Understanding Organization Development: A Stream Approach

By JERRY I. PORRAS, JOAN HARKNESS and COELEEN KIEBERT

Organizations, as complex, constantly evolving systems, present a substantial challenge to those who try to understand and improve their performance. It is seldom easy to determine the true nature of organizational phenomena. Consequently, trying to consciously change an organization to improve its effectiveness is difficult and time-consuming. Yet, in today's world, planned improvement of organizational functioning is a constant and necessary task of many executives and managers.

Organization development has evolved as one response to the need for strategies and approaches to planned change. The last two decades have produced numerous perspectives on how to accomplish OD and how organizational change takes place. No widely accepted view exists, however, and few methods for understanding the planned change process currently exist. Nevertheless, OD professionals need to decide which change model to use, what the most appropriate next step might be and how to better understand the effects of past actions to improve the impact of future interventions.

Tools for analysis and planning of change activities are few, but urgently needed. This article describes an approach, "stream analysis," which can be used to understand and plan the change process. During an intervention, it can facilitate clearer insights into the current state of the change process, and after the intervention it can improve understanding of what actually occurred.

The stream approach is based on first identifying the key organizational factors altered by any complex OD intervention. Given the current state of OD technology, the organizational factors typically affected fall into one of four general categories: the organization's structure, technology, human processes and internal physical environment. In other words, any change activity would probably affect one or more of these aspects of the organization. Team building, for example, would primarily affect the human processes of the organization. Introducing a new machine would affect the technology; redesigning the organization's reporting relationships would alter the structure; and constructing a new building would influence the physical environment.

As change technologies evolve, new factors may be affected. When this happens, they can easily be added to the stream framework.

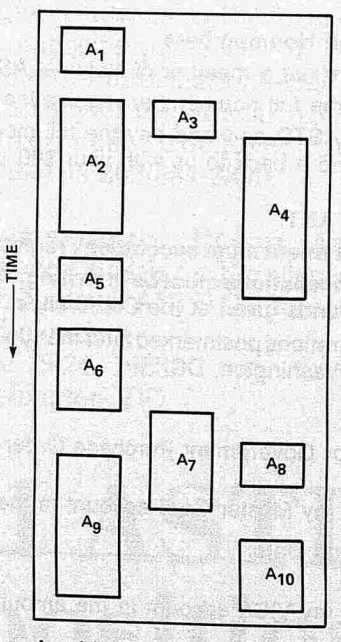
Stream analysis framework

The stream framework stems from the premise that all change activities in an organization development program can be conceptualized as a stream of actions occurring over time. In an OD process, the key dimension is time.

Figure 1 shows an example of how a change program might be represented using this stream notion. In the figure, Activity 1,

FIGURE 1

STREAM REPRESENTATION OF A CHANGE PROCESS



A_n = A UNIQUE INTERVENTION ACTIVITY

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the first intervention activity, would be shown first in the stream. It would be followed by Activities 2, 3 and so on. Note that each activity block is drawn to begin and end at points in time corresponding to the actual beginning and ending of the intervention activity it represents.

Several other characteristics of this representation are important. For example, two different activities might start at the same time (e.g., A_2 and A_3), yet end at different times; one activity might start and continue for a time, with a second activity starting somewhat later and continuing after the first is ended (A_2 and A_4). There may be periods of time when no change activities occur (between A_5 and A_6); several activities may occur at once, each having begun at a different point in time (A_7, A_8 and A_9); and so on. The result of this perspective is a pictorial representation, in correct temporal sequence, of all the activities conducted as part of a complex change program.

Although a useful analogy, this representation is not sufficient because it doesn't significantly add to current methods for understanding OD. By conceptualizing several parallel streams of activities flowing over time, the analysis becomes more complex. In the case of the OD stream, each set of parallel streams may contain all of the change activities directed at altering one of the key change factors described earlier (human process, technology, structure or physical environment).

Figure 2 shows four parallel streams flowing together across time, each containing all the activities aimed at altering one of the key organizational factors. The activities in this figure are the same as in Figure 1, except now they belong to one particular intervention stream or another. By identifying the particular focus of each change activity and placing it in its proper temporal position, we begin to decompose a complex organization development intervention into its main parts and, as a result, gain a better understanding of what happened and when.

