

Chapter 4 we will cover the group-to-group interface, again using the differentiation-and-integration conceptual scheme. Here we will put more emphasis on how we use these tools, not only in diagnosis and action-planning but also in implementation. Chapter 5 will deal with the individual-organization interface. We shall introduce in more detail the concepts we utilize to work on issues at this interface, and shall also illustrate how they are helpful not only in diagnosis but also in planning and implementing change. The final chapter draws these three themes together and relates our approach in organization-development work to several larger societal issues.

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ORGANIZATION-ENVIRONMENT INTERFACE

It is no mystery that organizations must carry on transactions with their environment simply to survive, and, even more importantly, to grow. In the first chapter, we identified the quality of these transactions as posing one of the fundamental developmental problems of any organization. Other analysts of organizational affairs have consistently mentioned transactions with the environment as a crucial if not the most crucial issue. It is an issue that has been dealt with extensively by economists and by specialists in business policy and strategy. They have dealt primarily with the content of these relationships—the actual kind and amount of goods, services, and funds that are part of these transactions. But the issue has not been extensively studied by specialists in the application of behavioral sciences, and attention has not been focused on such human aspects affecting the quality of these transactions as: What is the quality of the information exchanged across the organizational boundaries? What are the major determinants of the quality? What are its consequences?¹ Such questions have been asked many times of the relations between individuals and groups within the organization, but the boundary-spanning relations have simply not been subjected to comparable scrutiny. It is not surprising therefore, that systematic efforts to diagnose and improve the quality of these organization-environment relations have also lagged behind the effort applied to improving internal relations. It is worth speculating about the reasons for this lack of attention.

¹ One notable exception has been the work on boundary transactions reported in *Organizational Stress*, Kahn *et al.* (New-York: John Wiley and Sons, 1964).

Perhaps the focus has been placed on internal transactions because both parties to a faulty relation, being within the institution, tend to bring their troubles to a single source—their shared superior up the chain of command. This focuses attention on the costs of unsatisfactory work relations and triggers corrective action. There is less likelihood that this will happen in connection with boundary transactions. It is, moreover, not so easy to collect information about the status of the boundary-spanning relation since the outside participants may feel no obligation to cooperate. The relative neglect may also be due to the traditional division of labor between academic disciplines. It may be automatically assumed that economists are the experts on boundary transactions while the psychologist and the sociologist are expected to confine their efforts to internal relations. Even within business schools, it is traditional for the functional specialties, such as marketing and finance, to have exclusive concern with the quality of salesman-customer and treasurer-banker relationships. Only recently have such specialists drawn on behavioral disciplines to aid them in the study of these matters.

The authors themselves became involved in the study and improvement of relations at this interface by approaching the topic through the back door. We had been concerned for some years with the quality of intergroup relations in organizations. This interest led us to the observation that major groups in industry displayed some distinctive characteristics that persisted in spite of efforts from top management toward consistency. We came to the conclusion that this persistence could be accounted for if these groups needed these characteristics to conduct favorable transactions with the segment of the firm's environment with which they were especially involved. So, in order to account for some important sources of intergroup conflict, we began to study each group's relations with its special segment of the environment. Our research findings tended strongly to confirm our theory. This, in turn, led us into a new interest not only in understanding these transactions from a behavioral standpoint, but also in helping organizations and their managers diagnose the quality of these relations and improve them.

THE CERTAINTY-UNCERTAINTY CONTINUUM

Our research findings with specific relevance to this interface can be quickly summarized since they were generally reviewed in Chapter 2. We started our inquiry with the simple notion that the characteristics of an

organizational unit would in some way need to match up with those of its segment of the environment if healthy transactional relations were to prevail. We were particularly interested in information flows across these boundaries. It seemed to us that if the sector of the environment involved was in a fairly steady, unchanging state, the amount and complexity of the information needed would be much less than if the opposite were true—namely, if there existed a high degree of uncertainty and change in the relevant part of the environment. As the environment varies along this certainty-uncertainty continuum, we expected to find matching differences in the organizational unit concerned if the transactions were to be sound. We identified four measurable features of groups that we thought might vary with the certainty-uncertainty of their parts of the environment. These were:

1. the degree of reliance on formalized rules and formal communication channels within the unit;
2. the time horizon of managers and professionals in the groups;
3. their orientation toward goals, either diffuse or concentrated; and
4. their interpersonal style, either relationship- or task-oriented.

