Managerial Problem Solving: A Congruence Approach

Excerpted from

Winning through Innovation: A Practical Guide to Leading Organizational Change and Renewal

By

Michael L. Tushman and Charles A. O’Reilly III

Harvard Business School Press
Boston, Massachusetts

One time permission to reproduce granted by Harvard Business School Publishing, 04/19/2012
KURT HUBER IS A LEAN, INTENSE MANAGER WITH a doctorate in chemistry and 18 years of experience managing within Ciba-Geigy. In 1993, he was transferred as head of Ciba’s U.K. chemical plant to general manager of its plant in Grenzach, Germany. The Grenzach plant was a large facility located on the Rhine River bordering Switzerland. Originally established in 1898, it was one of Ciba’s oldest plants, a traditional chemical manufacturing site with a long-service, highly skilled workforce; formal union-management relations; a seven-level formal hierarchy; a functional structure; and rigid work rules. The facility had four separate production lines and manufactured a variety of chemical compounds for Ciba’s industrial divisions. It was also one of the Chemical Division’s least competitive plants, with labor costs 20 percent above comparable European facilities and four times more costly than wages paid by emerging competitors in Mexico, China, and India. Reflecting these cost problems were a loss in market share, as well as a lack of new products. Worse, since chemical production facilities are expen-
sive, they need to run at full volume. Yet, as volume dropped, the already costly facility became even less competitive. Huber’s assignment was to either fix the plant or close it.

Huber had spearheaded other successful turnarounds but had serious doubts about Grenzach. “There were too many problems and too many possible causes. I knew that addressing one or two of them wouldn’t work. I didn’t think a standard turnaround effort would succeed.” The sheer magnitude of the problems was almost overwhelming. Huber knew that he had only one shot at fixing Grenzach. The head of the Chemicals Division made it clear that he had 24 months or 1,500 people would lose their jobs, including Huber.

To solve this problem, Huber needed a method that would quickly and accurately identify the root causes of Grenzach’s problems. Once critical performance or opportunity gaps are identified, managers like Kurt Huber can rapidly diagnose the causes of these gaps and, in turn, take action to close them. To help managers like Huber perform this diagnosis, we introduce a congruence-based problem-solving approach that is straightforward, easy to use, and supported by an extensive body of research and practice.¹ Our approach does not require outside consultants or sophisticated technology. This method has been used by managers, from CEOs to first-level managers, around the world. It suggests that the alignment, or congruence, between strategy and four organizational building blocks—critical tasks and work flows, formal organizational arrangements, people, and culture—drives today’s success. Incongruence, a lack of alignment, or inconsistencies among these elements is almost always at the root of today’s performance gaps (see Figure 4.1).²

The reason this systematic approach is important is simple: Unless managers and their teams clearly understand the roots of today’s performance gaps or those barriers to achieving strategic opportunities, their attempts to solve these problems or realize the opportunities are likely to be incomplete or cause other unanticipated problems. We illustrate this problem-solving approach with the cases of three managers in three different coun-
tries and in three different industries: Kurt Huber, head of the Grenzach plant of Ciba-Geigy, C.K. Chow, CEO of BOC’s Industrial Gases business headquartered outside of London, and John Torrance, vice president of R&D at Medtek, a clinical diagnostic instrument firm located in New York.

A Process for Organizational Problem Solving

First we outline the five steps needed to use the model and complete a congruence analysis. Each step is simple and
straightforward. Although we focus on managers who have used this approach, we encourage readers to apply it to their own performance or opportunity gaps. At the end of this chapter there is a practical guide that shows in greater detail how a congruence analysis may be done. This will be useful for gaining a greater understanding of organizational data gathering and in doing a careful diagnosis of your own issues. Here we offer a quick overview of this problem-solving process to illustrate the power of this five-step approach (see Figure 4.2).

**FIGURE 4.2**

**A PROCESS FOR ORGANIZATIONAL PROBLEM SOLVING AND LEARNING**

**STEPS:**

1. Identify Manager and Unit of Analysis; and Performance or Opportunity Gaps
2. Describe Critical Tasks and Work Processes
3. Check for Organizational Congruence
   - Task–Formal Organization
   - Task–People
   - Task–Culture
4. Develop Solutions and Take Actions
5. Observe Response and Learn from the Consequences
Step 1: Identify the Unit’s Crucial Performance or Opportunity Gaps

A diagnosis begins with a manager and his or her team defining the performance gaps facing their unit or organization. It is important in doing this to identify those problems or opportunities that lie at least potentially within control of the unit and avoid defining gaps too broadly or in a way that cedes responsibility to a higher level manager. The person doing the diagnosis needs to “own” the gap. At BOC Gases, for example, Chow and his team identified lack of innovation and customer responsiveness as the key performance gaps. For John Torrance at Medtek, the gap centered on a failure to produce new products and turnover among key scientists.

Kurt Huber, faced with the challenge of fixing or closing Grenzach, gathered his senior team at an off-site meeting to reach consensus on the critical performance gaps they needed to address. To help focus its efforts, Huber began by asking each member of the team to prepare an obituary (Nachruf) describing how and when they believed Grenzach would fail. The results were sobering. All the managers predicted that if left unchecked, the plant would fail within the next several years. One common cause of death was identified as “a lack of agreement and focus among management about problems.” Motivated by this insight, the team identified a list of problems, including:

- Loss of market share and shrinking margins
- Lack of new products
- Slow introduction of new products
- Loss of sales
- Cost of goods sold too high

After discussion, Huber and his team decided that the most critical issue to be resolved was “Loss of market share and shrinking margins.” Having taken this first step, they turned to diagnosing the root causes of the gap.
**Step 2: Describe Critical Tasks and Work Processes**

With clarity about vision and strategy, managers can then describe the critical tasks necessary to implement the strategy. What are the concrete tasks necessary to accomplish the objectives and add value from the customer’s perspective? In describing these, also consider how much interdependence or integration is needed among the critical tasks. The amount of required integration is a critical determinant of the skills, structure, and culture required for successful execution of strategy. (Again, the section on critical tasks in “A Practical Guide to Using the Congruence Model” at the end of this chapter provides a full explanation.) For instance, at Medtek, Torrance realized that if he were to be successful at developing innovative new products, his laboratory would have to be world-class in chemical and hydraulic technologies and be able to link these technologies to manufacturing and marketing requirements. For Chow at BOC, a critical task identified for delivering customized service to global customers was close integration across geographically dispersed organizations. With the Grenzach team’s goal of reducing costs, the critical tasks were to maintain the functional excellence within the plant as well as to increase integration across the functional areas.