Once activities have been organized into streams, a final step is to make the appropriate links between activities. Organization development interventions typically are organic processes in which one activity builds on the results of a previous activity, or in which a specific activity precipitates a need for a follow-on activity.

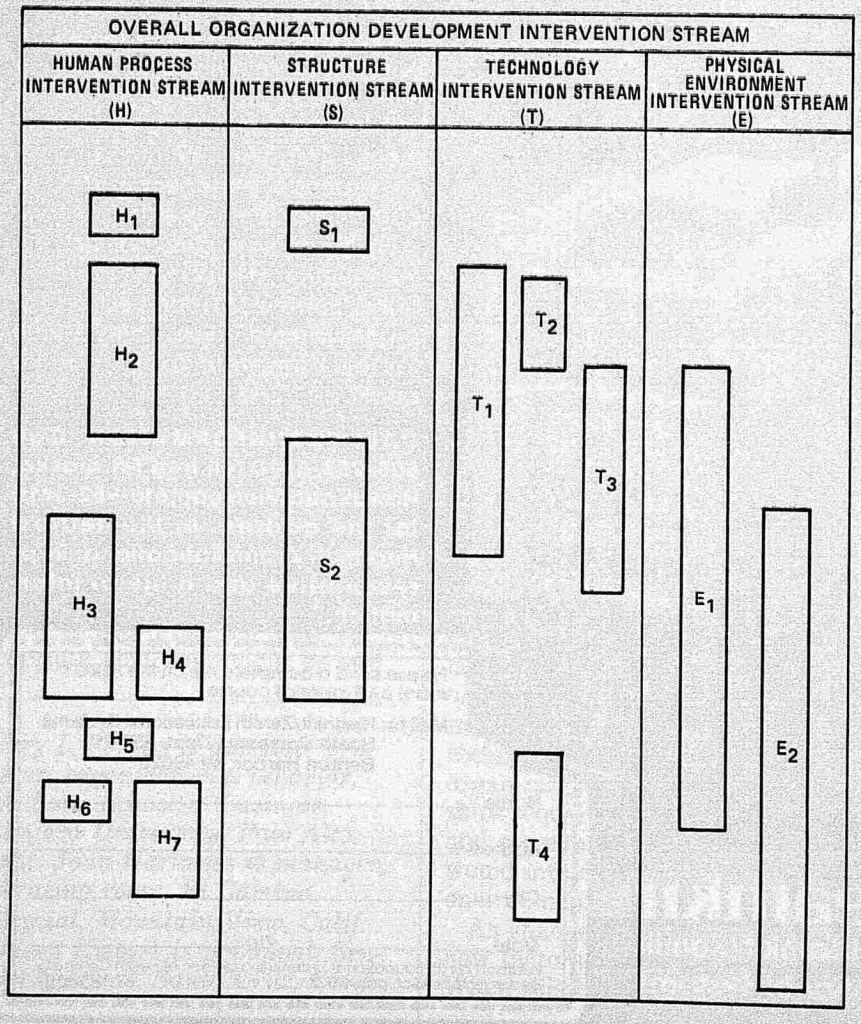
For example, consider a structural change which creates new work teams. This type of change might trigger the need for a human process intervention such as team building or process consultation. Probably neither of these human process interventions would have been necessary without the change in organizational structure. With the formulation of new teams, however, some intervention geared to developing more effective work relationships would probably be appropriate.

Figure 3 shows some possible interconnections between intervention activities in the four different streams. In general, one can follow a single path through the intervention by proceeding down the four streams as indicated by the interconnecting arrows. Occasionally, however, two or more actions may have been precipitated by an intervention in one stream.

For example, action H_2 followed

FIGURE 2

DECOMPOSITION OF AN OD INTERVENTION INTO ITS PRINCIPLE STREAMS OF CHANGE ACTIVITY



S_1, as did T_1 and T_2. In other words, the action taken in S_1 may have required supportive actions (H_2), or may have made consequent actions of T_1 and T_2 feasible. Actions either lead to new actions (i.e., make new actions possible) or facilitate new actions (i.e., make new actions necessary in order to bring the overall system into balance or make it consistent across its four domains). Both of these processes are called triggering actions or triggers.

