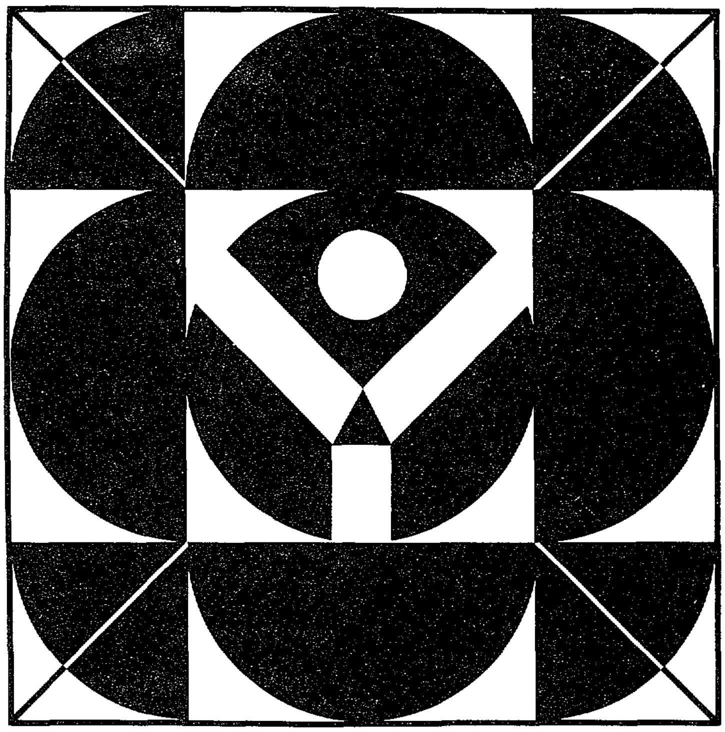
GAO GUIDE TO PROJECT PLANNING AND MANAGEMENT



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

To All GAO Professional Staff:

In doing our work, we in GAO must continuously seek to improve our capability to serve the Congress. The way we plan and manage our work is an important factor in helping us attain this goal. Good project planning and management facilitates the efficient use of resources and the timely delivery of results. These, in turn, directly impact on both the effectiveness of individual assignments and GAO.

The GAO Guide to Project Planning and Management was written to help achieve the above goals. It was developed by a broad cross-section of GAO professionals and represents a flexible approach to project planning and management which provides a consistent framework for use on all GAO jobs. The Guide explains concepts and techniques essential to good project planning and management and how they can be applied to our assignments.

I believe that the use of this Guide will improve our effectiveness and I strongly encourage you to use it in planning and managing your assignments.

Elmer B. Staats
Comptroller General
of the United States

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PREFACE

A number of experienced, GAO staff members compiled this guide with assistance and input from hundreds of other GAO staff members. The ideas contained in this guide have evolved from failures as well as from successes; they are based on research and analysis of GAO's and other organizations' experience in project planning and management.

This guide is not the final word. It is subject to revision and improvement. We ask you to contribute your ideas and experiences so that this guide can grow in value. Please direct any comments or suggestions on this guide to the Assistant to the Comptroller General - Mr. John D. Heller.

December 1978

SECTION I

OVERVIEW

This GAO Guide sets forth a Project Planning and Management Approach (PPMA) which is a flexible and consistent method of planning and managing individual assignments. It is intended to encourage a way of thinking that is straightforward, logical, and applicable to assignments GAO-wide. This approach does not represent a set of rigid procedural requirements which must be used in all instances. It does contain, however, concepts and techniques proven to be effective, and which can be used to plan and manage our assignments, particularly those under the team concept.

PPMA is designed to enhance our effectiveness and responsiveness to the Congress by supporting decisionmaking on individual assignments. Its objectives are to provide:

--Organizational consistency to job planning and management, including standard terminology and practices.

--A set of results oriented job planning and management tools for those with assignment responsibility.

--A systematic process for effectively balancing an assignment's scope, scheduling, and use of resources to maximize results.

THE USERS OF PPMA

This guide is for all GAO professionals. It provides a reference to the concepts and techniques of job planning and management applicable to our assignments. For the less experienced person it introduces these concepts and techniques and for the more experienced person, it is a reminder of what is available and ordinarily expected by team members as well as by management. It provides methods successfully used by our staff, which the individual can apply to his or her current assignment.

The guide emphasizes the job of the team leader, but it also contains information which is useful to management as well as team members. Our goal is that all team leaders have the concepts and techniques needed to effectively manage team jobs, and that other GAO professionals be sufficiently familiar with these to effectively support the team approach.

THE IMPORTANCE OF GOOD PROJECT PLANNING AND MANAGEMENT

The use of PPMA concepts and techniques is important because our work is complex and resources are limited. Our work requires the use of multidisciplined and geographically dispersed professional staff who must systematically anticipate and address unknowns to develop quality products which satisfy congressional needs. Because we have a reputation for objective reporting and since our reports are read by Congress, its staff, special interest groups and the general public, we must continue to produce high quality products. To achieve these requirements, the team needs an effective and consistent job planning and management approach to analyzing, arranging, and assigning the work within a job.

HOW PPMA IS USED

PPMA is based on the premise that quality can be maintained and our operations can be more efficiently and effectively managed through ongoing planning than through extensive reviewing. PPMA emphasizes evaluating the worth and and contribution of an activity before it is started as opposed to to after it is completed. Essential in this approach is that major unknowns be anticipated and addressed and key decisions be made before resources are committed or increased on a job. Therefore, budgetary controls are established and resource usage reassessed before proceeding to the next phase of a job.

PPMA establishes a framework for each assignment based on five consecutive key phases:

--Proposal: Justify assignment and authorize initial resources.

--*Scoping*: Determine the validity of the issues, the complexity of the assignment, the availability of data, and the range of approaches to achieve the objectives.

--*Planning*: Identify segments, tasks, required resources, responsibilities, and develop an effective assignment plan.

--*Implementation*: Perform, control, and, if required, redirect the job using the job plan as a management framework.

--*Evaluation*: Evaluate staff performance and job results.

These five phases provide a systematic basis for committing and managing resources. Each phase represents a specific stage in an assignment, with specific objectives, activities, inputs, outputs, and decisions. However, the amount of time and effort devoted to each phase depends on the complexity, requirements, and circumstances of the specific assignment. For example, a well defined congressional request may require very little time in the proposal and scoping phases, while a broad policy analysis assignment may require considerable scoping. Therefore, the requirements of a phase could be addressed in either a day or in several months, depending on the job.

Within each phase, the following five basic product-related decisions will need to be answered to effectively control the direction and results of an assignment.

--Issues: What are the issues to be developed, why are they important, and what changes do we expect to achieve by addressing them?

--Customer: Who are the users and what are their requirements?

--Timing: When does the user need the product, and when will it have its maximum impact?

--Cost: How much will the assignment cost and what is its value?

--Communication Method: How will the product be communicated to the user?

The five assignment phases and the five decision components form the framework of PPMA. Figure 1-1 shows the interrelationships of the five phases and five decision components.

FIGURE 1-1
PPMA ASSIGNMENT PHASES
AND DECISION COMPONENTS

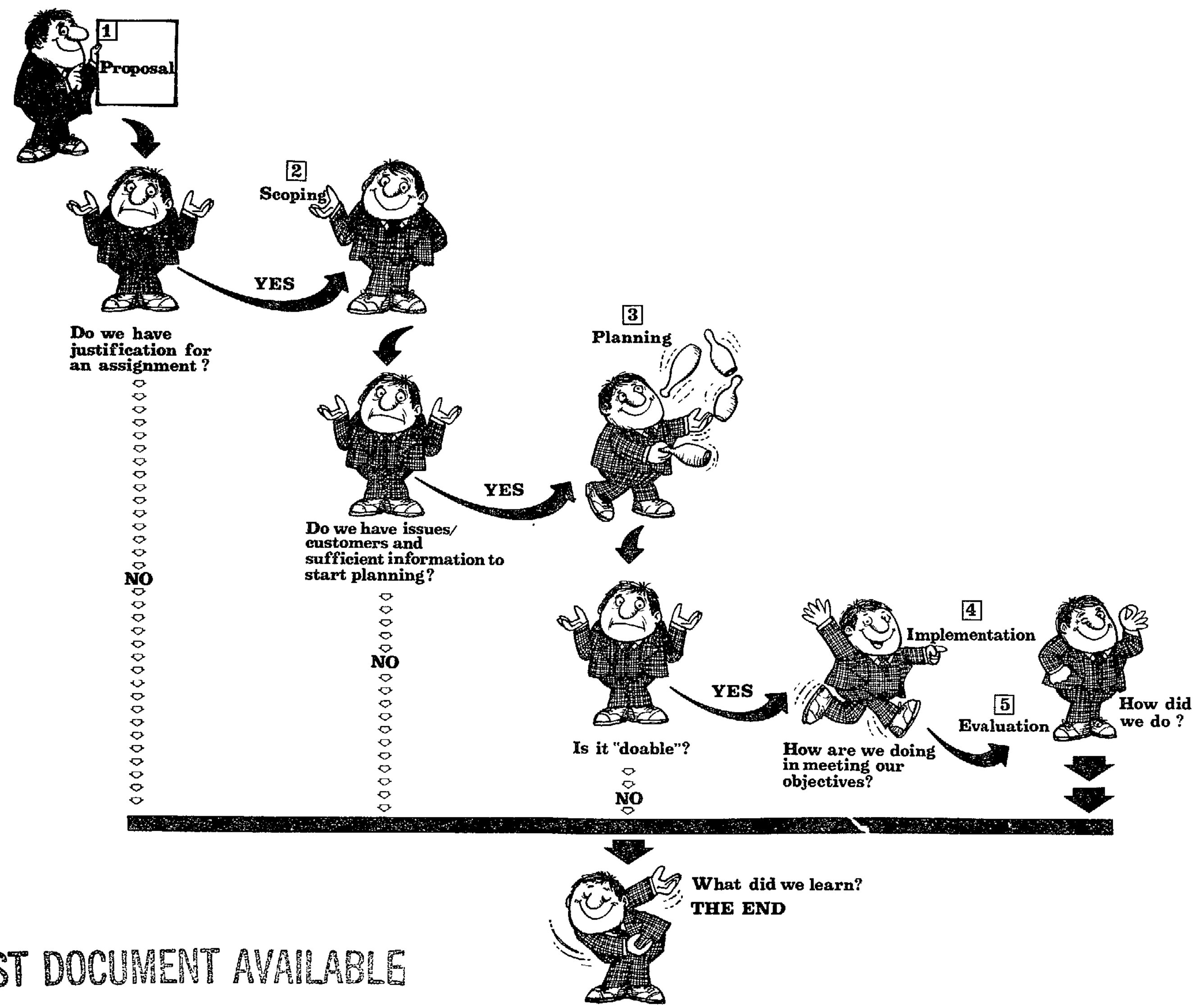
	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL	ESTABLISHED	DEFINE APPROACH	DEVELOP	
CUSTOMER	POTENTIAL	ESTABLISHED	PROVIDE FEEDBACK	PROVIDE FEEDBACK	
TIMING	APPROXIMATE	DESIRED	ESTABLISHED	ANALYZE VARIANCES	ANALYZE VARIANCES
COST	SCOPING COSTS	PLANNING COSTS	ESTABLISHED	ANALYZE VARIANCES	
COMMUNICATION METHOD	POTENTIAL	PROPOSED	ESTABLISHED	FEEDBACK	