**Step 3: Check for Organizational Congruence**

Once the critical tasks and work processes have been defined, the alignment or congruence of the three other major organizational building blocks (formal organization structure and systems, people, and the culture or informal organization) can be examined to ensure that these elements are supporting the attainment of the critical tasks. The key diagnostic questions for assessing congruence are: Given the critical tasks and work flows that must be accomplished, how aligned or congruent are the current formal organizational arrangements (e.g., structure, systems, rewards), culture (e.g., norms, values, informal communi-
cation networks), and people (e.g., individual competencies, motives)? Do these organizational building blocks fit with task requirements? Do they fit with each other?

This diagnosis requires only that a manager or team carefully and systematically describe each component of the model and consider its alignment with the critical tasks and work processes. The goal is to describe these, preferably on paper or flip chart, to see whether the current organization is aligned with the critical tasks required to meet the strategic challenges. To the extent that these components fit with each other, the organization is likely to be successful in the short run. On the other hand, if the components are incongruent with the critical tasks or with each other, these inconsistencies are likely to be at the root of today’s performance gaps. (The guide at the chapter’s end provides a more detailed explanation.) To briefly illustrate this process, consider the diagnoses that Chow and Huber completed at BOC and Grenzach shown in Figures 4.3a and 4.3b and 4.4. (Solid lines indicate congruent relationships; dotted lines indicate incongruent relationships.)

**Aligning the Formal Organization.** To ensure that the formal organization and critical tasks are aligned, ask the following diagnostic question: Given the critical tasks and processes needed to execute the strategy, does the current structure facilitate the accomplishment of both the component tasks and their required integration? For example, as shown in Figure 4.3b, Chow and his team identified as a key inconsistency the misfit of their current geographic structure with the critical task of global integration. While BOC’s strategic goal was to provide service to global customers, its structure promoted fierce geographic loyalties and offered no way to link these geographic units together. At Grenzach (Figure 4.4), Huber and his team noted that the seven-level hierarchy and formal structure were inconsistent with speed and were associated with higher costs of coordination and supervision. Further, the rigid job specifications resulted in overstaffing and slow response times.
Several related questions to ask when checking the alignment of the formal organization are: Do the formal linking mechanisms facilitate task integration? Do the existing measurement, control, and career systems track the outcomes important for the execution of the critical tasks and workflows? and Given task demands, are the right things being rewarded (e.g., compensation, recognition, and promotion)? At BOC, the financial reporting system was geographically based and did not permit worldwide reporting by customer. At Grenzach, promotions historically had been based on rigid compliance with procedures. Risk taking and boundary spanning were frowned on. In both instances, it was clear that the formal organization was not aligned with critical tasks.
ALIGNING HUMAN RESOURCES. In addition to checking for the congruence of the formal organization and critical tasks, managers also need to verify that their human resources are aligned with the critical tasks; that is, to ensure that people have the right skill sets and are motivated and committed to accomplish critical tasks. Here several diagnostic questions can be asked: Given the critical tasks, do people have the required competencies to perform them? Are there additional skills or incentives that are needed? Can employees be trained in these new skills or do we need to bring in new people?
For example, at BOC middle managers had deep engineering skills but were weak in marketing and the collaborative skills needed to operate a global matrix. A similar incongruency was discovered at Grenzach. With the firm’s emphasis on narrow technical skills, it was apparent to the Grenzach team that people throughout the plant would need help in working across boundaries. Further, Huber’s team observed that the greatest danger resided among managers who lacked the skills needed to manage in a flatter, less top-down organization. Both teams also realized that there was a further inconsistency between the reward system and the new skills required. Unless the formal and informal reward systems were changed, they realized that there would be
little incentive for people to acquire the needed new competencies or to excel at them.

ALIGNING THE CULTURE. Finally, there is the difficult issue of ensuring congruence between the unit’s or organization’s culture and the required critical tasks. Does the existing culture energize the accomplishment of the critical tasks? Do the informal communication network and informal distribution of power help get the work done? Are there existing aspects of the current culture that may hinder the execution of these tasks? As we shall see in Chapter 5, this is a critical and much overlooked factor in the management of innovation.

For instance, at Grenzach the culture diagnosis identified as central norms a reluctance to take ownership and a reliance on being told what to do rather than a willingness to take action. Huber and his team knew immediately that these norms would never encourage the initiative and responsiveness required by a flatter and cross-functional organization. Unless these norms were changed, neither the cost savings from a leaner organization nor the bottom-up innovation required would occur. At BOC, the current culture of noncooperation across geographies was misaligned with the critical tasks and the new formal organizational arrangements.

This short overview illustrates how the alignment of strategy, critical tasks, and the basic organizational building blocks of the formal organization (structure, systems, and rewards), people (competencies and motivation), and the culture (norms, values, informal communication, and power) is associated with short-term success. A lack of fit among these elements is the cause of performance gaps (assuming the strategy chosen is appropriate) and may require managers and their teams to realign their formal structures, people, and culture with their new critical tasks. Ironically, it is usually the case that the misalignments result from past organizational strengths that, if not modified, can become a future liability.
Step 4: Develop Solutions and Take Corrective Actions

Once core inconsistencies are identified, managers can then take targeted action to bring the system back into alignment. The greater the number of inconsistencies among the organizational building blocks, the more substantial the interventions must be. For instance, a change in only one or two components, such as a new reward system or a shift in culture to reflect a new competitive demand, can usually be managed as incremental change. Systemwide lack of congruence, requiring changes in three or more of the organizational building blocks, demands discontinuous organizational change.

For instance, at Grenzach, Huber and his team determined that to survive they would have to change their critical tasks (technical proficiency and increased integration). Chow and his team at BOC came to a similar conclusion. To help them focus their efforts, both managers and their teams developed revised congruence models that reflected the needed realignment (see Figures 4.5 and 4.6). Realigning Grenzach required simultaneous changes in human resources (new skills, gradual downsizing), formal organizational arrangements (from seven levels to three with new structures, systems, and rewards), and a radically different culture (from security, stability, technology, and tradition to teamwork, initiative, flexibility, openness, and customer orientation). The discontinuous change effort took a year and a massive amount of energy and involvement of Huber and his team. After the initial resistance, the results are gratifying. Today, a new Grenzach plant has emerged with a competitive cost structure, new products, lower accident and absenteeism rates, and the ability to compete in global markets.

