Why Does Project Management Fail?

IVARS AVOTS

When the management of Sophisticated Systems Company saw that the life of one of their more profitable product lines was rapidly fading, they jumped at an opportunity to develop a similar but more sophisticated product. An experienced team was assigned to carry out the design and get the product into manufacturing within twelve months. However, a year and a half and several million dollars later, the first prototype still had not passed system tests, and some members of the board were wondering whether the whole idea should be dropped. The project management system which had been developed to a high state in this company had unexpectedly failed.

The experience of Sophisticated Systems Company is not exceptional. The many instances where project management fails overshadow the stories of successful projects. What are the reasons for failure? I can best answer that question by first answering another: **Why do companies turn to project management?**

The specific reasons which move management to consider project techniques are not easy to pinpoint. A department store selected project management to establish a new warehouse and service facility and concurrently as an opportunity to revamp miscellaneous store systems. Project management was the only timely and effective method whereby it could achieve such revamping. A chemical company that introduced project management to rejuvenate its new product development found it the most effective way to keep up with technological change and with competitors. An electronics company turned to project management when the emphasis in its business changed from components to entire systems; as a side effect, it found that project management increased morale by greater product identification.

Project management often seems the best approach to tasks which are not effectively handled through traditional methods. In the typical organization, work is carried out by functional departments, such as engineering and manufacturing, and is supported by staff groups, such as personnel and accounting. In project management, on the other hand, a selected individual is given full responsibility for all aspects of a distinctly defined element of the company's business. While in some cases he may be assigned the required functional support, more often he negotiates directly for such support. Although many people view the project manager as a miniature general manager, he usually lacks the commensurate authority and depends on various management techniques to carry out his job.

Despite these organizational shortcomings, the project management approach is the preferred method whenever management wants to deal with one-time defined projects, such as construction jobs, introduction of a new product, or installation of a computer; management believes the task on hand is bigger than anything the organization is accustomed to; the task is very complex and involves interdependence of a number of departments; or the task has particularly great significance to the organization, such as an investigation related to a merger. The rewards for successful project management are attractive: one-time tasks can be accomplished with a minimum interruption of routine business; chances of meeting cost, schedule, and performance targets are greatly improved.

Though project management has for some time been the predominant operational technique in the aerospace industry, it has only recently made inroads into strictly commercial companies. Some

managers believe that this is a logical trend, reflecting the changes in business generally. Thus, companies that have used this technique successfully may find any competitive advantage over their more conservative neighbors wiped out in time as it becomes commonly used. But the more general use of project management techniques may also bring about a higher incidence of failure.

The symptoms of project management failure are many. Some of the more obvious indications are high costs or schedule overruns, poor-quality products, or, as in the case of Sophisticated Systems, failure to meet project objectives. A project that appears successful to the outside world may be a failure as far as the company is concerned because of the internal strife caused by redefinitions of the project's scope, large-scale design changes, and the need for additional funding.

If we now look for the reasons for failure, we find that a project management venture is sometimes doomed from the beginning; under the circumstances, it should never have been undertaken. More often, however, the causes are specific—and in this respect commercial projects show a considerable overlap with defense projects where the experience has been more extensive. It follows that industry can gain the greatest benefits by examining the experience in both of these areas. I have found that the most common reasons for project management failure are: the basis for a project is not sound; the wrong man is appointed project manager; company management fails to provide enough support; task definitions are inadequate; management techniques are not appropriate; or project termination is not planned.

Basis for project not sound. In organizing a new project, ideas are often borrowed from other companies without recognition that each application is unique. For example, a pharmaceutical company's new drug development was accomplished along functional department lines. To accelerate the development process, management decided to identify specific projects and assign managers to them. However, the model which they followed did not give adequate authority to project managers. In effect, they were hardly more than expediters. When management further insisted that these new managers continue also in their normal plant functions, they lost all interest in the new system. The men's own jobs gave them more challenge and more security than project management.

The continuation of project teams within the organization may be just as bad as following a borrowed management model. An aerospace company which had a very good reputation in the fabrication of simple systems bid on a new system which was an extension of the work they had previously done. In addition to fabrication, the new system called for a substantial amount of development followed by mass production. On the basis of their previous success, management selected the existing project team for the follow-on. However, the problems which emerged on the new program were quite different from anything the project team had experienced. They could not be solved by the same techniques which had been successful before. The new program came to a virtual standstill before this fact was recognized by top management.

Projects are inherently dynamic and over their life may require various management techniques. Changing the management style during the course of the project is not at all unusual. In fact, it characterizes the good project manager. It follows that, unless an old team is flexible, giving it a new product will not automatically assure success.