BEST DOCUMENT AVAILABLE

Throughout each phase, these decision components serve as reference points to manage an assignment and facilitate front-end, go/no go decisions as to whether the assignment should be continued. For example, if at the end of the scoping phase we are not sure that the issues are present, and we do not know who would use the results, then the job probably should not move to the planning phase. As an assignment moves through each phase, the certainty of the information behind each decision component becomes firmer and team members and management become more satisfied that the customer's needs will be met and that the resources are being used effectively.

Questions about the five decision components are answered at the end of each phase. These answers provide the team leader, team director, and possibly others with a basis for making key go/no go decisions. These major decision points (illustrated in Figure 1-2) are those places where an assignment can best be evaluated before investing additional resources.

FIGURE 1-2
KEY DECISIONS FROM EACH PHASE



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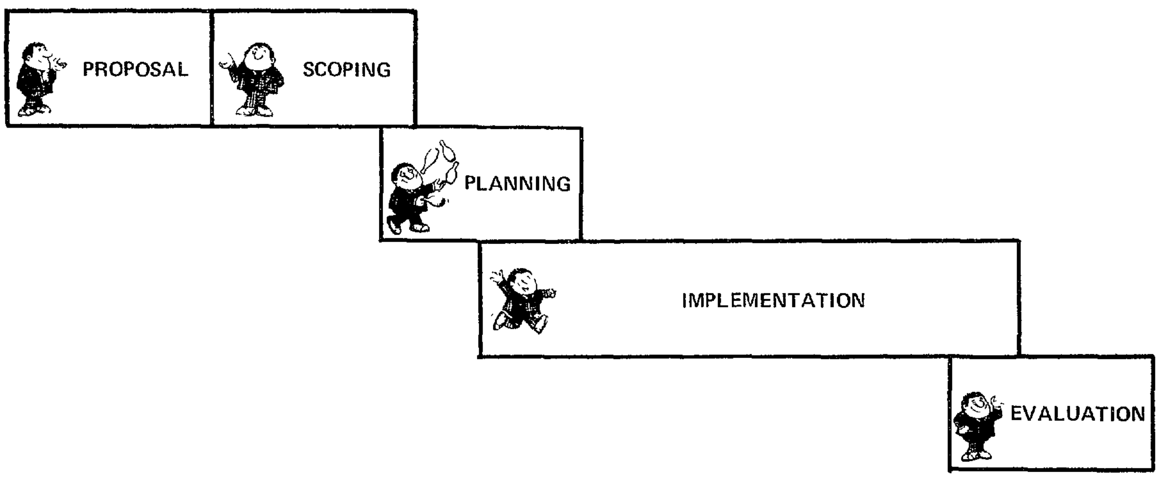
RELATIONSHIPS OF
FIVE PHASES

Although the five PPMA phases require that decisions be made in each phase before starting the next phase, some phases may overlap. Such overlap occurs from the nature of our work and does not mean that key decisions are not required after each phase, but only that some function of the next phase may start before the preceding phase is completed. These relationships are shown by Figure 1-3.

FIGURE 1-3
RELATIONSHIPS OF PPMA PHASES



The overlap between the scoping and planning phases is minimal, but occurs because some preliminary planning functions, such as identifying potential approaches to develop the issues, might be done before scoping is completed. However, key decisions, such as establishing the issues and the customer, are required before substantial resources are committed.

The planning phase overlaps the implementation phase because the team will start performing some work program steps while finalizing the assignment plan. Likewise, to have at least a nucleus of the team present to assess the job, the evaluation phase must start before the implementation phase ends.

EXPECTED BENEFITS OF PPMA

Effective project planning and management has at least five significant benefits:

--Permits better resource and calender estimates. Investing time into informed, rigorous, and systematic analysis of a job's complexities and requirements provides a thorough method for developing reliable estimates. Thus we and our customers will have greater confidence as to when we will deliver the product.

--Allows more efficient use of resources. Making go/no go decisions before large amounts of resources have been expended provides for the more efficient use of those resources. This approach should clarify what we expect from each commitment of staff time and dollars. It should limit false starts and wasted efforts associated with gathering large amounts of information without specific objectives.

--Improves management control. Because key decisions will be made earlier, management and the team leader will have more options from which to choose during the job. There will be greater opportunity to exercise timely options on the direction and content of a project based on planned evaluation points and a clearly defined assignment plan.

--Enhances communication. Because all staff will use the same terminology and plan in a common framework, our ability to readily communicate with each other will be improved. This approach will help staff working with various divisions and offices, facilitate staff training, and provide reference points to management assigning resources to competing jobs.

--Provides improved basis for evaluating staff performance and job results. A well developed job plan, in conjunction with performance appraisal standards, will provide objective criteria for assessing staff performance and job results. Mapping out expectations and using the acceptance of specific responsibility by team members will enhance the objectivity and effectiveness of performance and job evaluation.

By using PPMA, team leaders and members will be accountable for their clearly identified individual responsibilities. Likewise, since the approach provides management with an opportunity to review the job plan and agree on objectives and strategy, there is clearer communication, control, and a basis for accountability.

COMPLEMENTS COMPREHENSIVE AUDIT MANUAL

PPMA has been developed to complement the Comprehensive Audit Manual (CAM). The CAM is "an authoritative compilation of basic policies, standards, and requirements established for application in our work". Its concepts are directed toward achieving quality and effectiveness by assuring technical competence and internal consistency. In this regard, CAM provides a central reference for various approaches to audit problems, specific audit techniques, and basic performance standards for audit assignments. In addition, it cites that we should plan and manage what we do in such a way that we achieve the best results with the resources applied. PPMA takes this policy and systematically applies concepts and techniques for efficient and effective project planning and management.

CAM calls for our assignments to be performed in three phases--survey, review, and report. The survey phase provides sufficient information to clearly identify important issues and problems to be examined in detail. Such information should be used to establish review objectives, estimate staffing requirements, schedule work at specific locations, prepare work programs, and establish target dates for completion and reporting. The review phase consists of the detailed evaluation of specific activities or operations, and the report phase provides for communicating the results.

PPMA is compatible with the survey, review, and report phases; however, it breaks the survey phase into discrete decision points before substantial resources are invested. A survey will usually move through the proposal, scoping, and planning phases, while the review and report phases will contain PPMA's implementation and evaluation phases. The implementation phase covers all aspects of doing the work included in reviewing and reporting.

While most surveys will follow this pattern, some will move through all five PPMA phases. The intent of these surveys will generally be to study a new area or agency and develop several job proposals or a background paper. The essential element is that the five decision components be addressed at points at which go/no go decisions can best be made.