A similar discontinuous change has occurred at BOC Gases. Based on their diagnosis, Chow and his team have implemented a new global matrix structure supported by a new measurement and control system; changed the culture to promote collabora-
tion, cross-boundary communication, and a customer focus; and brought in new marketing skills. These systemwide changes are bearing fruit. By 1996, BOC Gases was winning new gas supply contracts, leading innovation, and running more efficiently. For managers in both organizations, the process was the same: Identify the performance gaps; determine the critical tasks needed to achieve strategic objectives; assess the congruence among tasks, people, the formal organization, and culture; and, depending on the diagnosis, take actions targeted to bring these inconsistencies into alignment with the critical tasks.
Step 5: Observe the Response and Learn from the Consequences

Since any action is likely to be incomplete, it is improbable that all performance gaps will be reduced. The diagnosis and actions will typically reveal other problems. But managers and their teams can learn from these situations and reinitiate the process. The idea is to continually refine and readjust the internal congruence of the unit, not to determine the optimal solution for all
problems. At Grenzach, for instance, Huber has recently reinitiated the culture change process and changed the structure and rewards systems to make the plant even more entrepreneurial. At BOC, the inevitable difficulties in operating in a matrix organization have caused Chow and his team to iterate their diagnosis and to refine their operations further. Unlike the old Peters and Waterman exhortation, “Ready, fire, aim,” managers at Grenzach and BOC have used a rapid, diagnostically driven process to continuously aim and fire.

**Assessing Congruence**

Organizational diagnoses are made to understand the causes of today’s performance gaps or to anticipate what might cause problems in the future. Managers begin by first gathering data and describing the four organizational building blocks. Once this is done, the fit among them can be evaluated by determining the degree to which the needs, demands, goals, and structure of each component are aligned with the others. For example, is the reward system congruent with the culture? Are the skills of the people consistent with the career paths offered? Does the structure of the unit facilitate accomplishment of the critical tasks? See Table 4.1 for a full set of congruence relationships.

Internal fit is associated with short-term organizational performance. A lack of congruence between components, drives performance shortfalls and is a root cause of today’s problems. Since these root causes can be anywhere in the system, managers need to be systematic in their diagnosis. Rather than solving the problem, an incomplete diagnosis or partial fix may lead to further problems. While each congruence relationship is important (see the guide at the end of this chapter for more detail), the three relating to aligning (or realigning) organizational components to get the unit’s critical tasks accomplished are particularly crucial. These three alignments are:
TABLE 4.1

CONGRUENCE AMONG ORGANIZATIONAL BUILDING BLOCKS

<table>
<thead>
<tr>
<th>Fit</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>People/Formal Organization</td>
<td>How are individual needs met by the organizational arrangements? Are individuals motivated to accomplish critical tasks?</td>
</tr>
<tr>
<td></td>
<td>Do individuals have clear perceptions of organizational structures?</td>
</tr>
<tr>
<td>People/Critical Tasks</td>
<td>Do individuals have the skills and abilities to meet task demands?</td>
</tr>
<tr>
<td></td>
<td>How are individual needs met by the task?</td>
</tr>
<tr>
<td>People/Culture</td>
<td>How are individual needs met by the informal organization?</td>
</tr>
<tr>
<td>Critical Tasks/Formal Organization</td>
<td>Are formal organizational arrangements adequate to meet the demands of the task?</td>
</tr>
<tr>
<td></td>
<td>Do they motivate behavior that is consistent with task demands?</td>
</tr>
<tr>
<td>Critical Tasks/Culture</td>
<td>Does the culture facilitate task performance?</td>
</tr>
<tr>
<td></td>
<td>Does it help meet the demands of the task?</td>
</tr>
<tr>
<td>Formal Organization/Culture</td>
<td>Are the goals, rewards, and structures of the culture consistent with those of the formal organization?</td>
</tr>
</tbody>
</table>

1. Task-People. To what extent do the skills, abilities, and motives of today’s human resources fit with task requirements? For example, at BOC, Chow’s new strategy and tasks demanded deep marketing competencies. Yet an audit of Chow’s current marketing skills indicated real weaknesses not only within Chow’s team but also within the larger organization. If this task-human resource inconsistency is not addressed, BOC’s ability to execute its new strategy will be stunted.

2. Task-Formal Organization. To what extent do organizational arrangements fit with task requirements? For example, at Medtek, Torrance’s laboratory was functionally organized but
the new tasks emphasized developing new products, which required strong integration across functions. Unless formal linking mechanisms are developed, this task-structure inconsistency will impede the innovation critical to Medtek’s survival.

3. Task-Culture. To what extent does the unit’s culture fit with task requirements? At Grenzach, almost a hundred years of tradition emphasized technical excellence and formal authority. But the new task requirements demand speed, teamwork, and initiative. If left unaddressed, the old culture would drag down Huber’s efforts to save the plant, regardless of how the organization is structured. This culture-task inconsistency was a major cause of the performance gap at Grenzach.

Organizational diagnoses pivot on the critical tasks and work processes. Once these are specified, managers can use the congruence model to diagnose the current degree of fit between their current organization and that needed to successfully execute their strategy. The basic principle of our approach is: Today’s effectiveness is enhanced the greater the total degree of congruence among different organizational components. The lack of congruence among organizational building blocks are the causes of today’s performance or opportunity gaps.

Once critical problems or opportunities and their root causes are identified, the focus is not on searching for the single “right” answer, but on a process by which managers can determine which of several possibly correct answers might work for them. For a particular manager with a particular context and performance gaps, there are almost always a number of right answers. The correct ones are those that deal with the specific inconsistencies identified in the diagnoses. For example, at BOC Gases, Chow and his team discovered that the current structures, systems, cultures, and marketing capabilities were inconsistent with their aspirations for effective technology transfer and satisfied global customers. This diagnosis led, in turn, to several possible system wide changes at BOC. Chow and his team evaluated the
relative costs and benefits of the various options and decided on a global matrix as their structural intervention.

While our method does not provide optimal answers, it does offer a rigorous process for initiating targeted actions based on systematic analysis. No intervention will ever be perfect. Our approach simply asks managers to quickly gather data, take targeted action, and learn from their actions. As Percy Barnevik of ABB is fond of saying, “Nothing is worse than procrastination. . . It’s better to make decisions quickly and be right seven out of ten times than to waste time trying to achieve the perfect solution.” In articulating the management principles for ABB, Barnevik notes that to stick one’s neck out and do the right thing is obviously best. But he says that second best is to take action, make a mistake, and learn from your actions. To take no action is the only unacceptable behavior for ABB managers. We agree. It is better to get an approximately correct solution quickly than an optimal solution slowly. Organizational learning is about finding good-enough solutions to important problems or opportunities and making error-correcting adjustments to get better and better; learning, especially in a rapidly changing world, is not about always finding the precise answer.