Using measures of these four characteristics, we made a study of high- and low-performing companies in three different industries, and arrived at the specific conclusion that there was a closer fit in the high-performing organizations than in the low performers between the attributes of each unit and the demands of its relevant part of the environment.²

One way to visualize the meaning of these findings is to think again in terms of information flows. In order to relate effectively to its environment, any organization must have reasonably accurate and timely information about the environment and especially about environmental changes. This is clearly an easier job if the environment is relatively stable. The job can be specified in a predetermined set of operating rules. The necessary messages can be handled through the traditional superior-subordinate channels, which may be few and constricted but are probably less subject to error and relatively inexpensive. Fairly short time horizons are usually adequate to take account of the reactions of such an environment to the firm's actions. This makes it sensible to use a straightforward, task-oriented approach in managerial style.

2 Lawrence and Lorsch, *Op. cit.*

On the other hand, life in an organizational unit must become more complex in order to deal adequately with an uncertain and rapidly changing sector of the environment. To have more points of contact with the environment, a flatter organization is employed. Formal rules cannot be formulated that will be suitable for any appreciable time period, so it seems better not to rely heavily on them. More of an all-to-all communications pattern is indicated, which can keep environmental clues moving throughout the unit for interpretation at all points instead of just through superior-subordinate channels. A longer time orientation is usually needed. The growth of this necessarily more complex and sophisticated (as well as more costly) communication network is fostered by an interpersonal style that emphasizes building strong relationships rather than just accomplishing the task, *per se*.

STABILITY VS. CHANGE IN THE ENVIRONMENT

Securing and processing relevant information from the environment, while highly critical, is not the only requirement for high-quality transactions at the organization-environment interface. In addition to exchanging information, people at these interfaces must frequently negotiate the terms of exchange of tangible goods and less tangible services of many kinds. These bargaining and/or problem-solving kinds of relationships can also be analyzed in terms of the findings of research. Fouraker has used his findings from experimental research to develop the idea that organizational units with different internal features are more or less effective depending upon whether their environment is characterized by harsh competition for scarce resources or by more beneficent circumstances.³ In a relatively unchanging environment, it is likely that time has brought more competitors into the struggle and that therefore resources are scarce. In this circumstance, he argues that the organizations which can conduct more favorable transactions will operate with tighter internal controls, more rules, and simpler channels of communication. In short, they will have closed ranks and geared up for a competitive fight. Again, it is a matching process.

At the other extreme is an organization unit dealing with a rapidly changing environment. The resources are plentiful and diverse, but the organization must be capable of creative and flexible problem-solving to

3 L. E. Fouraker, unpublished manuscript.

discover potential opportunities for conducting more favorable transactions. Here again that unit will thrive which relies not on rules but on a more complex and flatter communication network which serves to stimulate new ideas. Such a unit would be oriented to a longer time perspective. It would thus be matched with the features of its environment as it works at solving the problem of defining and continually redefining the terms of its environmental transactions.

These, then, are the highlights of current research on the matching of organizational units with their respective sectors of the environment. Good matching seems to foster sound transactions at this organization-environment interface. In our research we studied this interface only for the important functions of sales, research, and production; but Fig. 4 indicates how many additional interfaces of this type are relevant to most business organizations. Similar lists could be drawn for other types of organizations.