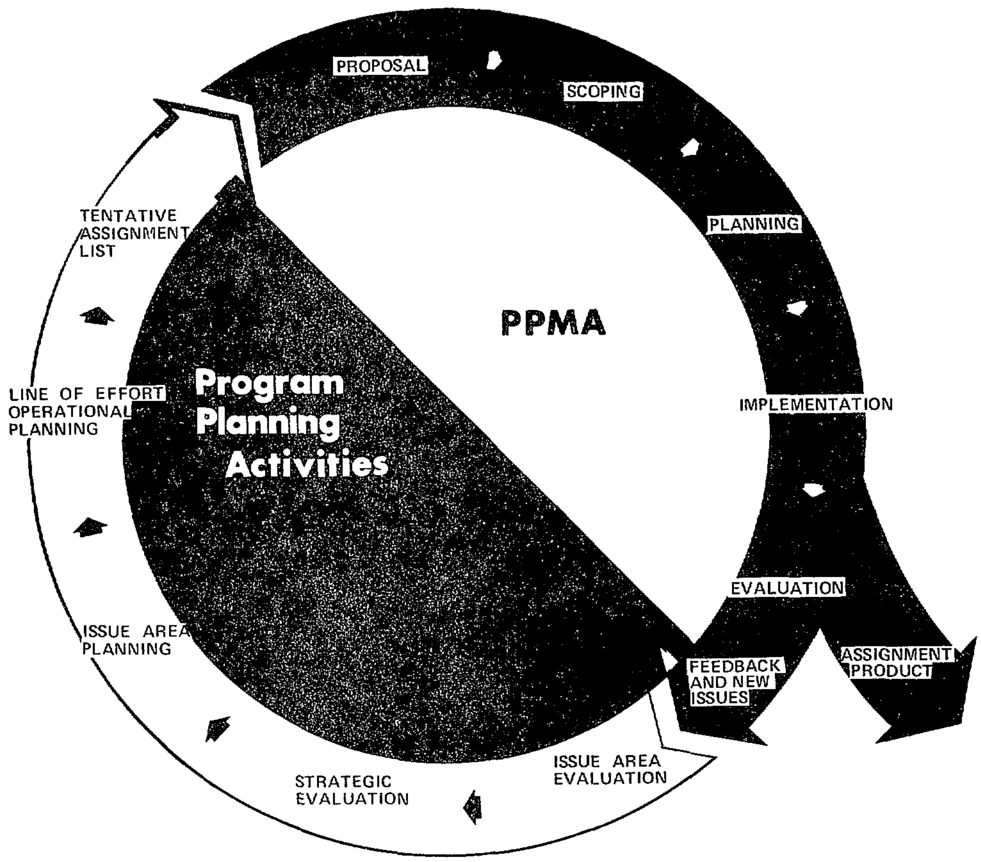
INTERFACE WITH STRATEGIC PLANNING SYSTEM

Our program planning system identifies key issue areas--matters of national importance, or subjects in which Government has an obvious stake--and assigns leadership responsibility to one of the GAO operating divisions. These divisions then prepare program plans for each issue area, and identify priority lines of effort and line-of-effort statements which guide our actions in that issue area. Some divisions also develop operational or unit work plans to implement lines of effort. These plans bridge the gap between strategic and individual assignment planning. The next step--identifying and scheduling individual assignments, which usually starts with the Tentative Assignment List (TAL)--is an even more decentralized process, as each division is responsible for planning its own assignments.

The individual assignment is the foundation of our operations, since completed assignments provide the products we issue in addition to feedback on new and existing issues which can impact on future assignments. PPMA is consistent with the strategic planning process and facilitates feedback into this process. For ease of illustration, the relationship between strategic program planning and PPMA is shown as a sequential cycle; however, as explained in Section II, certain aspects of these two processes may occur concurrently.

FIGURE 1-4

ASSIGNMENT LIFE CYCLE



SUMMARY

PPMA has been designed to provide Office-wide guidance on some of the "how to's" of project planning and management, particularly under the team approach to GAO work. It is a management tool for team leaders and members and will serve as a reference for those who support and manage assignment teams. However, PPMA concepts and techniques will be useful only if they are flexibly applied to each specific job situation and then supported by management follow-through. This flexible application will be achieved only through the use of individual judgment and management commitment to using PPMA as a framework. Therefore, each division must determine how the concepts and techniques within the framework should be applied to meet its specific requirements, and each team leader should do the same on each specific job.

The remaining five sections of this guide describe the approach in the context of the five assignment phases: proposal, scoping, planning, implementation and evaluation. Responsibility for PPMA is divided into program, resource and team functions in these sections. The glossary further defines these responsibilities. Each section reviews the objectives, concepts, key decisions, some specific techniques, and the expected results of each phase. The Appendix describes the role and basics of project documentation and some additional specific techniques.

SECTION II

PROPOSAL PHASE

OBJECTIVE

The objective of this phase is to develop background and justification for a specific assignment. This should be done with a minimum staff-day investment and, for the most part, consists of those activities which result in a Form 100.

CONCEPTS

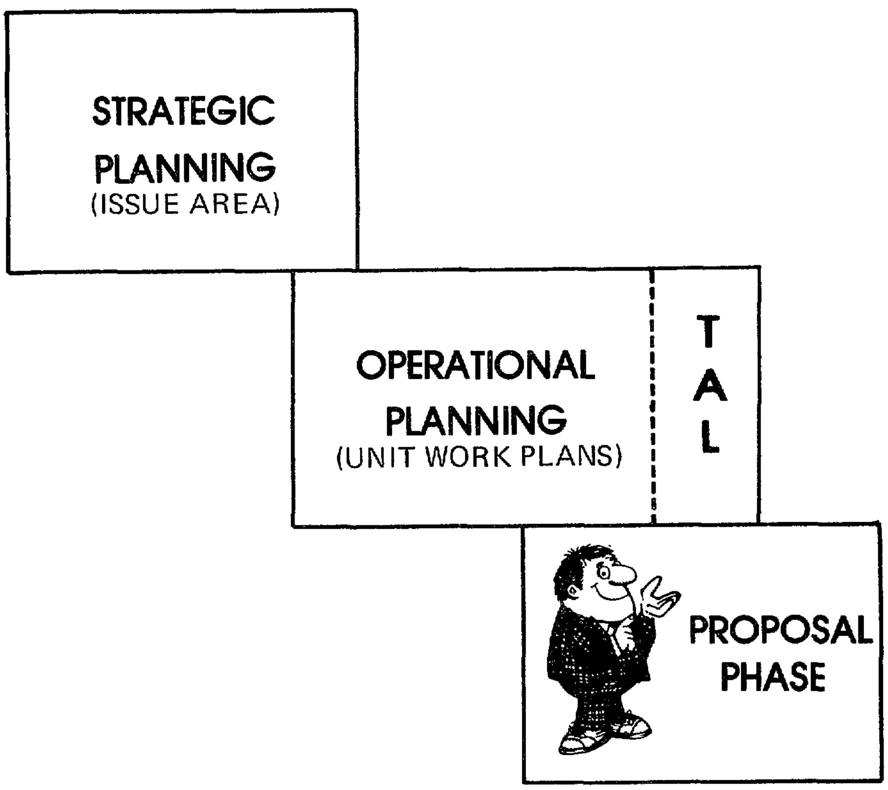
Certain key concepts of this phase must be understood to fully appreciate its purpose and its relationship to the other phases. These key concepts are discussed in the following section.

Interface with GAO Planning Process

The proposal phase should not be viewed as an isolated process but rather as an extension of GAO's strategic or program planning process. This process is a sequencing of events from the selection of issue areas, to line-of-effort planning, to operational planning, and finally to the initiation of individual assignments. The interface point of the proposal phase and the strategic planning process occurs during, or at the end of, operational planning. In some instances, the objectives, key decisions, and outputs of the proposal phase may have been accomplished during operational planning.

Figure 2-1 shows the relationship between strategic and operational aspects of program planning and the first phase of PPMA.

FIGURE 2-1
INTERFACE BETWEEN STRATEGIC PLANNING
AND PPMA PROPOSAL PHASE



Basic Step in Allocation of GAO's Resources

The proposal phase, in connection with the strategic and operational planning, helps determine which assignments should be pursued considering our limited resources. Usually more assignments are worth considering than staff available to undertake them, and authorizing of resources through the proposal phase determines which opportunities for jobs will be traded off against others.

Proposal Objectives Accomplished with Minimum Investment of Resources

The intent in this phase is to develop needed information and not become experts in the subject area. However, enough information should be developed to decide whether to proceed to the scoping and planning phases and commit additional resources. By taking this approach we do not fully commit our resources until we have a more solid basis for doing so. This basis will develop as our understanding of the issues and customer develops.

DECISION COMPONENTS

Identifying Issues and Customers

The proposal phase focuses on two main decision components, the issue and the customer, so that by the end of this phase, potential issues and user are iden-ified. Questions to be resolved concerning potential ssues are:

--What are the potential issues?

--Which can be addressed?

--Which should we address?

--Which have been addressed in past GAO reviews?

--Which are being addressed in present work?

The other key decision component is determining our intended customer, or user, for this particular project. The purpose of establishing a potential user is to assure that there is a reason for doing this job and not necessarily to seek approval by a specific individual for undertaking an assignment. Identifying a specific individual is not necessary; however, the team should understand who the probable user of the final product will be. If there is a specific user in mind, such as a congressional committee, it may or may not be necessary to contact them at this stage of the job. Prior to contacting a potential congressional user on a self-initiated assignment, we should coordinate with the GAO group having issue area responsibility and develop sufficient background information. If at that time there is a need to contact a potential user, this can be done through the issue area group.

While we would normally seek to identify a specific customer, we must recognize that our customer could be the entire Congress, several Federal agencies, or some other general audience. In such situations, individual assignments would be continued if they are specifically determined to be significant and capable of improving government operations.

Potential Timing, Cost
and Communication Method

The proposal phase also addresses the three other decision components:

--The probable timing for doing the assignment.

--The cost estimate for scoping and planning the assignment.

--Potential ways of communicating the results of our work.

At this point, the timing will be concerned with very general targets, such as next year's budget hearing, legislation renewals, etc. Regarding cost estimates, the reasonable cost to scope and plan the assignment can be estimated. Generally, 50 to 100 staff-days might be sufficient, but the specifics should be determined on a job by job basis. Large and complex assignments may require more time, whereas assignments with clearly defined issues may require substantially less time. Based on the specific situation, management may wish to budget time only for the scoping phase rather than budget for both scoping and planning.

The communication mode can best be determined later in the process, after more information is collected on the user and the timing of the assignment. One situation may require a letter or testimony, whereas another may require a complex report.

These five decision components can then be assessed near or at the end of the proposal phase. Figure 2-2 shows the status of each of these.