**Using the Congruence Model**

We have helped and observed hundreds of managers using the congruence model. The guide at the end of this chapter reflects our experience and provides greater detail on doing a diagnosis. Based on the experiences of these managers, a number of suggestions for using the congruence model as a tool for managerial problem solving have been offered. They reflect common problems that managers have encountered and their suggestions for how to avoid these difficulties. The following rules of thumb are designed to alert managers to possible pitfalls before using the congruence model and ensure greater success from its use.
1. Be clear about the unit of analysis; that is, who owns the problem. What is controllable and what isn’t? Managers in different positions may have different problems and develop different diagnoses to the same performance gaps. The first step in organizational diagnosis is to clarify who the manager is and to identify performance or opportunity gaps from that perspective. This sounds trivial but it is easy for a manager to define a problem from the boss’s or CEO’s perspective with the result that many solutions are not implementable because they exceed the specific manager’s control.

2. To the extent that the strategy or vision is wrong, no amount of diagnosis and root cause analysis will help. Organizations exist to accomplish strategic goals. If the strategy emphasizes the wrong product or service, to the wrong market, with the wrong technology and bad timing, no amount of organizational problem solving can help. Tight alignment with the wrong strategy ensures quick failure.

3. Comprehensive diagnoses are necessary. Since success depends on the alignment of the four organizational building blocks, it is critical that any diagnosis consider all of them. Focusing on one or two, as is customary in reengineering or TQM efforts, may miss the need to align other components. For instance, a common failure in reengineering efforts is that managers ignore the informal organization with the result that cultural inertia and political resistance wreck the process.

4. The type of change required depends on the number of inconsistencies discovered. If a diagnosis reveals incongruencies between only one or two organizational building blocks, incremental change is possible. If, however, the diagnosis shows inconsistencies among three or more building blocks (e.g., new critical tasks require changes in people, formal arrangements, and culture), discontinuous change is needed. As we will see in Chapter 8, this has important
ramifications for how a manager thinks about and initiates change.

5. For any diagnosis, there may be many possible interventions. As such, there is no single best solution. Rather, the question is what set or combination of components needs to be changed to achieve congruence? Different managers may choose to intervene in different ways. What is important is that any intervention deal with the inconsistencies identified in the diagnosis and drive greater congruence among the building blocks.

6. Our approach focuses on problem definition and root cause analyses from a particular manager’s position. Sometimes, a diagnosis shows that the root causes of the performance gap are beyond the control of the focal manager. In these circumstances, the manager needs the skills to manage his or her boss, peers, customers, or others outside the unit. If the manager lacks these influence skills outside his or her area or has no leverage, all the diagnostic work will yield is an insightful but frustrated manager.

7. The congruence approach emphasizes gathering data prior to taking action. Although logical, our experience suggests that this is often an unnatural act for many managers. In the press of day-to-day business, managers often lack the time to be systematic. There is a bias toward immediate, decisive action. We urge managers to step back and gather data prior to intervening—to be systematic in their diagnoses. This is not paralysis through analysis but data-driven problem solving. Both Chow and Huber completed their initial diagnoses over two-day periods, not months of analysis. Their diagnoses led, in turn, to systematic interventions over 12-18 month periods.

8. Successful problem solving is a function of both what managers do (i.e., the actions they take) and how they do it (i.e., their execution). Effective managers do the right thing and do it well. Knowing what to do is half the solution. Being
able to implement the needed changes is equally as important. Great ideas executed poorly are as bad as poor ideas executed flawlessly. To help avoid these problems, we discuss specific tools for the management of change in Chapters 8 and 9.

9. This disciplined problem-solving approach and learning from one’s actions is associated with greater effectiveness over time. Different managers may develop different diagnoses for the same problem. Further, the same diagnosis can spawn multiple possible interventions. Rather than focusing on the correct intervention to solve a particular problem, our approach asks managers to focus on the process by which they attack the problem. All managers will make mistakes in both diagnoses and action. Excellent managers are not paralyzed by studying problems, or by making mistakes, rather, they are able to learn by doing.5

Although managers may know that organizational hardware and software must fit task requirements, they are often most familiar and comfortable with the vertical axis of our model—the organization’s technical systems. Given the difficulty of both diagnosing and changing the organization’s software, we move in Chapter 5 to a detailed discussion of culture and social control.
Our congruence model is rooted in gathering systematic organizational data and assessing to what extent the firm’s current people, formal organization arrangements, and culture help (or hinder) accomplishing critical tasks. We now describe each organizational component and the different congruence relations in more detail.

**Critical Tasks and Work Flows**

The reason an organization, or a unit within an organization, exists is to accomplish the tasks necessary to achieving its strategic goals and vision. Whether the structure, systems, rewards, people, and culture of the organization or the unit are appropriate can be evaluated only in terms of how these elements help or hinder the execution of the critical tasks. Organizational diagnoses, then, begins by systematically describing the critical tasks, always posing the question: Do these tasks and task processes help achieve our strategic goals?6

The critical task data need to be gathered within a manager’s unit (What tasks does the unit perform?) and between this unit and other interdependent areas (Are our tasks critically interdependent with areas within and outside our organization?). For example, if BOC’s vision is to compete by serving customers globally as well as locally, the tasks that must be performed
include those that satisfy the current requirements of manufacturing and distributing locally as well as those new tasks required to integrate the entire system around a set of global customers.

In analyzing tasks and work flows, managers need to understand their unit’s component tasks and how work flows among these tasks and with other interdependent areas.

**Component Tasks**

What are the pieces of work that a particular manager must get accomplished to meet the strategic goals? For Chow, the component tasks were managing the industrial gases business in each country. In Torrance’s laboratory, the critical tasks were research and development in hydraulics, advanced development in clinical chemistry, and other technical service work.

A key consideration in examining component tasks is the amount of uncertainty each one entails. Highly uncertain tasks are difficult to preplan and cannot be executed by standard routines. Tasks that have fundamentally different levels of uncertainty may need to be separated from one another and organized and managed differently. Where component tasks differ in terms of uncertainty, so too must the structures, competencies, and cultures, and leadership styles associated with them. For example, even though each country that BOC was involved with was in the same business, the competitive uncertainties were much higher in the Pacific Rim than in the more predictable and mature British market. Thus the strategy, structure, people, and processes in Great Britain may need to be different from those in the Pacific Rim.

Within your unit, what are the key component tasks to be accomplished? Do these tasks differ in terms of task uncertainty? Are some routine, others nonroutine?
Work Flows

Who has to do what to and with whom to get the product made or the service performed? Asking this question gets at the work flows or interdependencies among component tasks within and among units. For Chow, this means understanding the work flows between geographic regions in the development of new products and in meeting the needs of global customers. For Torrance, this means understanding the work flows between units within his lab and among his lab and marketing, sales, and production.