<i>Organizational Unit</i>	<i>Relevant Environmental Sector</i>
Sales	Customers and competitors
Research	Science and technology
Production and engineering	Technology and equipment suppliers
Purchasing	Suppliers
Finance	Financial institutions
Personnel	Labor and professional markets
Public relations	The press and legislative bodies
Legal	Governmental regulatory agencies

Figure 4

One of the ways of evolving an overall strategy for any organization is to develop within the organization the capacity to carry on fully adequate transactions at each of these important interfaces, with some special advantages in regard to one or two of them where a favorable exchange is possible. These are areas of "distinctive competence," to use Selznik's term.⁴ An organization in which each of its boundary-spanning units is

4 P. Selznik, *Leadership Administration* (Chicago: Row Peterson, 1957), p. 8-42.

well matched with its corresponding environmental sector is in a desirable position to detect opportunities for new kinds of favorable transactions with the environment and to anticipate newly developing hazards in the environment. This matching process is a highly flexible way to maintain the kind of continuous search that is recommended by a pioneering study recently conducted by Aguilar on how business firms scan their relevant environments.⁵

As the relevant environment changes, however, organizations not only need suitable matched units, but on occasion also need to establish new units to address newly emerging environmental facts and to regroup old units. For instance, the emergence of the computer as a new environmental fact has led many firms to create a new unit such as management-information services; and the development of newly relevant mathematical techniques has led to the emergence of operations-research groups and long-range planning groups. Such new groups not only draw together people with different technical skills, but also they often need different orientations, structures, and styles to transact their business successfully.

In addition, as firms grow in terms of product variety and geographical coverage, a need frequently arises to switch the first big structural division of work in the company from the traditional functional basis, implicit in our discussion so far, to some other basis. Valid arguments can be mustered for various choices of first-level structural division, but the soundest arguments will be based on environmental facts. For instance, if different geographical areas require quite different ways of marketing, while the products of a firm are quite similar technically, a first-level split *by geography* is usually indicated, and vice versa. If, on the other hand, the products and the geographical conditions are relatively homogeneous, an initial division *by function* is probably the soundest basis.

This analysis of differences and similarities needs to be complemented by an analysis of the intensity of the interdependencies between various units to find the best possible trade-off. Once the primary basis for structurally dividing work is selected, secondary means can be provided not only at lower levels but also by staff groups. In some instances where two factors, such as functions and products, are both highly different and critical, some firms, as in the aerospace industry, are turning to a matrix

5 F. J. Aguilar, *Scanning the Business Environment* (New York: The Macmillan Co., 1967).

organization. In such an organization two bases are used simultaneously as a first-level division of labor.

We have seen that whether we view the environmental transaction primarily as a problem of information exchange or as one of bargaining and problem-solving, we are pointed toward a matching of organizational traits and orientations with environmental features. We are now in a position to explain how we use this method of analysis as a practical tool in helping specific organizations improve the quality of their environmental transactions. We will do this by examining several specific cases.

The first set of cases involves situations where mismatches could be directly addressed by making adjustments in the internal arrangements of the unit concerned. A second set of cases will also be examined where other types of adjustments were needed to improve the matching process:

1. by releasing counterpressures in the organization for consistency among all units;
2. by adjusting units to accommodate shifts in the environment;
3. by creating new units to meet newly important environmental conditions; and
4. by realigning units to cope with the increased scope of the business.

In reviewing these cases emphasis will be given to the variety of variables in the organizational systems that were selected as the initial means of implementing planned change.

Before turning to the cases, however, we need to get a feel for the way problems at this interface are likely to first present themselves to managers and in turn to behaviorally-oriented consultants. Problems at the environment-organization interface are likely to manifest themselves eventually through economic results. For example, at the sales-customer interface, it is in a loss of sales volume; in research and development, it is in a drop in the flow of new products, etc. However, these indicators of interface trouble are fairly slow to show up, and managers learn to be sensitive to earlier clues of difficulty. These often take the form of complaints from the outside—letters from customers, a private word dropped at lunch by a banker, an important move by a competitor that caught everyone flatfooted. The customer may be saying that your organization is unresponsive, that you cannot seem to tailor your products to his needs, that he is getting tired of fighting his way through your red tape. In other cases, the concern will develop because a competitor seems

too frequently to be first with a new-product introduction, or a new marketing technique. Perhaps in the production area it is a failure to realize economies through process innovation or falling behind in the race with rising wages and salaries. Another clue might be that the best specialists are not staying in the company—there is a worrisome amount of turnover among the more promising professionals in the physical or managerial sciences. These are the clues that might well be traced back to human problems at the environment-organization interface.