FIGURE 2-2
PROPOSAL PHASE - STATUS
OF DECISION COMPONENTS

	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL				
CUSTOMER	POTENTIAL				
TIMING	APPROXIMATE				
COST	SCOPING COSTS				
COMMUNICATION METHOD	POTENTIAL				

ACTIVITIES/TECHNIQUES

Several activities and techniques which can be performed or considered during the proposal phase are shown below:

(1) Identify potential issues and customers with readily available information.

--Review issue area plans and priority lines-of-effort.

--Conduct literature search of the general topic area.

--Review prior GAO work and work currently in process related to the area.

--Review pertinent legislative background information, including proposed legislation.

--Identify potential customer and probable timing.

--Coordinate with OTA, CRS, CBO and others.

--Consider alternative communication methods.

(2) Determine resources required to accomplish the scoping and planning phases.

--Identify possible alternative locations from which a team leader can be selected.

--Identify desired or required qualifications of team leader.

--Match job requirements with skills, developmental goals, and preferences of available staff.

--Establish cost estimates for scoping and planning.

(3) Depending on the assignment, additional job proposal techniques may be necessary to justify the assignment.

--Conduct initial agency interviews at appropriate level to obtain information on the potential issues.

--Contact agency audit group to determine past or current efforts in the subject area.

RESULTS/OUTPUTS

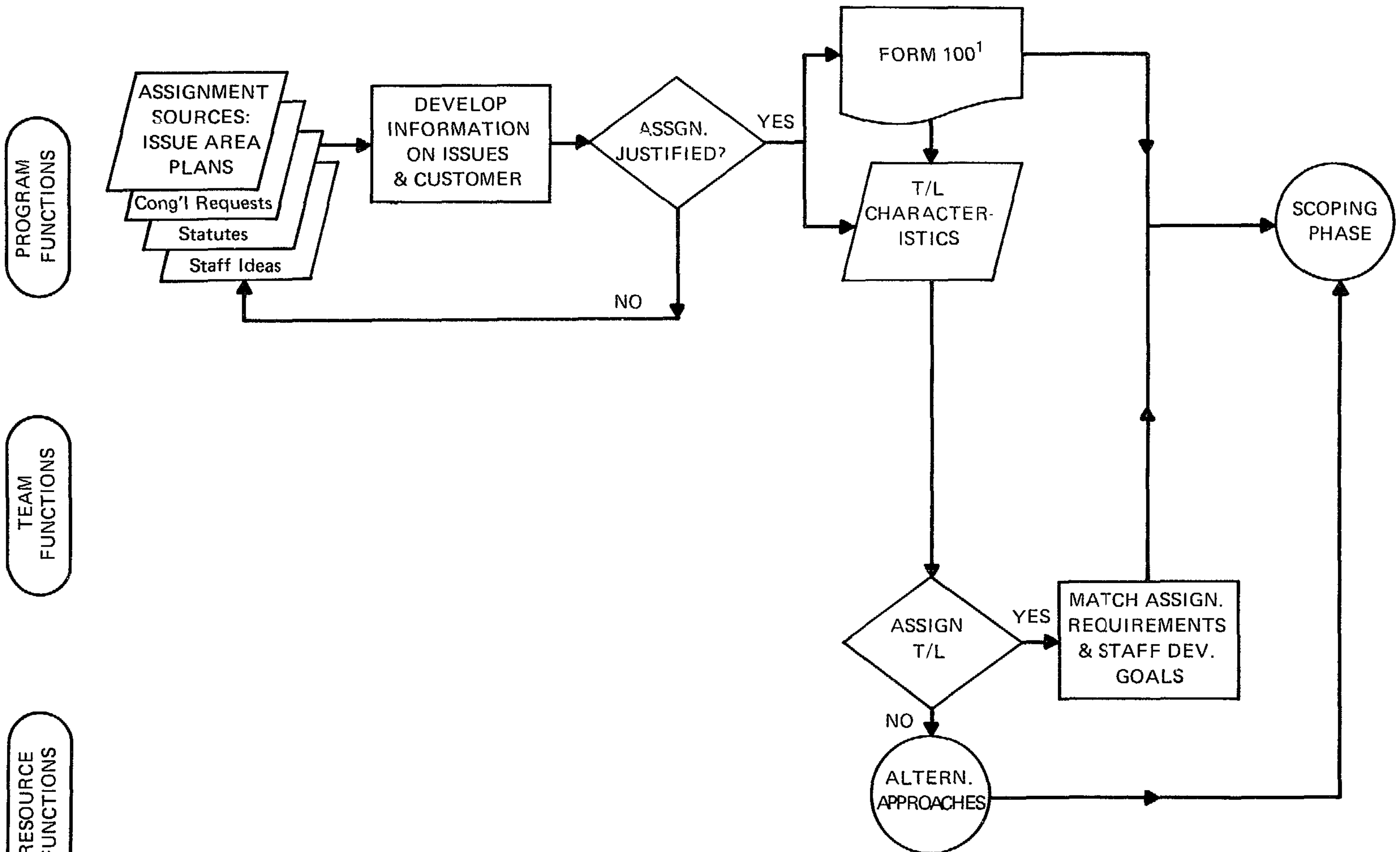
The result of this phase is that the issues and customer have been identified with readily available information and that we have determined an assignment is either justified or not justified.

At the end of the proposal phase, management may either terminate the assignment or authorize resources for the scoping and planning phases, or, in large, complex assignments, authorize resources for only scoping. If the decision is to move into the scoping phase, a Form 100 will be prepared briefly addressing each of the five decision components.

While assigning a team leader during the proposal phase may not always be practical, the team leader should be assigned as early as possible during the assignment to lead the scoping and planning phases. PPMA relies on early decisions before a large resource investment, and the team leader should be available to participate in those decisions, if he/she is to be responsible for the assignment.

Figure 2-3 illustrates the sequence of key steps in the proposal phase leading to the scoping phase.

FIGURE 2-3 PROPOSAL PHASE FLOW CHART



[1] Issues, customer, timing, cost, communication method are briefly addressed in the narrative section.

SECTION III

SCOPING PHASE

OBJECTIVE

The objective of the scoping phase is to gather enough information to:

--Establish the issues to be addressed and the customer.

--Substantiate the key assumptions upon which issues and customer needs were based.

--Determine the complexity of the proposed job and availability of data necessary to support the issues.

--Evaluate alternative approaches for assignment scope and timing.

CONCEPTS

Although we must do some preliminary information gathering in this phase, emphasis is not on evaluating but on gathering enough information to make a go/no go decision and to prepare to develop the assignment plan. As in the proposal phase, emphasis is on making key decisions before expending large amounts of resources.

Importance of Understanding Assignment Complexities

Developing a full understanding of an assignment's complexities provides a sound basis for planning. This understanding or insight comes from a general analysis of the issues and what we will have to work with in substantiating them. It is important to understand as early as practical not only what we want to achieve, but also what environment and conditions we will be working in. Such information will help team directors and team leaders make more meaningful decisions on job strategy, work locations, and techniques and provide a better basis for planning the assignment.

Need to Examine Work Approaches Early

Early examination of alternative approaches for undertaking the assignment gives us the most flexibility in choosing among these options. Timely presentation of the differing methods also allows management to better compare the resources to be used and the value of the assignment with similar factors for other proposed assignments. In this manner, we can keep some flexibility in considering optional strategies.

DECISION COMPONENTS

Generally, a team leader and possibly one or two team members will gather information during the scoping phase. This information addresses the five decision components and the options available for meeting the assignment objectives. In confirming the issues, the team asks:

--Which issues should be addressed?

--Why are the issues worth pursuing?

--What is the potential impact of addressing the issues?

In addition, customer needs are better established by the end of the scoping process. As discussed in Section II, the customer might be a specific group or broad audience, but regardless of who the customer is, a determination should be made as to when the results would be most useful to the customer and how the results might be delivered within required deadlines. In the planning phase we firmly establish the timing and mode of communication.

Figure 3-1 depicts the status of the key decision components through the end of the scoping phase. As indicated, the first two components start to become fairly well established at this point in the assignment.

FIGURE 3-1
SCOPING PHASE - STATUS OF
DECISION COMPONENTS

	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL	ESTABLISHED			
CUSTOMER	POTENTIAL	ESTABLISHED			
TIMING	APPROXIMATE	DESIRED			
COST	SCOPING COSTS	PLANNING COSTS			
COMMUNICATION METHOD	POTENTIAL	PROPOSED			

ACTIVITIES/TECHNIQUES

The activities performed and techniques used to gather the information in the scoping phase will vary depending on the nature of the assignment. It is important to note that the fact finding activities in this phase are to familiarize ourselves with the work environment, determine actual availability of information, and identify key hurdles to be overcome during the job. We do not want to develop the assignment issues during the scoping phase.

The major activities are to:

(1) Establish issue and customer. This activity will be concerned with substantiating underlying assumptions in the assignment and will include:

--Interviewing policy level and secondary agency officials and other experts on the issue and its importance.

--Establishing who the customer is, usually through the issue area coordinator or through direct contact.

--Determining what information the customer wants, and when, and the most effective communication mode.

(2) Establish availability of data. Before we start performing an assignment, we should assure ourselves that the basic data necessary to do the work is accessible and reasonably reliable. In doing this we might:

--Identify and inspect critical files or other information pools.

--Test enough transactions to substantiate assumptions.

--Review pertinent legislative background, including proposed legislation.

--Determine lead times required when working with other organizations or other GAO groups (Editorial and Graphic Services, FGMS' Technical Assistance Group, etc.).

(3) Determine staff availability to do the job. The availability of required resources at desired locations should be established. This activity includes:

--Identifying basic characteristics needed to do the assignment.

--Determining availability of staff at appropriate locations.

--Identifying special techniques such as the use of computer analysis, questionnaires, and consultants that can be used to develop issues.