Conceptualizing a complex organization development intervention as consisting of four parallel streams of action provides a way of looking at change processes. This can be useful not only from the point of view of the professional OD consultant who is attempting to facilitate change, but also for the manager who is trying to keep the organization operating as effectively as possible.

Applying the framework

The stream framework was used to analyze a complex 22-month change project conducted in the operating room of a large suburban community hospital. During the 20 years since its inception, the hospital has grown into a sophisticated medical complex serving a community diverse in age, economic level and race. In recent years, federal and state government regulations had significantly affected hospital operations with increasing demands for cost accountability, altered facilities and equipment standards and regulation of services.

The operating room department (OR) plays a key role in the functioning of the entire hospital, with 60 percent of all hospital patients originally entering for surgery. At the beginning of this research, the OR occupied a space of approximately 13,500 square feet and each day handled 50 patients in 10 operating rooms, with a team of 35 nurses, 20 to 30 doctors and 13 nursing assistants. These 50 patients fell into any of nine different categories of surgical specialty. Since 80 percent of the patients were under general anesthesia during surgery, the OR team assumed complete responsibility for the physical well-being of almost all their patients. The OR team was required to provide rapid, efficient, specialty care for each patient, responding quickly to surgical needs, minimizing the anesthesia time and maintaining sterile techniques.

To maintain a sterile environment, the OR is isolated from the rest of the hospital, but its impact is significant. The scheduling of a surgical procedure puts into motion a succession of activities that encompasses many other hospital departments. The admitting department reserves a bed, the food service schedules a diet, the pharmacy prepares medication, nursing service schedules staffing, housekeeping prepares the bed, laboratory and x-ray provide diagnostic tests, the business office tracks costs and billings and central service, purchasing and engineering provide supplies and equipment.

The OR is reserved for an appropriate amount of time and fitted out for the particular type of surgery scheduled. The proper supplies are then ordered, wrapped, sterilized and gathered together into a "picked case." A head nurse coordinates equipment, sutures, instruments and nurses. An anesthesiologist checks and prepares his or her equipment. Other departments are notified: blood bank; x-ray; recovery room; and/or the intensive care unit. Finally, the patient's name is entered into a daily surgery schedule, which is distributed throughout the hospital. Once surgery is completed and the patient sufficiently recovered, he or she becomes the

responsibility of the hospital staff.

The change process

During the 15 years prior to this study, no significant improvements in the organization or management of the OR department had taken place. Organizational structure and methods of scheduling, billing, supply handling and personnel assignment had not changed substantially.

The change project was preceded by an increasing number of complaints from nurses and physicians about their own interrelationships, as well as the work environment and managerial systems. New technology was continuously introduced into surgical procedures, and physicians were demanding that nurses have expertise in its use. As a consequence, systems for training nurses in new procedures and equipment were critically needed.

To compound the situation, a heavy workload overwhelmed the whole department. Supply management, instrument processing and the physical plant could not deal with growing demands. A shortage of nurses added to the burden of the unhappy and overworked staff.

A first attempt at systematic change occurred with the institution of a planning procedure aimed at expanding the physical facilities of the operating room. An assistant OR director position was created and an external organization development consultant brought in to help identify problem areas and facilitate the actions needed to resolve them.

The consultant's initial diagnostic process led to team-building activities with the management group, improvements in the care and processing of instruments, minor reorganization of the management structure and one-to-one counseling sessions with managers. These activities eventually led to the development and implementation of a new organizational structure.