EXAMPLES OF ORGANIZATION-ENVIRONMENT MISMATCHES

Our first case of an organizational development problem at this interface was initially identified by worrisome symptoms of an economic nature. During our research activity in an organization developing, marketing, and manufacturing plastics products, we heard numerous complaints that the basic research laboratory was not turning out new process and product ideas. An analysis of the data we had collected on organizational practices in this laboratory revealed that the laboratory had a highly peaked management hierarchy, with most of the decisions being made exclusively by higher management. This was clearly inconsistent with the uncertainty and complexity of the information with which these scientists were expected to deal. The scientists complained that they did not have enough autonomy to follow research leads which seemed highly important to them. As one lower-level research administrator put it:

When one project gets killed, we get another one. This is a sore point with me because we aren't given a chance to look around ourselves for new projects. We are given a project and told to work on it. My objection is that we don't give the group leader and the bench chemist the time to investigate different problems before they are being thrust into a [management-defined] program. . . .

This high degree of formalized decision-making made it difficult for these scientists to carry on meaningful transactions with the dynamic environment confronting them. It was difficult for them to freely respond to new information from the scientific environment. In addition, they had neither the authority to make decisions about research activities nor direct access to persons with market information, which could have enabled them to make effective decisions. In addition to constraining and confusing the flow of environmental information into this unit, this inappropriate

structure undoubtedly also affected the motivation of these scientists. We will develop this theme in some detail in the fifth chapter.

The remedy for this sort of problem is not hard to see. Find ways of getting lower-level scientists and managers more involved in decision-making, and in general loosen up the structure. While we were involved only as researchers, and thus were not expected to propose such actions, it is interesting to note that individual laboratory members were already finding ways out of these constraints. As one research manager put it:

The individual chemist can initiate a program to a greater degree than the research manager would like to believe. It isn't always possible to get the control [the managers want] because what's going on in a certain project is always linked somewhat to the influence of the man who is working on it.

This kind of *sub rosa* response probably improves matters to some extent, but it is suboptimal as compared with forthright mutual decision-making between junior and senior people.

A more complicated problem at the organization-environment interface is illustrated by a situation which one of the authors encountered in his consulting activities. The organization in question was a unit of a major chemical company which had as its assigned mission the development, manufacture, and marketing of entirely new and unique products which did not fall within the realm of existing product divisions. Once this division, which we shall label the New Products Division (NPD), had demonstrated that a product was commercially successful, the product was transferred to an existing division, or a new division was established for it. The NPD thus dealt with products for only a limited time and during the most uncertain phase of their existence, when both markets and technology were ill-defined. In sum, the parts of the environment confronting this organization were highly uncertain.

The NPD had sales, development, and research units and drew upon various manufacturing facilities within the company, depending upon the nature of the particular product. The division general manager was aware of what he considered to be an unhealthy amount of conflict among all of these functional units, but particularly between sales and development. As a result, he asked that we help him define the nature and causes of these conflicts and then help him develop solutions to these problems. Accordingly, a diagnostic study was undertaken.

The study confirmed that the organization was achieving relatively poor integration between the functional units, and that certain conflict-

management practices were not as effective as they might be. But, central to the issues we are considering here, the diagnosis also revealed that the differentiation within the organization was not in tune with its environmental demands. While the research and the development units both had structure and member orientations that were consistent with their task requirements, the sales unit did not. Whereas members of the sales unit needed to have a relatively short-term time orientation and a strong marketing-goal orientation, they actually had a long-term time horizon and were oriented toward a balance of technical and market goals. In fact, along these two dimensions, the sales unit was almost identical to the development unit. What seemed to be happening was that the two units were trying to perform the same task, and, in essence, were competing with each other for control of this task. This competition was one important source of the poor integration and unresolved conflict about which the general manager was concerned.⁶