(4) Determine order of magnitude of project. To make an informed decision on the assignment, management should have an understanding of the magnitude of the project. This activity includes:

--Considering alternative approaches and selecting the most desirable strategy for accomplishing the assignment objectives.

--Developing an understanding of the assignment's complexities and challenges.

--Developing an estimate of the cost to complete the planning phase of the assignment in terms of staff, travel, consultants, etc.

Depending on the nature of the assignment and the experience of the team leader in the issue area, other more detailed facts may be gathered by performing an in-depth literature search.

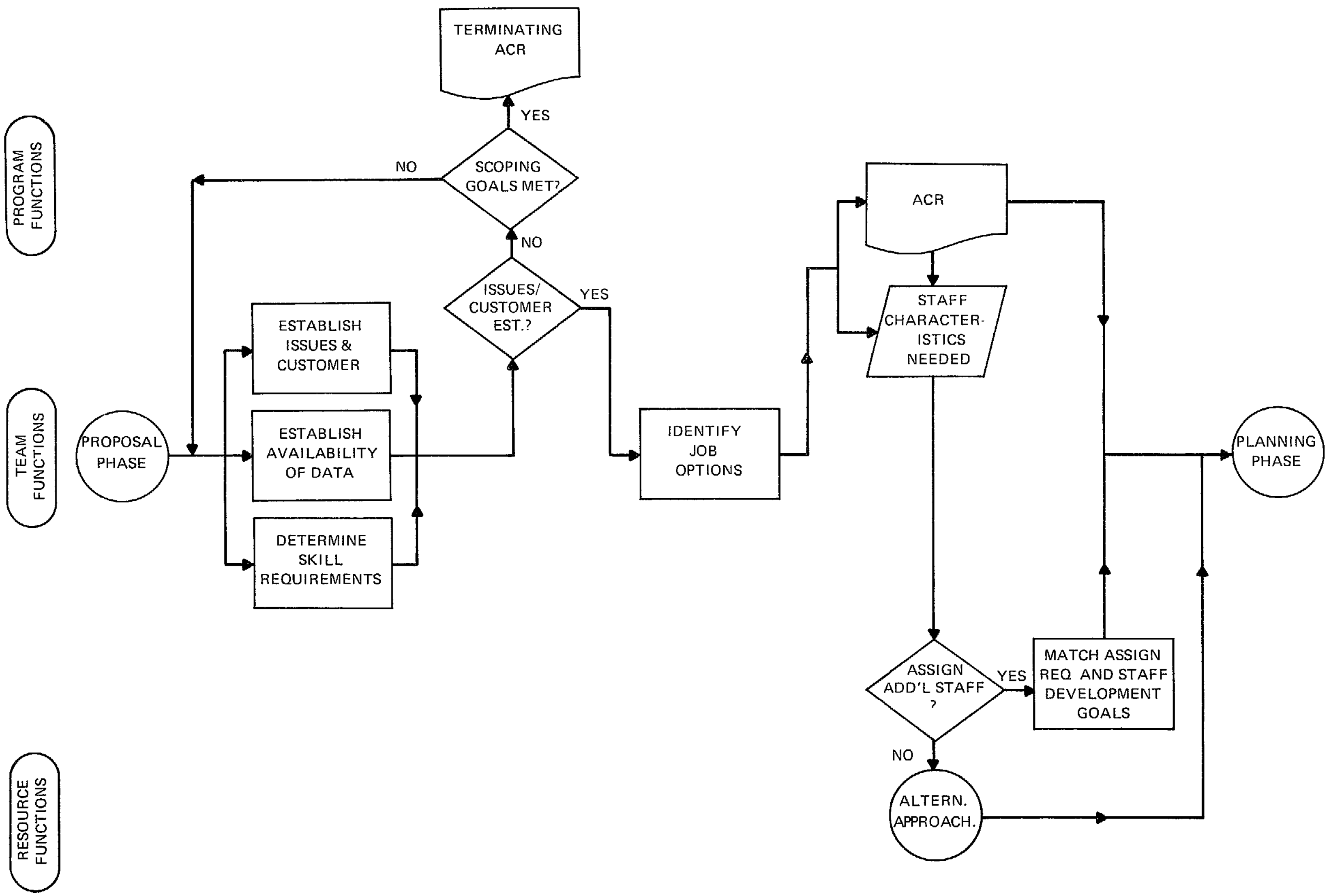
RESULTS/OUTPUTS

At the end of scoping, there should be a clear understanding of the issues and user so that management can decide whether to continue the assignment, and if so, what the basic strategy is. Enough information should have been obtained to provide a reasonable understanding of what we are going to do and to start developing a workable job plan tailored to the assignment.

If management decides to continue the assignment, and a budget for planning was not authorized at the end of the proposal phase, an ACR authorizing time to complete the planning phase of the assignment will need to be processed. When estimating the resources to plan the assignment, the team leader should determine the amount of planning to be done and those who should participate in the process. The ACR should also briefly address the five decision components.

If the information about the five decision components does not justify proceeding, the asignment should be terminated. Figure 3-2 depicts the scoping phase.

FIGURE 3-2 SCOPING PHASE FLOW CHART



SECTION IV

PLANNING PHASE

OBJECTIVES

The planning phase details the "how" of accomplishing assignment objectives by analyzing the work to be done, resource requirements, and scheduling. The result is a well conceived assignment plan which:

--Establishes clear-cut objectives.

--Allows for the efficient use of resources by sequencing activities, and organizing the work and staff around the outputs.

--Establishes roles and responsibilities of each team member.

--Serves as the mechanism for monitoring, controlling, or redirecting the assignment during the implementation phase.

CONCEPTS

Planning under PPMA is a systematic process which builds upon the information obtained in the prior phases. The planning effort affirms that the issues can be developed within the customer's timing requirements, and focuses on how this will be done. An effective planning process will balance the scope of the job with deadlines and the resources so that the assignment objectives can be accomplished.

Planning is Rigorous

The planning of a job is a rigorous and tedious process requiring skill and expertise. It is not easy and requires considerable professional discipline and judgment. However, it is better to risk over-investment of time in productive planning than to rely on ad-hoc solutions to problems during implementation. The payoff is that productive planning will expedite the doing of the job and enhance the assignment's results through more efficient assignment management.

Planning Provides Basis for Schedule and Cost Estimates

An effective job planning process involves a thorough analysis of what is to be done by whom and when. Approaches to carrying out the job need to be defined and individual tasks developed. This process provides a logical basis for estimating staff-days, costs, and timeframes needed to meet target dates. Estimates developed in such a manner tend to be less arbitrary and depend less on unsupported intuition because they stem from a disciplined building process.

Extent of Planning Varies

Planning may be as simple or as sophisticated as the assignment size and complexity warrants. The team, with the team director's approval, needs to exercise their professional judgment in deciding what level of planning best suits the specific assignment. Insufficient planning can lead to an ineffective project and too much planning can be restrictive. The important factor is that the assigment plan provide a clear understanding of the job's complexity and the extent of unknowns; and, define the who, what, when, where, and why of the assignment.

Planning as a Basis For Determining Skill Requirements

To fully use staff abilities, assignment requirements and staff capabilities, interest and development needs should be properly matched. Planning the "what" of the assignment provides an understanding of the talents needed to do the various job segments and how they fit into the overall job strategy. As a result, the team leader can specifically describe staffing requirements to those providing the staff; has a basis for relating each individual's role in the assignment; and can provide each team member with the starting point for his/her detailed planning of the "how" of the assignment.

Participative Planning Improves Commitment

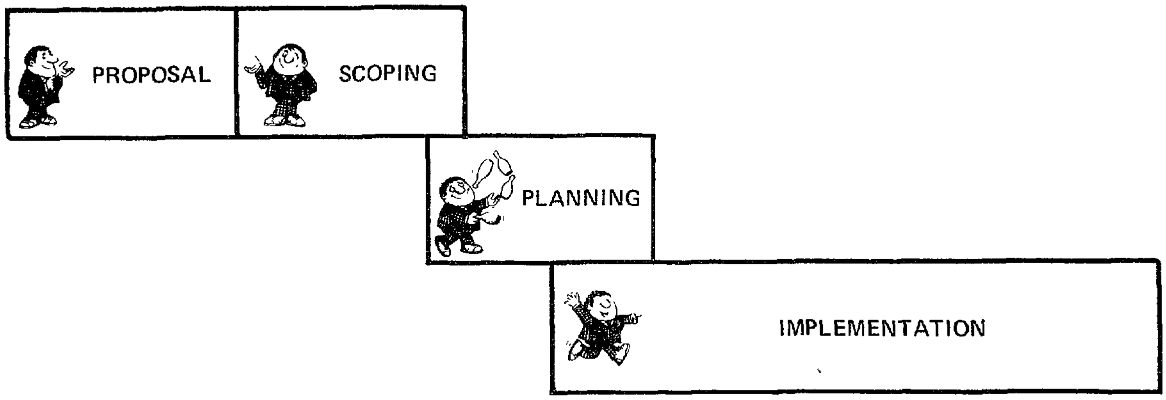
To the extent possible, each team member should participate in developing the assignment plan, particularly the details of those areas for which he/she is responsible. Participative planning in this case means having the team director and the team leader determine "what" needs to be done and having the team members, as they are assigned, plan "how" it will be done. The benefits of this approach are twofold: first, it improves each team member's understanding of job objectives, and second, it fosters staff commitment to the assignment.

Planning Phase Overlaps With Implementation

As the job plan nears completion, it is not unusual to start some of the actual assignment tasks while the final touches and approvals are being put on the plan. This results in some overlap between the planning and implementation phases. The degree of overlap, however, will depend on the size and complexity of the specific assignment. Figure 4-1 shows the relationship of the planning phase to the other phases.