Three types of interdependence affect congruence with other organizational building blocks: pooled, sequential, and reciprocal interdependence (see Figure 4.7). Each type of interdependence requires different formal organizations, cultures, and human resource capabilities.8

---

**FIGURE 4.7**

**TYPES OF INTERDEPENDENCIES**

<table>
<thead>
<tr>
<th>POOL</th>
<th>Pooled…Work Done Independently by Different Entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEQUENTIAL</th>
<th>Linear Work Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit A</td>
<td></td>
</tr>
<tr>
<td>Unit B</td>
<td></td>
</tr>
<tr>
<td>Unit C</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECIPROCAL</th>
<th>Complex, Interlinked Feedback Loops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit A</td>
<td></td>
</tr>
<tr>
<td>Unit B</td>
<td></td>
</tr>
<tr>
<td>Unit C</td>
<td></td>
</tr>
</tbody>
</table>
Pooled interdependence exists when component tasks have no linkage with one another; that is, each subunit does its own work, and the larger system’s performance is simply the sum of each subunit’s output. While units with pooled interdependence may share common resources, such as access to corporate capital or human resources, no work flows between these independent entities. Pooled interdependence is the simplest form of interdependence to manage—with no cross-unit interdependence there is little need for the systems and structures necessary to coordinate actions.

Sequential interdependence exists when component tasks are linked in a linear sequence. In a sequential work process, early component tasks must be completed before later tasks are accomplished, making each unit dependent only on the immediately preceding one. The structures and systems of sequential interdependence are more complex than those in pooled processes because more planning and coordination are required to accommodate work flows. Similarly, people in sequential situations require more interpersonal skills to facilitate negotiation and coordination with those involved in the sequential work flows. Under the old Grenzach organization, work flowed from one process to the next in a typical linear manufacturing process.

Reciprocal interdependence exists when each component task is inherently linked to other tasks; that is, the completion of one component task is dependent not only on the preceding task but also those that follow. Reciprocal interdependence is the most complex form of interdependence. Diagrams of reciprocal task processes are filled with double-headed arrows and complex feedback loops. So intrinsic is reciprocity to such work flows that complexity remains even after these processes have been reengineered. These complex interdependencies require collaboration, teamwork, and trust because their work processes demand mutual adjustment.

While pooled, sequential, and reciprocal processes are distinct forms of interdependence, managers typically have to deal with several types of interdependencies simultaneously. Most of
the work at Chow’s gas companies is done through pooled interdependencies, but addressing both innovation and global customer requirements also involves reciprocal processes. At Medtek, Torrance’s R&D managers had to deal with both pooled and reciprocal interdependence situations to develop new products.

Managers must diagnose work flows across multiple boundaries. Not only do they have to diagnose work flows laterally and vertically within their organization, but managers must also describe them externally with suppliers, vendors, and alliance partners. These extra-organizational linkages are increasingly important as more and more organizations establish joint ventures, alliances, and strategic partnerships.9 The higher the manager’s level in the firm, the more critical the extra-organizational processes become.

Innovation in organizations always involves reciprocal interdependence. One reason managing innovation is so difficult is that the work requirements are necessarily highly interdependent and complex.10 Managing innovation demands linkages among customer requirements, technological possibilities, and manufacturing capabilities. Furthermore, these linkages often take place across functional areas separated by both organizational and geographic boundaries.11 Inevitably, these complex work processes must often be accomplished along with the more routine work.

Because critical tasks and work processes are driven by strategy, they can change as the unit’s strategy changes. At BOC Gases, to the extent that Chow and his team want to operate their business as a worldwide federation of distinct national organizations, there is little interdependence between countries. If, however, Chow and his team decided to compete as a global solutions provider, the country organizations and the members of Chow’s team would need to establish and manage reciprocal work flows even as they continued to manage their local businesses independently.
What work flows exist within your unit, among your unit and other areas of your organization, and with areas outside of your organization? To what extent do these work flows differ? For example, does your unit have reciprocal interdependence with other areas? What about pooled or sequential interdependence?

PEOPLE: DIAGNOSING HUMAN RESOURCES

Managers must also ensure that their people are aligned with critical tasks and work processes. This requires assessing four aspects of the companies’ human resources: competencies (What are they good or bad at?), motives (What rewards are most effective in motivating them?), demographics (How long have people worked together?), and country differences (What is the cultural mix?).

Human Resource Competencies

Do people have the knowledge, skills, and abilities to perform the critical tasks and work flows? Managers must gather these data not only about their direct reports but also about themselves and their supervisors, critical peers, and external colleagues. What are each player’s strengths and weaknesses with respect to task requirements? To what extent does the management team have both content and interpersonal skills?

At Southwest Airlines great care is taken during staff selection to ensure that people have a positive attitude and a willingness to be team players. These qualities are important since the critical tasks at Southwest emphasize keeping costs low through high employee productivity and having fun. Without these characteristics, Southwest would have a difficult time executing its strategy of low cost and superlative customer service. At ABB, Percy Barnevik says that to be an effective global executive, “You need the ability to understand other people’s ways of doing
things.” For ABB to succeed at operating in 230 countries, Barnevik asserts that his global managers must be open-minded, patient, and incisive. He believes that without these competencies, it would be difficult to think globally and act locally. Managers need to be clear about how well the competencies of their human resources fit critical tasks and work flow demands.

**Motives**

Beyond competencies, managers can gather data on individual differences in motivation so that they can design reward systems that are aligned with both individual needs and critical tasks. In his Pulitzer Prize-winning book, *The Soul of a New Machine*, Tracy Kidder details the heroics involved in the development of a new computer by Data General engineers. He describes how project leader Tom West based his human resource strategy on hiring only young, newly graduated engineers with high achievement needs. Older, more experienced engineers might have said that the time frame for the project was impossible, but the inexperienced youngsters, unequipped to anticipate the daunting demands of the task ahead, responded enthusiastically to West’s extraordinarily challenging jobs and outrageous deadlines. The project burned out many of the team members and some left Data General. West simply hired the next wave of young, technology-driven high achievers.

This unconventional human resource strategy succeeded because West knew enough not to choose more experienced people and because he motivated his team masterfully. Similarly, Chow knew he had to hire more entrepreneurial managers to run his market-sensitive Far East businesses, while he needed more focused, technically oriented managers to run his mature, cost-oriented U.K. businesses. Choosing the right people and motivating them to get the job done does not mean that managers must be psychologists; it does ask them to be sensitive to individual differences and motivate people accordingly.
Demographics

How long has the team worked together (i.e., How old is the group?), and what is its functional mix? Are there important differences in ages and backgrounds that may affect group dynamics? The challenges of managing young, heterogeneous teams are different from those of managing older, more homogeneous teams. While young, heterogeneous teams may be better able to deal with complexity and uncertainty, older teams may be better able to execute in stable, more certain contexts. Further, how different is the manager from the rest of the team? The greater the demographic differences, the greater the potential for team conflict. When Chow was promoted to CEO, he had 20 years’ experience with BOC and knew all his direct reports. Contrast his challenges with those of Paul O’Neill, who stepped into the CEO position at Alcoa having no aluminum industry experience and inheriting a team of executives, all of whom had grown up in the aluminum industry and had worked with each other for, on average, more than 15 years.