The reason that the sales unit had drifted into the sphere of the development group was not difficult to explain. At the time of our involvement, the NPD had not yet brought many products to the stage where an active test marketing program was required. As a result, the kind of information with which the managers in the sales unit were accustomed to dealing just did not exist. However, these managers wanted something to do so they began taking a longer-range look at potential markets. As a consequence, they were dealing with information which was the legitimate concern of developmental personnel. This threatened the position of the latter group and hostility developed between the groups, making it difficult for them to cooperate.

With this data and this explanation in hand, we made a feedback presentation to the general manager and his chief subordinates. The data and their implications were accepted without too much difficulty by the general manager, the research manager, and even the development manager. The reader will recognize that poor integration with low differentiation is contrary to the basic antagonism between these two states, which was described in Chapter 1. Although this is the only case of such low differentiation the authors have found and it is therefore dangerous to generalize, it does suggest that the inverse relationship between differentiation and integration may not be a straight line. Instead, it may be curvilinear, with both high and low differentiation being associated with poor integration. High differentiation leads to problems of communication between units and makes integration difficult to achieve. Extremely low differentiation means the units have begun to deal with the same parts of the environment and are basically in competition.

manager. The sales manager, however, showed a great deal of resistance to this interpretation. The chief reason for this was that accepting this interpretation brought into serious question the role of his unit in the organization for the immediate future. He had brought together a group of five experienced sales managers, and had gotten them involved in identifying market opportunities, since there was very little to be done in marketing with the few new products already available. Accepting our interpretation meant either finding a more appropriate activity for these managers, which was not possible without something to sell, or having them reassigned to another division. The latter obviously would involve a loss of face for the sales manager.

Because of this resistance from the sales manager, several sessions of this management group were held with and without the consultant present. Ultimately, even though some limited progress was made in working through this problem, the general manager concluded that the most viable solution, given the bind in which the sales manager was caught, was to have him reassigned to another job of equal status and responsibility. This was accomplished and his replacement reduced the size of the sales unit and limited its activity to dealing with more immediate market issues. As a result, much of the tension between the marketing and development groups was relieved. With each unit having orientations fitting the information requirements of its task, the organization seemed to function more effectively.

As a final brief example of a rather unusual form of mismatching at the environment-organization interface, we cite a particular unit of a large electronics manufacturing firm which was charged with doing research, development, and manufacturing of some esoteric types of semiconductor devices. It put a heavy emphasis on participatory management, with an extensive use of product teams for decision purposes. There was also careful planning of physical arrangements so as to facilitate necessary interactions between groups. Management officials hoped to secure high involvement from all levels and a working climate that induced creative work. In many ways their experiment succeeded, but they were troubled by serious complaints from many of the specialized engineering and technical people who held critical positions. The comments below from some of these people indicate the nature of their concerns:

In a way, the [unit] is not a satisfying place for the [technical] professional. You seem to have to go through a lot of red tape and coordination to get something technical done.

The technical guy is principally interested in technical things and the business team in economic problems. There's a certain type of research-oriented person who would be completely frustrated in the team. He's not interested in business or human relations unless they have a direct bearing on what he's doing.

I'm basically a scientist. Scientists are individualists and you appreciate freedom in your thoughts and action. And this basically goes across the grain of the business team.

The complaints stand in sharp contrast to the highly favorable responses of almost all of the nontechnical personnel. This contrast became apparent to one of the authors in the course of research in preparing a teaching case. The senior officials of the unit, upon seeing the pattern, concluded that the heavy emphasis being placed on securing integration through the use of group methods had not allowed the technical people enough of an opportunity to differentiate their role and orientation. A careful internal study was made of the issue, and a modification of the group procedures was adopted. This seemed to correct the situation. In essence, the engineering personnel were freed from involvement in business activity, and an integrator was provided to link them to these activities. Thus technical personnel were freer to develop orientations related to their major task.