FIGURE 4-1

RELATIONSHIP OF THE PLANNING PHASE TO THE OTHER PHASES



DECISION COMPONENTS

The issues to be developed and customer needs, as established in scoping, form the framework of the planning effort. Resource requirements, milestones, and tasks are all directed at what is required to develop the issues and meet the needs of the user. The following questions would be addressed during the planning phase:

--Issues: What is the best detailed approach for developing the issues established in the scoping phase?

--Customer: As a result of the planning process, have the issues, timing, or communication methods changed? How should such changes be communicated to the customer?

--Timing: When will the results be provided to the customer? What milestone dates must be met to provide the customer what is wanted, and when it is needed?

--Cost: How much will the assignment cost in terms of staff days, travel costs or other resources (e.g., computer time, consultant fees)? Is it worth the investment?

--Method of Communication: How will the assignment results be communicated to the customer? What impact does the selected method of communication have on the assignment approach, timing and cost?

As shown in Figure 4-2, decisions reached during the planning phase establish the timing, cost, and communication method to be used during the assignment.

FIGURE 4-2

PLANNING PHASE - STATUS OF DECISION COMPONENTS

	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL	ESTABLISHED	DEFINE APPROACH		
CUSTOMER	POTENTIAL	ESTABLISHED	PROVIDE FEEDBACK		
TIMING	APPROXIMATE	DESIRED	ESTABLISHED		
COST	SCOPING COSTS	PLANNING COSTS	ESTABLISHED		
COMMUNICATION METHOD	POTENTIAL	PROPOSED	ESTABLISHED		

ACTIVITIES/TECHNIQUES

The planning effort consists of several interrelated activities that build upon one another to form a plan that becomes the basis for managing the job through the communication of the results. The techniques normally used in the planning process include

--segmenting the assignment issues,

--performing task analysis,

--establishing resource requirements, and

--establishing segment/task responsibility.

The issues established in the scoping phase are the starting point for the planning process. Specific tasks, resource requirements, key milestones, and staff responsibilities are all directed at what is required to develop the issues and report the results to the customer in an efficient and effective manner.

Segment Issues

The segmenting process begins by analyzing each issue to determine its major components (subissues or outputs). The team will focus on these during planning and later when the issues are being developed. This approach breaks the assignment issues into manageable components which permit greater visibility for what must be done; the strategy necessary to do it, including any special requirements such as use of consultants, computer or graphics support; and, the expected result in terms of the quality and type of product.

Issue segmentation generally will be done by a nucleus of the team before the entire team has been assigned. This will enable the team leader to develop a preliminary cost estimate and determine the number and talents of staff members needed, travel costs, and geographic locations. Once the team members are assigned, segmentation enables them to (1) determine the worksteps or tasks needed to develop a segment, (2) identify accountability for results, and (3) finalize the resources (staff, travel, etc.) needed.

At this point in the planning process, the subissues and segments would be ranked in order of their importance and/or the level of effort required to develop them. Then the team can consider any alternative approaches that would achieve the assignment objectives. For example, questionnaires or a statistical sample could be used instead of visiting several locations or obtaining a significant amount of data. For the most viable alternatives, the team should determine the

--advantages and disadvantages,

--cost, including any change in resource requirements, and

--impact on meeting customer's needs.

This analysis would provide a basis for deciding on the approach to achieve the segment objectives and would facilitate any redirection of the assignment during implementation.

Analyze Tasks

Once the issues have been segmented, each segment can then be translated into tasks or groups of work-steps. This step involves determining what we are going to do and how we are going to do it. Task analysis is a systematic way of examining and structuring an assignment which disciplines us to think more thoroughly before we proceed with implementation. Each planner should ask, "If I had to do this task today, how would I do it, who would I see, what would I need, and what would I have when I'm done?" This analysis will:

--Help to identify tasks which can be done concurrently, thereby saving calendar time.

--Provide a basis for realistically determining resource requirements, estimating the level of effort required, and setting completion dates.

--Enable a manager to determine the order in which tasks must be completed and focus on the "critical path," i.e., those tasks which cannot be delayed if the final date is to be met.

--Enable the team to determine the effect of new tasks on the entire assignment in terms of issue development, level of effort, and delivery date.

--Provide a sound basis for establishing staff responsibilities and determining performance expectations.

Each task consists of a number of key events which should take place before the task is completed. Exhibit 4-1 shows a simplified version of the segmentation and task analysis process as it might be presented in an assignment plan.

EXHIBIT 4-1 SEGMENTATION AND TASK ANALYSIS

Assignment Title: Review of DOD Container Shipments Overseas

Issue: Is there a need for centralized DOD management of container cargo shipments?
(Result: report to Congress)

Segment(s): 1. Is DOD using optimal container configurations?
(Result: Draft chapter on cost effectiveness and potential savings)

2. Is DOD providing efficient service to its shippers?
(Result: Draft chapter on level of service)

Segment 1: Optimality of container configurations used by DOD.
(Result: Draft chapter on cost effectiveness and potential savings)

Estimated start/comp.	Tasks/subtasks	Person responsible	Staff days	Notes
	1. Identify methods used by DOD to determine and satisfy container requirements.			
	1.1 Interview traffic management officials.			
	1.2 Review DOD guidelines for overseas shipments.			
	1.3 Scan recent shipment lists to insure guidelines are being followed and information provided by officials is accurate.			
	1.4 Additional steps as needed to complete task 1.			
	2. Evaluate each of the methods identified in task 1 to determine if optimal configurations are being used, and identify alternatives.			
	2.1 2.2 Steps as needed to complete 2.3 Task 2			
	3. Evaluate alternative methods for container selection			

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Task analysis provides
basis for setting milestones

Effective task analysis provides a basis for establishing major events and calendar timeframes. Such calendar timeframes depend on direct staff time such as estimated staff days required for each task and indirect staff time for leave, professional development, etc. Both need to be considered when establishing the assignment schedule.

Establishing calendar timeframes helps the team identify workable milestone dates that serve as benchmarks for the assignment. The "milestones" provide team members with a benchmark for assessing how well individual tasks are progressing. Likewise, the monitoring of key milestones provides the team leader and management an understanding of how well the assignment is progressing from an overall project perspective. These milestones should be located at points within a job at which we have a good basis for evaluating the job's progress relative to the basic activities of the job. Key milestones might include completing major segments such as: key fact finding tasks i.e. preliminary interviews; the report drafting process; or submitting a report for editing.

Task flow analysis
ties job together

Task flow analysis is the sequencing of tasks, decisions, inputs, and outputs. This process details the relationships among the various tasks and focuses on those which are most important to complete the assignment.

Some task flow techniques include task phasing through the use of barcharts, simplified task flow-chart, PERT (Program Evaluation and Review Technique), and CPM (Critical Path Method). Examples are in Appendix IV. These techniques provide graphic pictures of the job and can be used by team management to monitor progress during implementation and to evaluate the effects of changes in the work plan or deviations from the work plan. The team leader selects the task flow technique which is most appropriate for the specific assignment.

Through task analysis the team takes the time to understand the complexities of the assignment and the unknowns involved in doing the work. The thoroughness of the task analysis process assures that those activities necessary to achieve the assignment objectives have been recognized and provided for in our estimates.

This analysis will form the basis for job direction and will provide team management a basis to monitor and control the project.

Establish Resource Requirements

This step involves determining the amount of staff time we believe each specific task should take. Careful analysis of each task improves the reliability of our calendar and staff day estimates. In addition, travel costs and special services costs should be considered and estimated. This technique enables the team to judge the worth of each segment/task and establish a benchmark to use in comparing the plan with actual. This comparison of budget to actual is a tool the team leader can use to manage the job in that it provides early indicators of where we are going and how we are going to complete the assignment. It is also a means by which management can periodically evaluate the job, the staff, and the options for completing the assignment in a timely and objective manner.

Exhibit 4-2 illustrates this budgeting activity.

EXHIBIT 4-2
TASKS BUDGETING ACTIVITY

SEGMENT: OPTIMALITY OF CONTAINER CONFIGURATIONS USED BY DOD.
(Result: draft chapter on cost effectiveness and potential savings)

Estimated Start/Comp.	Tasks/Subtasks	Person Responsible	Staff Days	Notes
7/11-8/12	1. Identify methods used by DOD to determine and statisfy container requirements	J. Jones	10	*1 week of vacation
	1.1 Interview traffic management officials		2	
	1.2 Review DOD guidelines overseas shipments		1	
	1.3 Scan recent shipment lists to insure guidelines are being followed and information provided by officials is accurate		2	
	1.4 Additional steps as needed to complete task 1		5	
7/18-8/19	2. Evaluate each of the methods identified in task 1 to determine if optimal configurations are being used, and identify alternatives	J. Jones	15	
	2.1 } Steps as needed to complete Task 2		2	
	2.2 }		8	
	2.3 }		5	
8/1-9/2	3. Evaluate alternative methods for container selection	D. Doe	25	

Budget for "unknown unknowns"

Because our work is generally not repetitive, precisely estimating how long a particular task will take may be difficult. Usually some unknowns will have to be addressed, such as restrictions on access to records, and the time required for agencies to provide comments. These are "known unknowns" in that we can anticipate the situation but we do not yet know the outcome. An estimate should be included in the plan which allows reasonable staff and calendar time for these specific unknowns. Other events, however, are impossible to anticipate--shift of key staff members to higher priority work prior to scheduled release, new legislation or agency directives which impact on the issues. These are often referred to as "unknown unknowns." Depending on several factors such as familarity with the subject area, size of the job and others, a compensating factor can be developed and used to estimate resource requirements in the plan for "unknown unknowns." These techniques would allow a reasonable staff day margin for "known unknowns" and "unknown unknowns." It recognizes the uncertainties involved in some jobs and anticipates in the assignment plan the staff time to manage them.

