individuals, organizational arrangements, and informal organizations that might be most appropriate for organizations in different environments and at different stages of development.

3. *Organizational pathology*. Organizational problem solving ultimately requires some sense of the types of problems that may be encountered and the kinds of patterns of causes one might expect. It is reasonable to assume that most problems encountered by organizations are not wholly unique, but are predictable. The often expressed view that "our problems are unique" reflects in part the lack of a framework of organizational pathology. The question is: Are there basic "illnesses" that organizations suffer? Can a framework of organizational pathology, similar to the physician's framework of medical pathology, be developed? The lack of a pathology framework, in turn, reflects the lack of a basic functional model of organizations. Again, development of a congruence perspective might provide a common language to use for the identification of general pathological patterns of organizational functioning.

4. *Organizational solution types*. Closely linked to the problem of pathology is the problem of treatment, intervention, or solutions to organizational problems. Again, there's a lack of a general framework in which to consider the nature of organizational interventions. In this case, too, the congruence model might be a means for conceptualizing and ultimately describing the different intervention options available in response to problems.

Summary

This article has presented a general approach for thinking about organizational functioning and a process for using a model to analyze organizational problems. This particular model is only one way of thinking about organizations; its clearly not the only model, nor can we claim it's definitively the best model. It is one tool, however, that may be

useful for structuring the complexity of organizational life and helping managers create, maintain, and develop effective organizations.

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