OTHER VARIETIES OF ORGANIZATION-ENVIRONMENT PROBLEMS

Not all of the issues involving transactions between the environment and organizational units appear as the kind of mismatch situations that can be directly addressed in the manner we have been reviewing. The examples presented below indicate the range and variety of other problems that can now be more systematically analyzed at this interface and moved through the entire development cycle on a more predictable basis.

The first example involves the relation between headquarters and field units and the impact these had on environmental transactions. One of the authors had the opportunity to take part in the efforts of a large "heavy industry" firm to make adjustments in their geographically dispersed production units that would improve the match with their respective environments. This issue had been addressed under a number of

different headings in this company and in a number of ways, but the key issue had remained the same. At one time or another, it had been called a line-staff problem, a headquarters-field problem, and a centralization-vs.-decentralization problem. In a variety of ways, the company had been working repeatedly through the diagnosis, planning, action, and evaluation cycle of change. The trend over several years had been away from an earlier insistence on company-wide consistency and toward greater local autonomy in order to foster better matching with environmental conditions. It is revealing to review the history of these change efforts and, in particular, a recent major educational intervention.

This company had gone through an earlier period of rapid expansion as it exploited an advantage it enjoyed in securing one of its basic raw materials at a significantly lower cost than its competitors. During this period, it was not crucial that each and every one of its major plants be optimally matched with its respective local environmental conditions. But as the company gradually lost its original unique advantage, these matching issues became important. However, a tradition had become well established that the various aspects of the business were largely controlled from headquarters, with each central functional department dominating its respective affairs throughout the organization. For instance, the central engineering group had the dominant voice not only in new construction but also in new-equipment decisions and production-process modifications. The same largely held for other functions such as accounting, purchasing, quality-control, transportation, and personnel. This affected a set of widely scattered plants that roughly did one of two types of work—basic bulk manufacturing or secondary fabrication work. The managers in these outlying locations began to perceive that many opportunities for performance improvement in their local environments were being lost because of the demand for consistency from the center.

With this issue as one of its principal objectives, the company decided to undertake an extensive educational program. A considerable number of managers were sponsored in attending sensitivity-training sessions. This was later followed up by conducting "family" work-planning conferences of three or four days' duration for members of a managerial group. A few laboratory-training sessions were organized on an intergroup basis that brought together such pairs of groups as managers at headquarters from some one function with managers from a major plant concerned with the same functional specialty. At about this time, the company decided to make a formal structural separation of the management of the basic material plants from the management of the fabricating units. A major

reason for the decision was that the fabricating plants were in need of a shorter-term and more market-oriented management in contrast to the longer-term and cost-oriented management customary in the basic plants. The structural step was designed to foster the needed differentiation, but it was initially not well understood by middle management.

At this point, one of the authors became involved in the further planning and implementing of this company's push toward fitting its units with environmental requisites. A small planning group of senior company managers and outside consultants undertook to further diagnose the company situation. In spite of progress being made by earlier change efforts, this top group was not satisfied with the quality of the intergroup relations and the responsiveness of major units to changes in the environment. When this planning group found they were in agreement in their size-up of the situation, they decided to proceed with a major additional educational effort rather than undertaking a more systematic diagnostic study. Plans were developed for bringing together the general managers of all the major plants and the heads of all the headquarters departments in a training design that called for three one-week sessions spaced three to four months apart. The theme of the sessions was the managing of corporate change.

The training group, when assembled, decided to focus its efforts on assessing environmental changes and identifying shared company problems. Two issues emerged as being of paramount importance. One was the repercussions in the company of the recent structural separation of the basic and fabricating units. This change was seen as threatening the sense of overall unity in the company or what might be called "the one big family" feeling. This change needed to be assimilated on both a cognitive and an emotional basis. At the cognitive level, the participants were exposed to the logic of the move in terms of environmental demands and the concepts of differentiation and integration. The representatives of the various units then described to the total group the typical problems and issues they faced in their respective environments. Striking differences became apparent that they had not fully appreciated before.⁷ As these realities were clarified, the structural split met with more emotional acceptance without the loss of mutual respect.