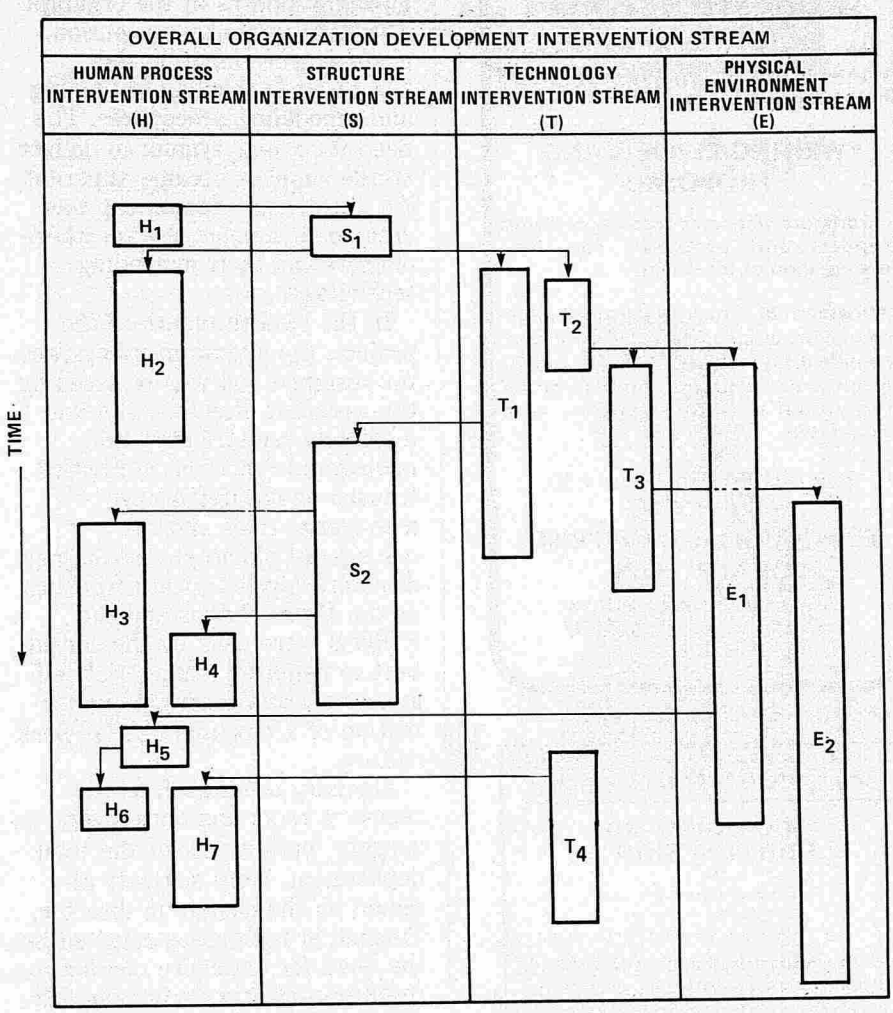
Facilities planning continued, but became more integrated with other parts of the planned change process. Since the plans called for tripling the floor space, it became clear that existing systems for delivery and processing of supplies and equipment were inadequate. Thus, the development of new systems began.

The influx of new surgical technology continued to affect the functioning of the operating room. Fiber optics, nitrogen-driven power tools and laser beam tools were only a few examples of the new equipment demanded by surgeons. Anesthesiologists needed proper equipment to deliver new anesthetic gases. New, sophisticated monitoring devices were introduced. Plans were developed and implemented to care for this new equipment and to train nurses in its use. Because the new equipment required special storage, the remodeling plans were altered.

In the seventh month of the project, further refinement of the organizational structure occurred. Nine surgical specialties were divided into four groups called "pods," with an acting nurse manager heading each one. Each pod included nurses, focused on a group of specialties, who were

FIGURE 3

INTERCONNECTION OF CHANGE ACTIVITIES CONDUCTED IN DIFFERENT INTERVENTION STREAMS



trained to deal with the ever expanding technology of those specialties.

Between the fourth and eleventh months of the organization development intervention, changes were made in the business systems and the billing and scheduling procedures. The need for a new system to deliver sterile supplies became apparent. An anesthesia department was created to support the anesthesiologists and their expanding technology.