National Cultures

How do people from different national cultures deal with interpersonal differences, resolve conflicts, and relate to the organization? Managers need to be sensitive to these differences not only in managing individuals from different countries, but also in managing the consequences of the diversity in their management teams. For example, Kurt Huber’s British engineers at Grenzach may need to be managed differently than his Japanese engineers, who, in turn, may need to be managed differently than the mostly German workforce. Huber will have to be sensitive to these country differences not only in managing these individuals, but also in managing the consequences of the diversity in his management team.

Human resource practices may have a greater impact on a unit’s employee characteristics and competencies than do coun-
try effects. While there are important differences in national cultures, these are often attenuated by the systematic effects of training, education, socialization, rewards, and career systems. Percy Barnevik observes that ABB is a company without a home—it is, however, at home around the world. While its managers speak English, ABB is not American; while it is headquartered in Zurich, ABB is not Swiss; while Barnevik and several members of the board are Swedish, ABB is not a Swedish company. Rather, ABB is a company of the world—it thinks globally (with globally oriented managers) but acts locally (with locally focused country organizations). The commonality of managerial practices and ABB’s ability to leverage competencies and skills worldwide come from its ability to mold managers from hundreds of countries into a network of collaborative teams that speak a common ABB managerial language. These shared skills and competencies are driven by ABB’s comprehensively designed human resource practices.

• Describe the human resource characteristics within your unit as well as within your team and your manager’s team. What are the skills, abilities, demography, and key individual and country differences within your unit? What motivates your boss and members of your team?

• To what extent do your human resources have the skills, motivation, and abilities to accomplish critical tasks and work processes?

THE FORMAL ORGANIZATION

The third step of the diagnosis is an examination of the congruence between critical tasks and the formal organization. The formal arrangements include the stated structures, roles, procedures, measures, and systems that managers use to direct, control,
and motivate individuals and groups to perform the unit’s critical tasks. These arrangements have an enormous impact on a firm’s performance. Typically senior management has the most control over formal organizational arrangements. But middle managers can also control a range of formal procedures such as promotion, job design, and subunit organizational design and can tailor training and rewards to best fit their subordinates’ needs. In making a diagnosis to understand roots of today’s performance gaps, managers need to consider several dimensions of the formal organization: strategic grouping; linking mechanisms; and formal reward, measurement, and control systems.

**Strategic Grouping**

Strategic grouping refers to the unit’s formal structure. There are only a limited number of strategic grouping options—by function, market, geography, product, or some combination of these options (e.g., function and product). For example, while Chow’s gases business was organized by country, some of his team were pushing a country by market matrix structure.

While structures that combine grouping options are designed to be responsive to several strategically important dimensions simultaneously, they are also characterized by conflict and role overlaps. For example, in the early 1990s, Percy Barnevik chose a three-dimensional structure for ABB, organizing the company by products, geography, and function. Such a structure guaranteed tension as managers are pushed to balance country, product, and functional demands. In Barnevik’s opinion, this complex organization structure was required if ABB was to execute its vision to “Think globally, act locally, with world-class technology.”

The strategic grouping decision is the most fundamental choice managers make after strategy, objectives, and vision are established. From that key choice emerges the range of more operational structures, rewards, career, and linkage decisions. There is no optimal organizational structure; each strategic
grouping choice has its costs and benefits. So rather than being imposed from without, the choice among possible options is driven from within by the unit’s own strategy and vision. The grouping choice, then, will reflect the unit’s strategy and facilitate the accomplishment of the critical tasks necessary to execute that strategy. Since strategic grouping decisions affect the larger organization, these decisions must be made in collaboration with the manager’s boss and his or her peers.

The strategic grouping decision is one that needs to be revisited as the organization’s strategies evolve and develop. Today’s organizational form usually reflects yesterday’s strategy; it is an artifact of the organization’s history. But as strategy changes, the organizational architecture must also shift. Insofar as managers use yesterday’s structure to execute today’s strategy, the organization may be held hostage to its past. If, for example, BOC Gases, R&D at Medtek, or Grenzach at Ciba are to move on their respective strategies and critical tasks, Chow and Huber, and their teams must revisit their strategic grouping choices. In each case, existing structures were stifling task execution.

Of all the formal organization choices that managers make, strategic grouping is perhaps the most consequential. It affects not only other formal organizational arrangements, but also the unit’s human resources and culture. While the choice of strategic grouping is crucial, it is frequently a decision that is either ignored or made in a cavalier fashion.

**Linking Mechanisms**

Linking mechanisms are the formal organizational arrangements that knit together various parts of the firm and link it to its suppliers, customers, and partners. Formal linking mechanisms include plans, committees, teams, task forces, brand or project managers, and liaison roles. For a particular unit, linking mechanisms can range from the simple (relying on plans) to the complex (using teams and task forces). After describing critical work processes within their unit and between their unit and external
areas, managers can evaluate the extent to which existing linking mechanisms are congruent with work flows.

The choice of linking mechanisms should be driven by work flows inside and outside the unit. If linking requirements are minimal, linking mechanisms can be simple. If task interdependencies are complex, however, linking mechanisms should reflect the complexity. At BOC Gases, for example, if little linkage is required between country organizations, Chow may choose to be the formal linking mechanism himself. If, however, global customers require integrated, worldwide delivery systems, more complicated formal linking mechanisms, such as global product teams and information systems, will be needed to deal with the increased interdependence.

The choice of strategic linking mechanisms between the manager’s unit and other units should also be consistent with extra-unit work processes. Each complex, reciprocal interdependency with another area needs to be managed with complex formal linkage mechanisms. For instance, Wal-Mart is Procter & Gamble’s single largest customer. Given the volume and complexities of the relationship, the two companies have established a joint organization, staffed by employees from both companies, designed solely to manage their mutual interdependence. At Ciba, Kurt Huber needs to choose linking mechanisms within his production unit as well as a set of complex linking mechanisms to integrate with other functional areas in the Grenzach plant and in the larger Chemical Division. Managers must, then, choose formal linking mechanisms that attend to work processes within their units, across with peer units, up with the manager’s boss, and outside with suppliers, customers, and/or alliance partners.