The wrong man as project manager. Many project failures can be attributed to the selection of the wrong man as a project manager. There is no question that the manager must be a leader and organizer. He must make important decisions on the basis of few data which have been analyzed in haste. There is a continuous tradeoff conflict between costs, schedules, and technical performance. Because of the operating style required of him, a man who has been highly successful in a traditional department may not last long in project management.

As an example, a chemical product company vested the project manager with the necessary authority and, in addition, gave him a strong staff. However, there were unavoidable conflicts when this staff was pitted against the departments, which the project manager was too weak to effectively arbitrate. As a result, each department went its own

Ivars Avots, a management consultant with Arthur D. Little, Inc., has lectured and published widely on the application of planning and control techniques to systems projects.

way, activities were duplicated, and the real purposes of project management were lost from sight.

While it is usually agreed that the manager must be a good technician and thoroughly familiar with the field to which the project belongs, his emphasis must be on the overall view and not technical detail. In fact, his preoccupation with any single aspect of the project may contribute to a failure. For instance, a defense project comprising many complex subsystems was highly influenced by funding for each of these subsystems. The project manager, though a good engineer, felt that his success would be measured by his effectiveness in carrying out the administrative tasks. As a result, he concentrated on funding matters and on shuffling available funds between contracts whose scope was constantly changing because of inadequacies in design and performance. His emphasis on administrative matters was soon reflected by the other members of the project team. The technical aspects and tradeoffs were neglected, and the systems cost was much higher than it should have been. In another instance, the project manager was an old-time engineer. When the project ran into technical difficulties, he devoted all of his time to technical details while letting schedule and cost conditions deteriorate.

There is no question that decision making in a project environment takes place at a much faster pace than in routine business operations. Many managers with successful background in functional departments cannot live up to these requirements. In appointing a project manager, the executive must look not only to the candidate's past achievement, but more importantly to the task ahead.

Company management unsupportive. Even when the right man is selected for the project manager's job, he may find it exceedingly difficult to carry out his responsibilities without adequate support from management. His lack of such support may often reflect top management's lack of understanding of his needs. For example, top management may not yield their responsibility for subcontracting, even though a large proportion of the project may be subcontracted; this is similar to a situation in which management retains control over project funds. In fact, there have been cases where top management has made agreements affecting a project behind the project manager's back. This places the manager in an untenable position and weakens all project management efforts within the company.

In many cases the company's organization system does not aid the project manager in carrying out his responsibility. In a large engineering and construction company, planning of the construction job was accomplished in a central scheduling department located in the engineering division. Management had put construction planning under the purview of engineering because computer processing was not available in the field and they felt that the central unit could serve multiple projects more effectively than could local ones. However, management eventually found that in practice the central plans were not followed in the field. Construction superintendents on large jobs kept their own planners who scheduled the month-to-month activities. On the basis of these findings the procedure was changed so that the project superintendent was made personally responsible for the plan, and the planning function was physically moved from the engineering department into the construction department. This resulted in better formulated plans for the project, better utilization of the plan, and higher morale in the construction organization.

The project may also run into difficulties when the company is not willing to make changes required for effective operation. A large company was forced to go into project management when it won major military contracts. As requested by the customer, the company developed work breakdown structures and installed a PERT cost system. However, management felt that they could not justify a change toward end-item orientation at all levels of the organization and insisted on a modification of the commonly accepted system. Engineering tasks were set up according to project practice, but manufacturing and similar organizations remained strictly functional. As a result, the lower levels of the work breakdown structure showed a mix of both project and functional items. Manufacturing costs were prorated to end items on a formula basis. When the project cost overran, it was virtually impossible to identify the causes, and the customer was extremely unhappy about the uncooperative attitude taken by the company management.

Inadequately defined tasks. Few things will bring a project into trouble more quickly than inadequate definition of the work content, cost, schedule, or technical requirements. One of the greatest contributions of the McNamara administration to project management was the introduction of work break-

down structures. First intended only as the common link between schedules and costs in PERT cost application, the work breakdown structure is now an important tool for conceptual organization of any project.

For example, four highly qualified companies formed a consortium to bid on a major government construction project in Central America. Several days were spent in discussing details of the project, but no agreement could be reached nor was there any real understanding of how the project was to be accomplished. Only when a decision was made to develop a work breakdown structure was the necessary logic and formalization of task statements available to clarify the project and the role of each organization. In another instance, an aerospace company undertook a major project without a complete definition of the status of development. As the project progressed, it became apparent that production had not been developed to the stage assumed, and serious difficulties ensued.