7 An associated program, conducting an exchange of plant visitations by contrasting pairs during the interval between sessions, served to reinforce these perceptions of differences and the necessity for them.

The second major issue that emerged was the relation between the headquarters departments and the basic manufacturing plants. The central departments felt under pressure to permit more of their functions to be performed under plant control. They were becoming very uncomfortable with this trend, and tended to ascribe it simply to a fad for decentralization. Meanwhile the plant people were still feeling unnecessarily constricted by the rules and regulations of at least some of the central units. Once again, these issues were directly faced both by examining in detail their specifics on a function-by-function basis and by drawing on the general concept of differentiation and integration to provide a framework for systematic thinking. The net effect of these sessions was to see:

1. the very real business need for further relaxation of some of the rules designed to enforce consistency;
2. the need for a careful sorting of functions between the center and the plants in terms of the locus of relevant skills and pertinent information; and
3. the need for more open communication channels for the continuing adjustment of mutual problems between the center and the field.

The thrust was toward greater differentiation without losing integration; and, of course, the greater differentiation was designed to further the matching of the outlying units with their changing environmental circumstances.

At the end of the third residential session, the participants undertook to do their own evaluation of the program. Some of the program values they emphasized as having been realized were: "design of work procedures for examining and defining service unit role," "construction of a cross-company network of good will, communication, and trust for future problem-solving," and "greater insight into company's overall operations and problems." In addition, they arranged to have their group act as a resource panel to work on the detailed review of the division of work between headquarters and the field plants on a function-by-function basis.

This program *in toto* can be characterized as emphasizing an educational type of intervention to improve the matching at the environmental-organizational interface. In effect, it approached the problem obliquely by releasing the constraining pressures from the headquarters departments rather than by driving directly toward the matching of environmental demands with unit characteristics. When the problem is de-

defined as seeking a change in a field of forces, as suggested by Kurt Lewin, this emphasis on relaxing a constraining force can be fully as effective as a more direct approach. This theoretical conclusion is supported by the available facts in this instance. This case also put an emphasis on education as the major lever of change, with only a sketchy use of systematic diagnosis. Much of the diagnosis was done by drawing from the perceptions of the managers during the early part of the training sessions. This method tended to increase the sense of involvement by these men, but at some cost in the specificity of the diagnosis. It should also not be ignored that one important part of the change was the structural shift of formally splitting the basic and fabricating units. In our judgment, this formal differentiation was needed to better match the environmental requirements, but the education effort was also needed to assimilate this change.

To turn to another case, the authors have been involved over a period of several years in working with a major company in the consumer packaged-food industry, which faced a major problem in realigning itself with its market environment. This company had been highly successful in conducting a decentralized business, with geographically dispersed sales units performing the final packaging and marketing functions. The market environment had been relatively stable for more than a generation. Few changes were needed in product or marketing methods to build upon an earlier innovative period. As a result, the outlying units had evolved some highly detailed routines for handling the products.

In recent years, this market environment had become much more turbulent. New products and packages were being sought by customers. New sales outlets were coming into being. The company had, of course, been responding to these changes, but rather sluggishly, and seldom as the innovator. The field units that performed so well under stable conditions were faced with an environment where change was becoming a steady pattern rather than an occasional event. Some more fundamental changes in the units were needed to secure responses that went beyond firefighting and counterpunching.

As this diagnosis emerged, the company undertook a major and continuing educational program directed toward these decentralized units. The program has addressed various topics but with a consistent method. The method has been to expose the managers concerned to the facts of relevant environmental change around a given topic and then to push them into struggling with the implications of these changes for their own organizations. There has been a heavy reliance on the use of teaching cases

as materials for discussion and analysis. Different aspects of the business were reviewed in this manner. The managers have not been told how to respond but have been helped to develop more appropriate problem-solving methods.