In the twelfth month of the project, the operation room director resigned and was replaced by the assistant director, who immediately redistributed the managerial functions. Activities focused on clarifying new managerial roles and the managerial philosophy of the new director. Psychological tests such as the Myers-Briggs and the FIRO-B were used by the consultant to heighten managerial self-awareness and facilitate the formation of a new managerial work culture.

Ancillary areas such as the recovery room and outpatient surgery, both a part of the total department, were severely affected by the change in director. Turmoil in both areas resulted in the need for extensive conflict resolution efforts during the thirteenth month of the project.

Approximately 15 months after the beginning of intervention, renovation of the facilities began. Construction plans called for three phases over a two-year period, during which time the entire operating room suite would be torn down and rebuilt a section at a time.

By the eighteenth month, the pod organizational structure was firmly in place. The scheduling office had partially completed a system to interact with the four pods, and new nursing record forms had been developed to provide a better method for billing. The billing system was also designed to be consistent with the pod organizational structure.

The middle management team was formalized in the eighteenth month, with the promotion of four staff nurses to the head nurse position for each pod. Team building, among head nurses and within pods, further strengthened the organizational structure. For the head nurses, one-to-one counseling and psychological testing again helped develop interpersonal relations skills. Head nurses also participated in training on inventory control, budgeting and staffing.

Although the change project continued past the twenty-second month, for purposes of this research our analysis terminated here. The overall project covered an extensive array of change activities focusing on all four of the organizational factors described earlier.

A stream view

Figure 4 shows the operating room interventions laid out in a stream format. The blocks reflect beginning and end points by their position in relation to the temporal scale on the left axis. The lines connecting activity blocks indicate that any two activities were related in the same manner, either because the first activity made the second one necessary or the first one allowed the second one to occur. Where appropriate, key reasons for the linkage are briefly indicated next to the connecting line. The chart starts the month before the OD consultant entered the system. This is shown as month 0.

Laying out the intervention in this manner gives a more systematic view of the process and when and how activities related. It was developed after the 22-month period it describes, but a stream chart could be laid out before or during a planning process. As a retrospective document, a stream chart lays out the history of an intervention so that it can be analyzed from the perspective of one who wants to learn more about the OD process.

- *Intensity of intervention.* A visual analysis of the stream chart shows that activity within each stream was not constant across the entire time period. For example, during the first

three months of the project, many human process interventions took place and, although the management planning process (H_5) continued until month 8, essentially very little additional human process work was done until months 12 and 13 when H_6, H_7 and H_8 occurred. This was followed by a gap of seven months. The same ebb and flow is true of the structural and technological streams. Overall, therefore, although an OD intervention may appear relatively full of action across time, activity within streams is not constant.

• *Triggers.* The pattern of triggers (i.e., one intervention precipitating another) presents a second interesting insight into the dynamics of this change process. Prior to the beginning of the formal change project (month 0), technological interventions triggered most of the other activities. During months 1-3, human process and structure streams became the most common sources of both activity and triggers. A second phase, in which physical environment and technology dominated, occurred over months 4-6, followed by a third phase (months 7-12) emphasizing structure and human process again. The final phase (months 13-22) predominantly contained actions in the technological and structural streams.

Analysis of this result implies a pattern in which human process and structure interventions cycle in and out of the change process. Pre-intervention concerns primarily in the technological area were followed by human process and structure activity. After a period of time, physical environment and technology began to dominate, but structure and human process returned. Finally, these interventions were no longer necessary, and technology (with some structure) took over as the dominant activity. One would expect, then, that if this cyclical pattern of human process and structure intervention exists, then these two streams would return to dominance after technological change activity had run its course.

This phenomenon might be explained in one of two ways. First, it could be that the human process/structure activities are a precondition for other interventions.

A second way of looking at this pattern is to conceive of human process/structure activities as a process of "putting the world back together again." In this view, the technological and physical environment changes create such a turmoil that in order for the organization to continue operating effectively, it needs to be restabilized.

• *Holes.* A third insight derived from this method of mapping OD processes concerns inaction. We use the term *hole* to indicate those places in the life of the project when things should have been done but weren't. The stream chart provides some interesting examples of holes.