A more obvious tool which helps to define the work at hand is the proposal. Government requests for proposals, in particular, force the future project manager to organize task requirements into a meaningful program. This is not always done for internal company proposals; as a result, such simple tasks as modernization of a building may take more time and cost more than they should.

A project manager should participate in the design of the project; if this is not possible, he should at least verify project requirements before undertaking the job. The project manager, as well as top management and the customer, must understand clearly the obligations of each party. Without such understanding the going is bound to get rough.

Project definition is not restricted to large and complex jobs. In some cases the project may be very small in terms of time. In such instances, project management may get the feeling that there is not enough time for planning. In one large study which was to be completed within three months, teams were sent out on the basis of a preliminary plan with the idea that the work would be redefined after the first results were obtained. However, as significant new areas were identified by each team, attention became focused on these. Only toward the end of the study were large holes in the basic plan discovered which had to be hurriedly patched.

A related feature of project management is the fact that it demands more management attention than do normal functional activities. Therefore, if many small projects are established, management's attention is spread very thin. In organizations devoted to the development of many new products, it is important to pick the right point at which functional activity is transferred into project activity. For example, the United States Navy in its anti-submarine warfare program has given project designation to only a few significant systems. Once a project has been selected, however, full-scale management procedures must be initiated to cover the project until its completion.

In approving the management systems to be used on a new project, management must keep in mind that the project manager needs to be informed in all areas and to anticipate problems by developing methods of dealing with them. Because the project actually begins when the direction for future activity is set, project controls must be especially rigorous at the start. In many cases there is a tendency to start with strict schedule controls, while costs and technical performance are handled in the established functional manner. However, on a project, cost control always works against schedules and technical performance. If cost performance is emphasized, schedules and technical performance may suffer; on the other hand, efforts to meet agreed schedules and technical specifications often bring cost overruns. Because of this fact, project management must give equal attention to all three aspects. Failure to do so can be dangerous, and the danger may not become apparent until it is too late.

Management techniques misused. The management techniques used on a project may not always fit project requirements. Because of the unique organizational relationship and dynamic nature of the project, communication is of utmost importance to the project manager. It is not unusual to find formal control rooms and regular control meetings as part of the manager's tools. However, unless management understands the need for such tools and gives the project manager full initiative on developing these tools to fill his needs, the most sophisticated techniques may not prevent the project from failing.

One company developed a management reporting technique which gained considerable recognition in the industry. The technique was often described in articles, and the company control room contained elaborate displays for visiting dignitaries. However, the technique was not sufficiently used by the company's own project managers. On one major project,

the technique forecast an overrun six months before management was alerted to this condition through other less spectacular reports. Management obviously viewed it as a showpiece for the outside world rather than as an internally useful tool.

In some cases the techniques—and this includes PERT and other computer-oriented management reporting schemes—may be too sophisticated for the particular use. Striking examples of this are found in the developing nations. United Nations officials have observed that network planning techniques fail in many developing countries as soon as a computer is introduced. Even when the people understand the technique and know how to use it, they are afraid of what goes on in the black box: they simply do not trust the computer. The greatest need, according to one UN official, is for manual planning techniques which bypass the computer.

This is also true for many companies. A large construction company, for instance, which used elaborate network techniques and issued inches of computer reports on each project, found that very limited use was actually made of these data. The construction managers could not, in fact, determine the projected completion date with any accuracy. Only after a simplified bar-chart technique was introduced and critical-path information presented in a highly visible manner could required decisions be made. Similarly, in a government laboratory which worked on a complex weapon system, elaborate test-planning and monitoring procedures were established by an outside consultant. While the concept of this system was sound, it resulted in volumes of paper too large for the size of the laboratory. As a result, the system was not adequately used, and the project suffered.

Project termination not planned. Termination of a project seems to be the last thing to think about while the project is underway. However, for many people working on the project eventual arrival of the completion date is a continuous threat. It affects their morale, and it detracts from constructive activity at the time when a unified effort is most needed. In the aerospace industry where such large projects as Skybolt and Dyna-Soar have been terminated without previous notice, organizational structures often change from month to month reflecting the current inventory of projects and their manpower requirements. The people in these organizations learn to expect abrupt changes in project life, and their expectations are reflected in their operating procedures and sometimes in their job enthusiasm.