As this effort has proceeded, there has been a clearly noticeable change in the behavior of these managers. They consistently testify to the improvement of their general ability to tackle new problems. Their enhanced sense of competence has made them willing to search their environments more thoroughly for early signs of opportunities or threats. The speed of response of their organizations seems to have improved considerably. In short, they are on the road to learning to exist successfully in a more dynamic environment.

The final two examples involve situations where formal structural change was the key element in the change process. In the first situation the R & D units of a large petrochemical organization were diagnosed as having become so heavily development-oriented that long-term basic research was relatively neglected. The company decided to create an essentially new unit that would be carefully tailored to perform the desired research job. In this situation, the authors were asked to provide assistance in the analysis of the relevant scientific environment in order to specify roughly how the new unit should be organized to improve the probabilities of success at this organization-environment interface. This included consideration of recruitment criteria, formal structure, internal departmental procedures, physical layout, and communication linkages with other company units. It is much too early to assess results in this instance, but it is clear that the managers involved have already achieved a much clearer sense of where they are going and how they are going to get there than is the usual pattern. They have been able to obtain a higher level of agreement on the specific points of their organization plan and on its overall integrity.

In another quite different application a general manager in a consumer-goods field was being pressed by his superior to restructure his major division from a functional basis of first-order differentiation to a product basis. The manager agreed with the argument that the rapid state of proliferation of new products in his unit would eventually warrant such a reorganization. The question was, when? He felt that the recent success of his unit stemmed principally from a highly creative development group that not only worked together effectively as a total group, but had also managed to develop some fairly strong working links with both the marketing and manufacturing units. He feared that a premature reorganiza-

tion would disrupt this innovative combination. A procedure was developed by which he could secure periodic readings on his organization to improve the timing of the inevitable reorganization. In effect, differentiation and integration measurements were devised to answer the following question: When would the loss of effectiveness because of the simultaneous handling of multiple products exceed the gain of keeping a close interchange going between all the development specialists? This application indicated that more substantive data can be a useful guide on this kind of complex timing issue.

CONCLUSION

The examples cited above all present some variant of an organization-environment interface problem. Taken together, they illustrate the considerable range of practical issues that are becoming amenable to more systematic study and action, using concepts and methods adapted from the behavioral sciences. In these situations, it has not always been appropriate or possible to put equal emphasis on all phases of the change cycle. Flexibility is needed; for instance, the diagnostic phase varied from highly specific and quantified work to more qualitative studies based upon the shared observations of managers.

We should particularly note that the goals of change have been sought in these cases by using a wide variety of methods. Specifically designed educational programs have been employed that used various pedagogical techniques. Shifts in the formal structure have been employed ranging from major reorganization to shifts in the content of particular roles and their incumbents. The wide range of variables used might suggest a more chaotic rather than a more systematic approach to improvement of organization-environment transactions if it were not for a consistent set of concepts and diagnostic methods that were applied in each case. Clarity of conceptualization has fostered flexibility in the choice of change methods.

The use of behavioral methods to seek improvement in the fit between organizational units and their sectors of the environment is a relatively new field of application. The early steps in this direction which the authors report here are suggestive of a much wider array of possible future applications.

THE GROUP-TO-GROUP INTERFACE

As we have already indicated, if organizations are to deal effectively with their environment they have to be differentiated into groups of individual contributors, each of which manages the transactions with a part of the organization's total environment. The second set of organizational development issues, maintaining and improving relationships at the interfaces among these groups, emerges as a result of this differentiation among organizational units. The objective of organizational development efforts at this interface is to achieve collaboration or integration between these groups of specialized contributors so that they can make a coordinated effort toward total organizational goals, while still working effectively at managing the transactions with their particular segment of the environment.

PRESENTING ISSUES AT THIS INTERFACE

Managers who come to us seeking help in improving the functioning of their organization at this interface complain about a variety of symptoms, but they usually have difficulty identifying the source of the problem. For example, they express concern because the expectations of participants on each side of an interface have developed in such a way that they are playing a win-lose game with each other. They see each group stoutly defending its own position with the belief that to do otherwise would