The planning for operating room construction (E_1) did not include input from the employees who would be working in the new environment. This resulted in some oversights in design which did not become apparent until the new facilities were completed and in use. The staff rightfully saw any problems with construction as a managerial or administrative mistake and tended to be more critical than supportive of efforts to deal with any difficulties.

Another hole in the process occurred in the method used to select new managers (S_2 and S_3). The staff was not included in the selection process in any way. Lack of data about managerial candidates resulted in some mismatches between those selected and the job to be done.

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Figure 4
STREAM REPRESENTATION OF AN ORGANIZATION DEVELOPMENT INTERVENTION

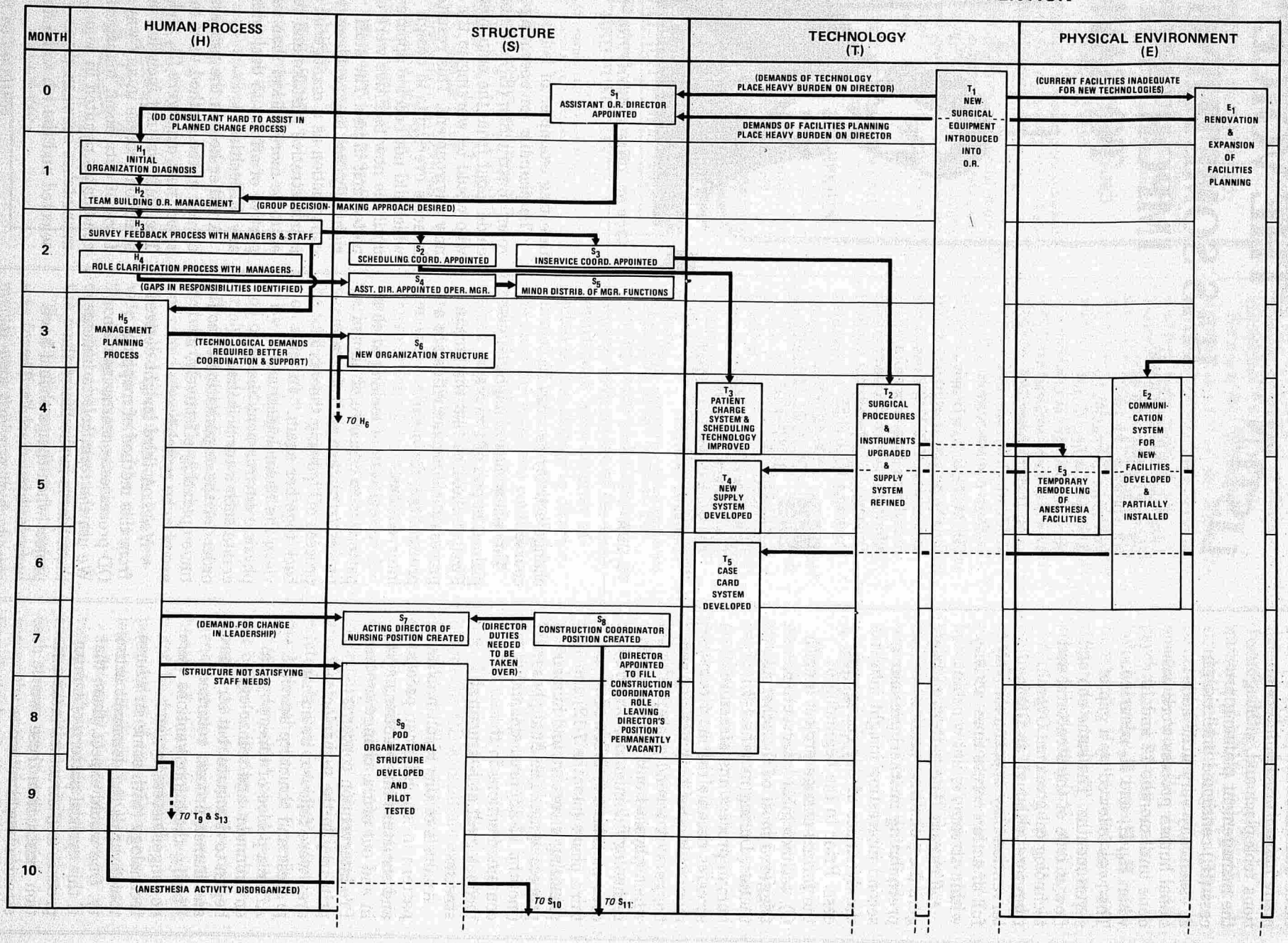
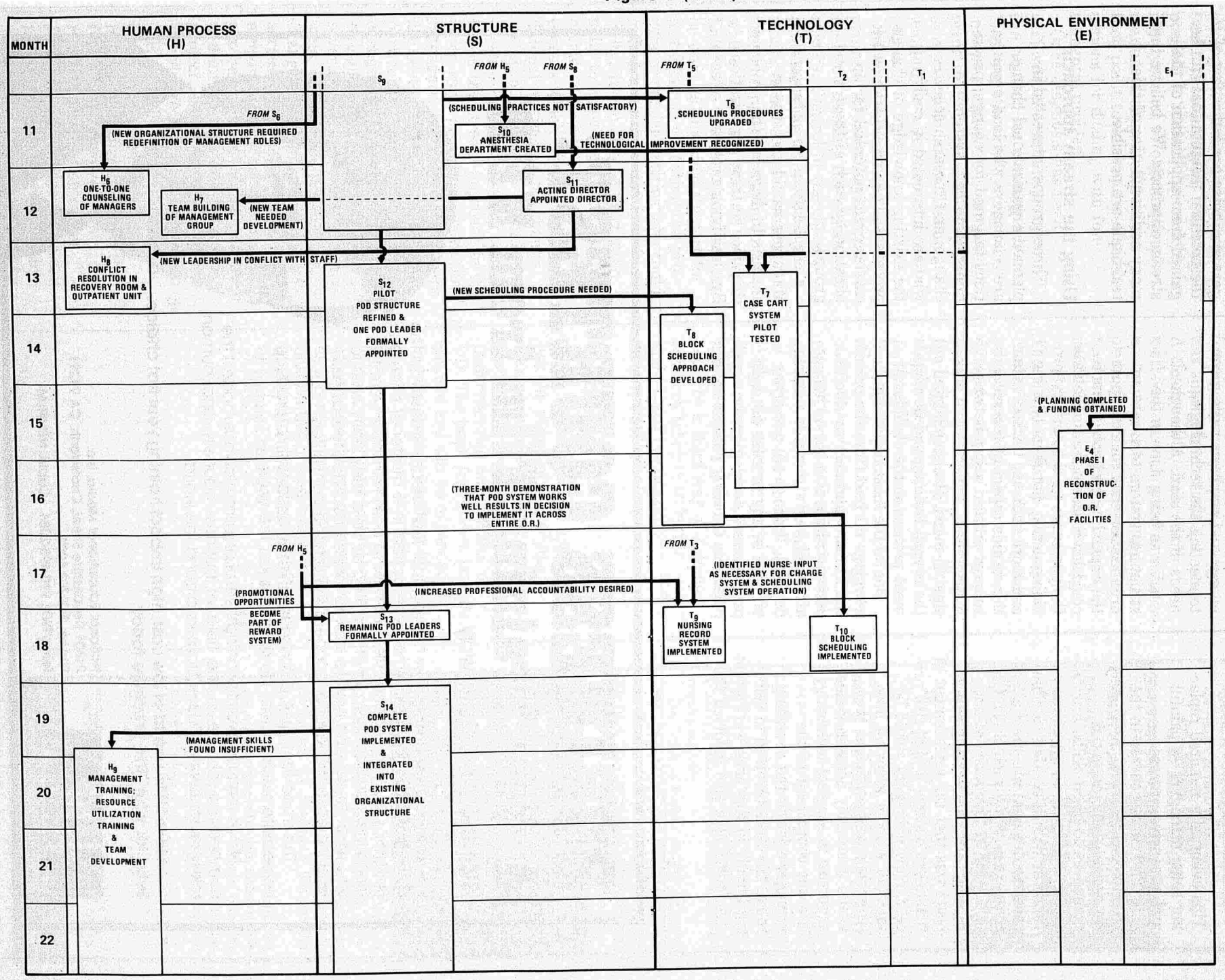


Figure 4 (cont.)