Formal Reward, Measurement, and Control Systems

Organizations usually get what they measure and reward. For that reason, an organization’s formal reward, measurement, and control systems must be consistent with its critical task requirements. Managers must assess existing rewards, measurement,
and control systems. Too often, what is measured is not consistent with critical task requirements. When a large group of managers in a major U.S. computer company were asked what it takes to get ahead, there was great consensus that giving good presentations, massaging your boss, and being politically sensitive were critical success factors. This was in an organization where senior management stressed the need for innovation and risk taking! In a similar survey of a large, diversified European firm, managers responded that avoiding risks and being conservative were rewarded. Again, this was what the formal reward system reinforced even though efforts were under way to make the company fast and flexible.

If the component tasks are different, reward systems need to be different. Recall that Chow’s booming Far East businesses faced very different tasks than did the same business in the more mature U.K. market. Since the work requirements between regions are so different, the reward and measurement systems must also be different. If, however, cooperation and integration are needed to accomplish critical tasks (for example, the development of a new gas technology), the reward system should monitor and reinforce successful collaboration. BOC’s country organizations should also be measured on and rewarded for their joint efforts.

Managers must also ensure that their formal reward and measurement systems are equitable. Both high- and low-performing individuals, groups, and teams must see the consequences of high performance. If rewards are perceived as being allocated equally (without reference to performance), they provide no incentive for high performance. The only reward system worse than an equality-based system is a random one in which no one knows how rewards are allocated! While it may be difficult to assess performance, particularly for complex, highly interdependent tasks, well-designed, equity-based reward systems can be a powerful driver of organizational effectiveness, just as poorly designed reward systems can be a root cause of today’s performance gaps.
Career and Promotion Systems

A final element of the formal organization to be checked for alignment with the critical tasks is the promotion and career system. Promotion ladders are closely watched by employees and should reflect the requirements of critical tasks. For example, if managers at BOC are hired and promoted only within the national organization, the firm will amass great competency and depth within its various geographic areas but few cross-country competencies or informal communication networks. In contrast, the career and promotion systems at ABB emphasize both technical and global competencies through functional career management as well as global integration through cross-business and global job mobility. At Philips, until recently, successful careers meant being promoted to country manager. This led some of their most talented people to become national organization managers. With the reorganization of Philips as a global product organization, however, the previous career system was no longer aligned with the requirements of the critical tasks. Unless this system is changed, it may unwittingly anchor Philips to the past and create barriers to the execution of its new strategy.

- Describe your unit’s formal organizational arrangements. What is your unit’s formal structure? What are the formal linking mechanisms within your unit, within your larger organization, and with areas outside your firm? What is formally measured and controlled in your organization? How do your formal career and promotion systems operate?

- To what extent does your formal organization help get your critical tasks accomplished? “To what extent are your structure, system, rewards, and controls congruent with the task and work flow requirements?”
CULTURE AND THE INFORMAL ORGANIZATION

While organizational arrangements reflect decisions about formal structure, rewards, and roles, the informal organization reflects emergent structures, rewards, and roles. Informal patterns of interaction drive a firm’s informal structure, power, and communication networks. Emergent norms and values define the organization’s culture and act as a social control system. While culture can facilitate innovation, it can also get in the way. Unless managers are sensitive to the effects of social control and actively shape informal patterns of interaction, culture may act as an inertial force hindering innovation and change. These emergent patterns can be diagnosed and shaped by managers. To what extent is there a fit between critical tasks and the unit’s culture and informal organization?

Norms and Values

An organization or group’s culture is defined by its norms and values. Values reflect beliefs about what is really important. Norms are the widely shared and strongly held social expectations about appropriate attitudes and behavior such that compliance with the norm is seen as right and appropriate and noncompliance is punished. Norms and values are the foundations of organizational culture that can help or hinder the execution of a unit’s strategy. At Intel, the large semiconductor firm, a widely shared value throughout the organization is speed, so employees all realize the importance of getting things done quickly.

In organizations, norms can affect a variety of outcomes such as work behaviors (e.g., People don’t work on weekends or Taking the initiative is expected), attitudes (It’s us against them), orientation toward customers (We pay particular attention to customer feedback here), relations with units outside the focal unit (We just don’t trust or pay much attention to R&D types), conflict resolution methods (We don’t confront conflict openly), and dress codes (We’re supposed to wear ties when we interact...
with management). Since norms reflect shared agreements about what’s important, it is common to see variations across an organization and its subunits. Norms in a manufacturing unit, for instance, are likely to be different from those in marketing; norms in one location may be different from those in another.

Managers can gather data on norms by noting the way they and others (particularly newcomers) are treated and by observing what actions and attitudes group members approve or disapprove. For example, in the early 1980s, one of the authors spent a sabbatical year teaching and conducting research with faculty at the Harvard Business School and the Sloan School at MIT. These two business units (note that the unit of analysis here is the business school as opposed to other parts of the university) are in the same business and are located no more than two miles from each other. Yet the two organizations had completely different cultures. New Harvard faculty quickly learned that the school paid attention to teaching—faculty were supposed to get to know the students’ names and spend time with the MBAs. At the Sloan School, in contrast, faculty soon learned to pay attention to their own research agendas. Course coordination meetings were sometimes missed, but faculty research colloquia were not. While neither norm was necessarily better than the other, each reflected the school’s strategy at the time—Harvard’s emphasis on MBA education and Sloan’s on research.

Organizations with widely shared norms and values often show great consistency of attitudes and behavior. When people are asked, “What’s important around here?” the less the variance in response, the stronger the core values and the stronger the culture. Whenever core values are highly focused, norms are also focused and consistent. On the other hand, when core values are diffuse (15 different people give 15 different answers to the diagnostic question), operating norms are apt to be diffuse.

Managers need to distinguish between vision and their unit’s actual norms and values. Vision is an aspiration; norms and values reflect the reality of the shared social expectations within the unit. Vision and the organization’s real norms and values may or may not be aligned. For example, at Alcoa, Paul O’Neill
espoused a vision of leadership through quality. But if employees at an Alcoa bauxite mine in Australia are asked, “What’s important around here?” and they do not answer, “Quality,” O’Neill’s vision is only a corporate slogan that is not shared in the field. For this reason, managers must not only be clear and consistent in articulating a competitive vision, they must also be able to step back and gather data on their unit’s actual shared norms and values.

It is difficult to actively shape core values and culture without a clearly articulated competitive vision. If vision is clearly espoused and modeled by the executive team, then it is easier to shape norms and core values. When that vision is ambiguous or not clearly communicated, norms and core values develop on their own, which can result in different and inconsistent expectations across units. While such variation can be appropriate, agreement on certain fundamental values (e.g., the value of teamwork or personal integrity) is essential for the rapid execution of strategy. Fuzzy core values and inconsistent norms can result in chaos, confusion, and increased organizational politics.