In commercial organizations where the project management concept is new, management must carefully evaluate the effect of project terminations and assure that such changes do not have adverse effects on the employees' progress in the company. It would be highly unfair for an engineer to return to his functional department from project assignment to find that his advancement had been impaired as a result of his absence. If this happens, management will find it exceedingly difficult to induce good people to participate in future project efforts.

What then are the lessons for management?

1 / When starting off in project management, plan to go all the way.

In some instances, there may be considerable resistance from functional departments to the project management concepts. Department heads are naturally fearful that they will lose some of their authority. In this situation, management may step back and settle for less than full project management. For example, instead of project managers only project coordinators may be appointed—coordinators typically having less authority and acting primarily as expediters. However, when such temporary steps are taken, it must be recognized at the outset that the ultimate objective is to have a fully operational project management system. The long-range outlook must be geared toward that goal.

2 / Do not skimp on the project manager's qualifications.

Managing a project is a difficult job requiring not only technical knowledge, as noted, but also an orientation toward planning and the ability to work together with people at different organizational levels and representing various disciplines.

Functional people often think that, since project management is primarily an administrative job, loss of a highly technical man to that organization is a loss of resources to the company. It should be noted, however, that after having served as a project manager the man may move either to another project, to general management, or back to a functional or technical area. His tenure on the project would only serve to broaden his experience and make him more effective in his job wherever that may be within the company.

3 / Do not spare time and effort in laying out the project groundwork and defining work.

If project management is a new concept to the organization, considerable effort is required in the

form of extensive interviews and discussions at various levels of management to assure implementation with a minimum of friction and resistance by the organization. This activity must start with top management. Detailed procedures must be developed, and care must be taken in formulating the approach to assure that administrative interpretation at a later date will not actually restrict the project. Work for each project must be carefully defined, using such techniques as functional performance structures, work breakdown structures, and network plans.

4 / Insure that work packages in the project are of the proper size.

The work packages, which usually represent the lowest division of the end items on the project's work breakdown structure, should be realistic in terms of effort and time involved. They should enable management to compare the end results with the efforts involved in accomplishment.

5 / Establish and use network planning techniques, having the network as the focal point of project implementation.

The conflict between traditional functional management attitudes and project management is sometimes too great to permit implementation without considerable upheaval in the organization. Discussions at a theoretical level tend to be unproductive, no matter how effectively they are conducted. The network, on the other hand, being specific-project oriented, requires a clear definition of facts and meeting of minds from various functional areas.

Participation by the various groups in network development serves a further purpose: Those who have not been previously exposed to its techniques may become sufficiently fascinated by the results achieved to set aside less relevant considerations. The initial network development is an exercise in human relations, and the new project manager must remain flexible and alert to the needs of the group.

6 / Be sure that the information flow related to the project management system is realistic.

Forms and reports are necessities of life, but management cannot depend on them alone. Much informal communication is required to keep the project going smoothly. Also, it is worthwhile to recognize natural force structures in the organization and to develop information links which serve the project's purposes. Such information links may remain unchanged even after the people have been moved into a project group.

7 / Be prepared to continually replan jobs to accommodate frequent changes on dynamic projects.

Often there is a tendency to replan only those portions of the job which are directly affected. It is true that if the original planning has been comprehensive and includes all possible facets of the project, replanning of any one portion will automatically extend to all the other affected areas. However, this ideal situation seldom exists. It is useful from time to time to review the entire job as affected by the changes and do extensive replanning. This can be conveniently tied in with schedule revisions. While small replanning jobs can be handled as adjustments to the existing master schedule, major changes may be periodically published as new editions of that schedule.

8 / Whenever possible, tie together responsibility, performance, and rewards.

When a project management system is initiated, identify promptly the channels for resolving conflicts. Management may also consider whether introduction of the system weakens employee identification with the company and if so, whether this has any adverse effect on employee performance. Increased product identification resulting from the project may be a stronger motivational force than company identification.

9 / Long before a project ends, provide some means for accommodating the employees' personal goals.

There have been instances, particularly in large aerospace companies, in which employees have been put in a "waiting pool" or required to seek their own reassignments after project termination. It is better to give employees their next assignment before the project ends; this enables them to prepare for their new jobs and gives them the feeling that they will not be forgotten.

10 / If mistakes in project implementation have been made, make a fresh try.

One construction company introduced project management techniques based on detailed critical-path networks. The approach failed because management had not provided adequately qualified personnel. Project management received a bad name within the company and was dropped. Later, a new chief executive reinstalled project management starting with qualified people, a network planning approach which was deliberately held at a higher level of detail, and firm unqualified support from the new management. This time, project management was successfully implemented.