Budget for time to manage

The team leader and assistant team leader should also allow time in the assignment plan to manage and control the assignment. This entails maintaining a balance in the amount of time the team leader and supervisory team members need to run the job versus helping to perform assignment tasks. The amount of management time included for each job will vary depending on factors such as job complexity, number and experience level of staff assigned, and geographic locations involved. These factors should be specifically considered in planning the use of time.

Establish Segment/Task Responsibility

Finalize staff responsibilities

As team members are assigned and their segment responsibilities identified, they can perform the detailed task analysis. Once tasks have been defined and budgeted, responsibility for the results of segments and tasks is finalized for the team members. They are then responsible for the segment/tasks results in terms of scope, quality, timing, and cost. Clearly defined responsibilities provide

--an up-front understanding of what each team member is expected to accomplish and

--a clear, mutually agreed upon criteria for evaluating staff performance.

The performance of detailed task analysis may identify the need for a matrix arrangement between segments. Matrixing occurs when team members responsible for specific segments also perform tasks under other segments because of their geographic location, specific skills, or to accomplish better workload distribution within the team. This retains individual accountability for results by segment and provides flexibility in tasking to enhance the efficiency and effectiveness with which outputs are achieved.

To enhance staff commitment and foster self-motivation, the team leader tries to assure that team members understand

--how their segment(s) and/or tasks relate to the total job,

--what level of quality is expected,

--what the methodology is for doing the work,

--how individual staff development objectives will be addressed, and

--what the basis is for appraising individual performance.

Establishing responsibility clearly defines each team member's role in the job by identifying her/his tasks and the expected results. This approach helps make the individual's contribution to the total project more evident, and provides for good delegation within the team.

<u>Organize assignment around objectives</u>

Once responsibility and authority for segments and tasks has been assigned, the entire team can be organized functionally around the expected results or key segments of the assignment. Such an approach highlights responsibilities based on the expected outputs of the assignment and enhances accountability for results. The project's organization chart can demonstrate this approach as well as the assignment reporting and review levels, and where each staff member fits into the team. The major segments or components of the assignment should be detailed on the chart with an indication of the person responsible for directing each segment. Specific responsibilities for tasks such as report preparation and referencing can be shown on the organization chart. See Appendix III for an example of a functional organization chart.

Present Plan to Management for Approval

One of the major controls of the PPMA process is management's review and approval of the assignment plan. Once the assignment plan is prepared, the team director should be satisfied with the objectives and how the job strategy and scheduling will achieve these objectives. If the pieces fit together, then the job should be ready for implementation.

RESULTS/OUTPUTS

The output of the planning process--the assignment plan--serves as the master framework for defining how the job goals will be achieved, by whom, and when. It provides a reference point for the team leader to:

--Evaluate the value of a task or output initially and as the tasks change during the job.

--Judge whether target dates are realistic, given the level of effort required for various tasks.

--Identify slippage early in the project so that alternative approaches for completing the assignment can be considered while they are still viable options.

The assignment plan should include a job profile, a work program, a task flow analysis and, on larger jobs, an organization chart. Examples of these are included in Appendix III. The plan should:

--Define the objectives, approaches, and intended results of the work as agreed to by management.

--Establish responsibility for the various assignment segments and identify how staff development objectives are to be met.

--Establish benchmarks for monitoring progress and staff performance.

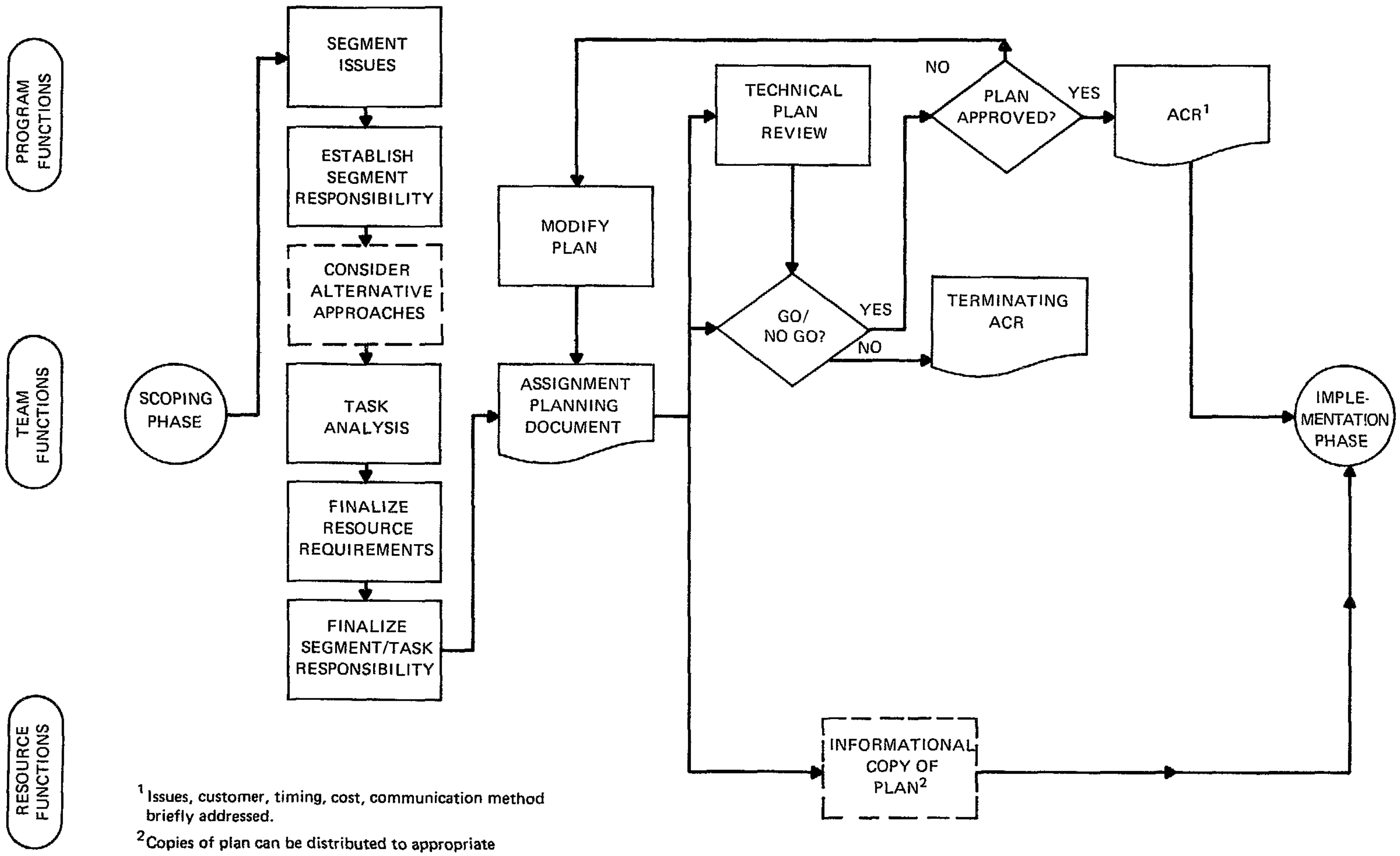
--Define customer-oriented factors--what is needed, when, and in what form.

--Establish job cost based on detailed analysis.

Since only the scoping and planning resources have been authorized at this point, an ACR, briefly addressing the decision components, should be processed for authorizing resources to complete the assignment. With the planning phase completed, the team will have firmly established the job cost in terms of staff days and the five decision components; and be reasonably confident that the assignment is achievable as planned.

Figure 4-3 summarizes the activities of the planning phase.

FIGURE 4-3 PLANNING PHASE FLOW CHART



[1] Issues, customer, timing, cost, communication method briefly addressed.

[2] Copies of plan can be distributed to appropriate management groups such as those responsible for resources.

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SECTION V

IMPLEMENTATION PHASE

OBJECTIVES

The objectives of the implementation phase are to carry out the assignment plan and use it as the basis to:

--Monitor and control assignment progress.

--React to problems encountered or anticipated.

--Retarget or redirect the assignment as required.

CONCEPTS

In this phase timely tracking of the assignment's progress is necessary to ensure: customer and staff needs are met; changes in direction, scope, and resources are made promptly; and the assignment is completed effectively and efficiently. The frame of reference for these activities is the approved assignment plan.

Assignment Plan as a Management Tool

The assignment plan can be the basic tool used by the team leader to manage and control the assignment. The plan provides a perspective on tasks, milestones, and staff usage and how these pieces fit together. The team leader can use the plan to anticipate the impact of changes, assess available options, and see where the plan can be modified.

By effectively capturing in the plan what is to be done and how, it can be used as a model of the assignment in discussions with management and the team. Using the plan in such a manner allows the team leader to keep an ongoing perspective of how the scope, scheduling and cost of the assignment are influenced by changing conditions. In addition, the comparison of planned activities with actual (variance analysis) keeps the team informed and surfaces indicators of potential problems, opportunities, or changes necessary to the plan.

The assignment plan also provides the basis for status reports to highlight job progress. Written status reports done in conjunction with either key milestones or significant changes will be meaningful to the team and management. This approach minimizes routine paperwork and maximizes progress reporting.

Dynamic Planning for Effective Control of an Assignment

The team must be responsive to new evidence, changes relative to actual/anticipated milestone dates, and the need to redirect an assignment when appropriate. When conditions change significantly, the plan should be revised to determine how the assignment objectives will now be achieved. This dynamic aspect of planning is the responsibility of the team leader. This process provides effective control of the assignment in that it allows the team leader to keep the plan meaningful.