Communication Networks

Informal patterns of communication, who actually talks to whom within and outside the manager’s unit, provide detail about the heart of the informal organization. Figure 4.8 is a sociometric map of who-talks-to-whom in John Torrance’s laboratory. Simply by looking at these patterns of interaction it is easy to spot the key individuals. By looking for communication nodes in the network, managers can predict that 59, 19, 74, 40, 80, 39, and 32 are key players. These key individuals and their associated networks have a major impact on innovation and change efforts.

Informal social networks also provide insight into the distribution of informal power within the organization. While formal power is a function of rank or position in the hierarchy, informal power is a reflection of social location. Figure 4.8 shows that 59, 19, 74, 40, 80, and 32 have considerable informal power. One way to assess informal power is by asking questions such as,
FIGURE 4.8
Informal Patterns of Communication at Medtek
When you need something done, whom do you go to? or How do things work around here? When professionals in the R&D laboratory were asked these questions, they did not nominate Torrance or any member of his top team. Rather, they identified the informal power centers such as numbers 59, 19, and 74. Individuals such as numbers 28, 82, 50, and 47 had very little informal power—they were communication isolates in this system.

Formal power is very different from informal power, and the two do not necessarily overlap. While formal power relies on rank and the ability to monitor and reward, informal power is rooted in social location. In Figure 4.8, Torrance was number 50. Although he may have substantial formal power, he clearly had little informal power. Worse, his team members (47, 73, and 31) were isolated from each other as well as from others in the laboratory. It is not surprising that this group relied on formal authority and systems to manage change. Such reliance on formal systems will seldom be sufficient to get the job done in highly interdependent settings.

It is also possible to predict leadership style from a manager's position in the communication network. Simply based on social location and without any data on personality or background, one can predict that Torrance (50) was a distant, aloof, manage-by-the-numbers type of manager, while number 19 was more participative. Indeed, when asked how he managed change, Torrance replied, “By reengineering work flows and by changing structures and roles.” He ignored the crucial impact of the informal organization in his laboratory. Had he been more sensitive to these informal dynamics, he might have known that numbers 19, 59, 80, and 74 were developing a coalition to bring him down. The lesson is clear: Managers need to pay attention to both formal and informal power—and appreciate that these two types of power may not overlap.

Informal power cannot be conferred on a person; it can only be earned or developed by attending to two fundamental individual characteristics—work-related expertise and interpersonal
Individuals become informal communication nodes partly because they have information and expertise that others need and partly because they have interpersonal skills. While managers cannot confer informal power, they can create the conditions where an individual can become informally powerful through job assignments, job rotation, committee assignment, travel expenses, and personal coaching. The most influential managers are, of course, those who have both formal and informal power.

But what about number 28? Notice how isolated this person is. Is it possible to predict his or her effectiveness? When asked, most managers suggest that number 28 is either a low-performing individual or a new employee. Yet, if this person were an independent contributor (e.g., a great bench scientist), then he or she could in fact be among the most important members of the network. The point here is that the effectiveness of different social locations or network structures cannot be predicted without information about the nature of the task and associated work processes. In this setting, number 28 was not an independent contributor but a member of a project team (along with 82, 20, and 3) that was supposed to be highly interdependent with other teams in the lab. Given this information, it becomes clear that number 28 was indeed a poor performer, and his team was the lowest performing team in the laboratory. The communication networks were not congruent with the task requirements.

It is more difficult to gather reliable data on organizational culture than on the other organizational building blocks, but necessary nonetheless. Our experience indicates that while a single individual may not be good at gathering reliable data on informal dynamics, when several individuals are brought together to discuss norms, values, networks, informal roles and power, a reliable picture of an organization’s informal organization quickly emerges. Note that the diagnosis of the informal organization need not be 100 percent accurate—it only needs to be more informed than a particular manager’s existing understanding of the informal organization. Over time, through action
and learning from the unit’s response to those actions, managers can update their understanding of their unit’s informal organization.

- **Describe the culture of your organization.** What are your unit’s norms and values? What are the informal communication networks like in your unit and between your unit and outside areas? Who are the informally powerful individuals in your unit and in the larger organization? Where are you located in your unit’s informal communication network?

- **To what extent does your culture and informal organization facilitate task accomplishment?** To what extent are your unit’s norms, values, informal communication networks, and informal power consistent with task demands?

Critical tasks and work flows, people, the formal organization, and culture are the four building blocks whose interactions drive organizational performance. While each is important in shaping performance, there are significant differences in how most managers approach them. In the model shown in Figure 4.1, the vertical axis, defined by critical tasks and work flows and the formal organization, represents the formal control system, the organization’s hardware. The horizontal axis, consisting of people and culture, represents the social control system, the organization’s software. Almost all managers learn to use the formal control axis effectively. They understand and can apply the techniques of reengineering, restructuring, and performance-based compensation. Most managers are, however, far less comfortable and adept at using the social control system, perceiving issues of psychology and culture as less precise and harder to manage. Yet, largely because of this lack of attention, it is the social control system that may hold the key to the effective management of innovation and change. We now turn to diagnosing and shaping culture and social control.
Chapter 4

2. See also other approaches to the notion of fit or congruence, including Davis and Lawrence, 1977; Galbraith, 1973; Gresov, 1989; Miles and Snow, 1994; Miller, 1993 and 1986; and Peters and Waterman, 1983.
4. This mode of problem solving is consistent with the work on TQM and organizational learning. See, for example, Cohen and Sproul, 1996; Huber, 1991; Kano, 1993; Kolesar, 1993; Levitt and March, 1988; Nonaka, 1993; Senge, 1990; and Walton, 1986.
5. See also Argyris and Schon, 1978; and Weick, 1979.
6. Describing tasks and associated work processes is also the initial step in any reengineering, information technology, or TQM effort. See Ettlie and Reza, 1992; Hammer and Champy, 1993; and Lucas, 1996.
15. See Ancona, 1990; Jackson, 1992; O'Reilly, Caldwell, and Barnett, 1989; O'Reilly, Snyder, and Booth, 1993; Virany, Tushman, and Romanelli, 1992; and Wiersema and Bantel, 1992.
18. This section builds on Nadler and Tushman, 1988, forthcoming.
21. See also Bartlett and Ghoshal, 1989; Davis and Lawrence, 1977; Galbraith, 1973; Lorenzoni and Baden-Fuller, 1995; Nadler, Gerstein, and Shaw, 1992; Nohria and Eccles, 1992; and Quinn, 1992.
23. See Kerr, 1995; Lucas, 1996; and O'Reilly and Weitz, 1980.
25. There is a large literature on informal organization and culture upon which we build. See, for example, Kotter and Heskett, 1992; O'Reilly and Chatman, 1996; and Schein, 1996.
27. See Collins and Porras, 1994; and Tichy and Sherman, 1993.