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This eventually required replacing some managers—a painful and expensive process.

A third hole occurred in the technological stream. There was no provision for potential managers to learn skills. Furthermore, there was no organizational structure created to allow them to demonstrate their effectiveness in using such skills. One important consequence of not dealing with this developmental issue was that the replacement of managers became a high-risk process. New managers would be selected without knowing how technologically proficient they would eventually become. Since expertise in surgical technology is a key component of the manager's job in the operating room, the risks involved in selecting blindly in this area were great.

A fourth hole also involved the technological stream. Not enough energy and emphasis were given to meeting the technological needs of the staff. Although much was being done in the structural stream to create an organization that could support the expanding technology, more could have been done to alleviate the pressures on the staff by providing active, hands-on training and more back up. Lack of attention to this aspect of technical support created a gap between management and staff that was slow to mend. It also inhibited the overall training and development process at the staff level.

One of the most important learnings derived from the use of the stream approach was the demonstration that most changes affect all four streams in varying degrees. Retrospective analysis of holes in any process can help practitioners develop greater expertise in avoiding past mistakes.

Intensity of intervention, triggers and holes are but a few of the potential insights that can be gained from application of the stream approach. We believe that many additional uses of this technique are possible.

Using the stream approach

Three groups interested in planned organizational change are: managers who lead organizations targeted for change; practitioners who help systems to change; and research scholars who are interested in codifying the existing knowledge of change processes. The stream framework carries great potential for application by each of these three groups.

- *Applications for managers.* Managers would use stream analysis to diagnose the problems they face in their organizations. By classifying problems in each

of the stream areas, then determining the interconnections between problem areas, it becomes possible to identify the underlying dynamics of organizational malfunctioning. Doing so can then point toward more effective actions for dealing with fundamental problems.

Once diagnosis has been achieved, the stream framework can be used for planning actions. Mapping the existing diagnosis into potential actions can yield plans that are more directly tied to organizational realities and which have a greater chance of success.

Finally, once actions are planned, stream diagrams can be used for tracking the process of change. Control of the change process can be enhanced if the manager has a clear sense of where things are in relation to where they were planned to be. Later, the tracking document can be used as historical support for justifying or validating the process to outside entities who could influence the continuation of activity. It can also be used internally to show organizational members "where we've been," a process which often provides additional motivation for change.

• *Applications for practitioners.* Practitioners can certainly use the stream approach in the three ways prescribed above for managers. But, in addition, there are several other applications particularly appropriate for the change professional. First, if stream diagrams are kept for several independent change projects, they can be used by the change agent to build learning across cases. Initially, creating a stream diagram for one project can be useful in thinking about and intervening in a follow-on project. The first two can build knowledge for the third, and so on.

Eventually, practitioners can begin to develop their own models of change based on the findings that evolve from repeated application of this framework. Theories in use can grow from these models with consequent improvement in the practice of OD.

A third potential application for practitioners includes using this approach to educate clients. A clear, easy-to-understand method for communicating diagnostic information, for helping in planning and for clarifying current states can prove extremely useful to practitioners of change.

• *Applications for researchers.* Those who study the processes of change for the purpose of generating knowledge about change dynamics can also use this approach in their work. Codifying the trigger patterns and relating them to outcomes of change efforts could yield information on the effectiveness of one pattern over another. Taking the trigger codifications and determining if repeatable cycles occur is another potential output of this method of specifying the process of change. Finally, using the stream diagram as the basis for assessing the impact of an OD process could be a third way of helping research scholars to better understand organization development.

Conclusions

The stream analysis approach has the potential for helping managers, practitioners and researchers improve their understanding and practice of OD. The basic framework is quite flexible and can be expanded to include greater numbers of change factors as the need arises. By its structure, it yields a more easily interpretable view of complex change processes and, as a consequence, enhances the possibilities of improving the quality of our activity in the field of planned change.