While there may be substantial changes to a plan in the early stages of a job, as the assignment nears completion (e.g., report writing) the number and extent of plan changes will usually decline. This should be expected since the level of knowledge becomes greater as the job progresses.

Performance Counseling During Implementation

Frequent, informal evaluation and performance coaching of team member performance in relation to the plan and performance appraisal standards are essential and will aid in preparing final staff evaluations. Keeping team members informed of perceived strengths and weaknesses helps control the job; enhances quality of the final product; and furthers staff development. Performance coaching would be done in terms of the individual's role in the assignment plan and the objectives of the project.

DECISION COMPONENTS

The managerial focus of the implementation phase remains on the activities associated with the five decision components. In each case, the emphasis is on managing the job in terms of:

--Issues: In the light of current information are the issues still properly defined? What unknowns have or may affect the development of the issues? Should any issues be added or deleted?

--Customer: Are customer's needs going to be met? If not, what options exist? Has the customer been informed? Have the customer's needs or requirements changed? How best can the revised requirements be handled?

--Timing: Will the results be communicated on schedule? If not, can the date be met by changing the scope or cost? Should the date be changed in view of results to date or in response to a change in scope or cost?

--Cost: Is the assignment within cost estimates (staff days, travel costs, computer cost, etc.)? If not, has the appropriate corrective action been identified and initiated?

--Communication method: Is the proposed method still appropriate? Would another/additional product be appropriate?

As shown in Figure 5-1 the implementation phase builds on the decision components established in previous phases.

FIGURE 5-1
IMPLEMENTATION PHASE-STATUS
OF DECISION COMPONENTS

	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL	ESTABLISHED	DEFINE APPROACH	DEVELOP	
CUSTOMER	POTENTIAL	ESTABLISHED	PROVIDE FEEDBACK	PROVIDE FEEDBACK	
TIMING	APPROXIMATE	DESIRED	ESTABLISHED	ANALYZE VARIANCES	
COST	SCOPING COSTS	PLANNING COSTS	ESTABLISHED	ANALYZE VARIANCES	
COMMUNICATION METHOD	POTENTIAL	PROPOSED	ESTABLISHED	FEEDBACK	

ACTIVITIES/TECHNIQUES

During the implementation phase, the team concentrates on performing the work and communicating or reporting the assignment results called for in the plan. Using the assignment plan as a framework, the team leader monitors, controls, manages, and redirects the project's resources toward overall objectives.

Team Leader Continuously Tracks Assignment Progress

To achieve the objectives of the implementation phase, assignment progress is continuously tracked in terms of issues, staff day consumption by task, key milestones and interim decisions, costs such as travel and computer, and outputs. Tracking should be carried out on a task by task basis and includes comparing staff day usage and milestones with what was planned. An example of a form that might be used for this purpose is contained in Appendix II.

Monitoring a job's progress can be accomplished in a variety of ways. Telephone conversations, conference calls, status reports, site visits, and planned conferences are examples of the techniques frequently used.

Team Leader
Analyzes Variances

By comparing the assignment's status to the plan, the team leader can readily identify those tasks which are progressing either faster or slower than planned and how the job is moving towards its final objectives. Comparing actual assignment progress with the assignment plan is referred to as variance analysis and is a technique which provides early indicators of those areas requiring further evaluation.

The purpose of variance analysis is to determine if a change will affect such things as original issues, target dates, or resources needed. This analysis also provides the opportunity for the team leader or team director to retarget or reprogram the project either back on the original track or on a track which appears more appropriate given the latest information. It is important to remember that a variance may affect the assignment positively. For example, actual calendar and staff day expenditures may be less than the planned estimate. This could be the result of tasks moving faster than expected or of a task not being fully completed. The team leader is responsible for determining the causes of a variance, the probable long-range effect on the assignment, and the alternative courses of action. Some examples of variance analysis include:

--Analyzing calendar or staff day slippage by comparing actual results to the original plan.

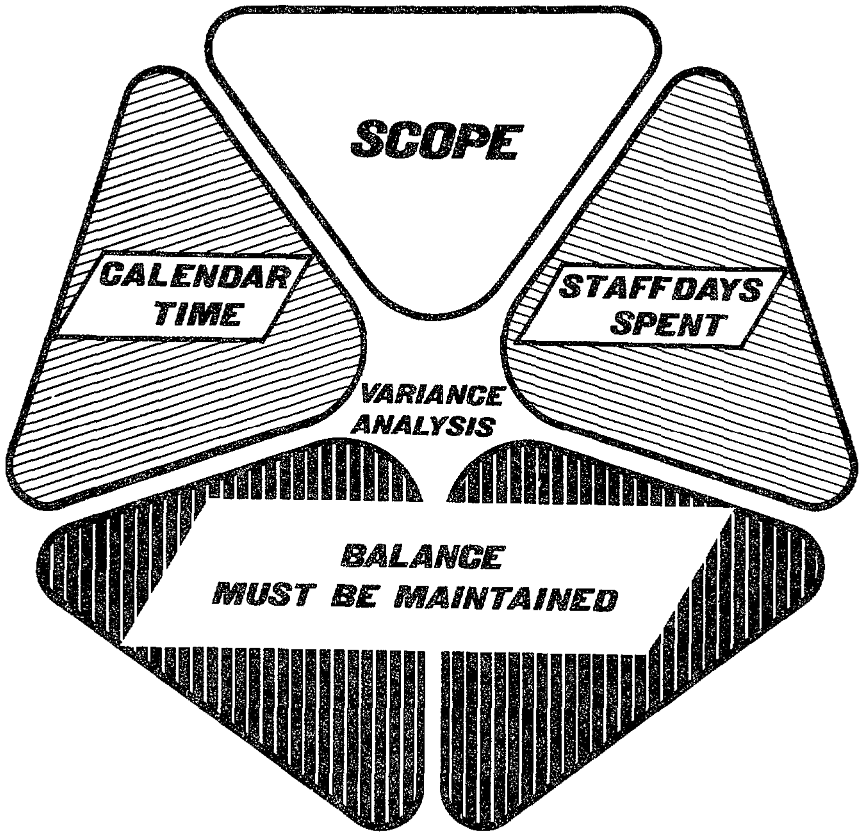
--Analyzing the issues to ascertain that they are still valid, and supportable.

--Assuring that the customer's original perception is still meaningful.

--Reviewing staff performance in terms of expectations to identify additional opportunities for development and to ensure that the original development objectives are being achieved.

Variance analysis can also be viewed as the ongoing mechanism for maintaining the necessary balance among the scope of the work, the necessary timeframes, and the staff days required, as shown in Figure 5-2.

FIGURE 5-2
VARIANCE ANALYSIS FOCUSES ON
NECESSARY ASSIGNMENT BALANCE



The frequency of variance analysis should be determined on a job-by-job basis. While the raw data should be continuously tracked and accumulated, the actual variance analysis should not be done unless the job/segment/task is at a point at which a meaningful interim evaluation can be made. It is relatively easy to determine what has actually happened, but it is more difficult to determine how that compares to what was planned. Picking logical points or milestones based on our ability to evaluate will facilitate this process and make the analysis of the job's progress more meaningful.

Report Key Variances in Status Reports

Variances in job performance can be communicated to the team leader and the team director through status reports such as written reports, telephone contacts, or site visits. The important factor is that the plan specify the type and frequency of status reports and that the status reports deal with material relevant to the assignment objectives. Status reports should include:

--Key differences between planned and actual for

--staff time,
--all other costs,
--milestones, and
--issue development.

--Explanation of the above differences.

--Key problems yet to be resolved.

--Feasibility of meeting existing goals and deadlines.

--Estimated staff and calendar days to complete.

If written status reports are used within the team organization, they can be submitted from each assignment site to the team leader. The team leader can then analyze them and draw up a master status report for the team director along with overall comments on the assignment's progress and any anticipated problems. Copies of these status reports might be sent to all the team members or work locations to keep the team informed of an assignment's progress. Using written status reports does not, however, preclude periodic telephone contacts or personal visits to discuss a project when documentation is not required.

Automated reports such as the "Report of Active Assignment for Biweekly Period Ended: XX/XX/XX" (MDS-1) and the "Report of Assignments" (AMDS-20) can be used to supplement formal status reports. These reports show milestone data, staff release dates, staff days expended, and staff days needed for individual assignments. A discussion generally would be needed to highlight significant variances. For example, a change in a milestone date can be shown on the MDS-1 report, but not the reason for or effect of the change. Hence, these automated reports and the status reports from appropriate team members serve as inputs for the team leader's analysis of the assignment's progress.

Estimate Staff and Calendar Time to Complete Assignment

In addition to evaluating actual progress relative to the plan, the team leader should periodically, such as at key milestones, evaluate the staff and calendar time required to complete the assignment. The objective of these estimates is to maintain as realistic an understanding as possible of the progress and completion requirements of the job. This analysis should be based on a task-by-task review of the work yet to be completed to determine if the staff estimates should be revised.

As with variance analysis, estimates to complete should be analyzed at points in the assignment where a meaningful evaluation can be made. These points will most frequently fall at the completion of major tasks.

Replan and Retarget as Necessary

Many factors can lead to changes in the assignment plan. These include: adding, dropping, or modifying an issue; encountering an unanticipated event or problem; or missing a key milestone. When major new issues, segments or tasks are added, they should go through a proposal, scoping, and planning process for all the reasons the entire job was put through this process. This analysis will usually be accomplished quickly and may result in modification of certain tasks or the entire plan.

An unanticipated event or problem, such as newly proposed legislation, may be encountered. If it changes the assignment's complexity--scope, time, or cost--the plan would probably require revision either in whole or in part. In some instances, unanticipated events may necessitate termination of an assignment.

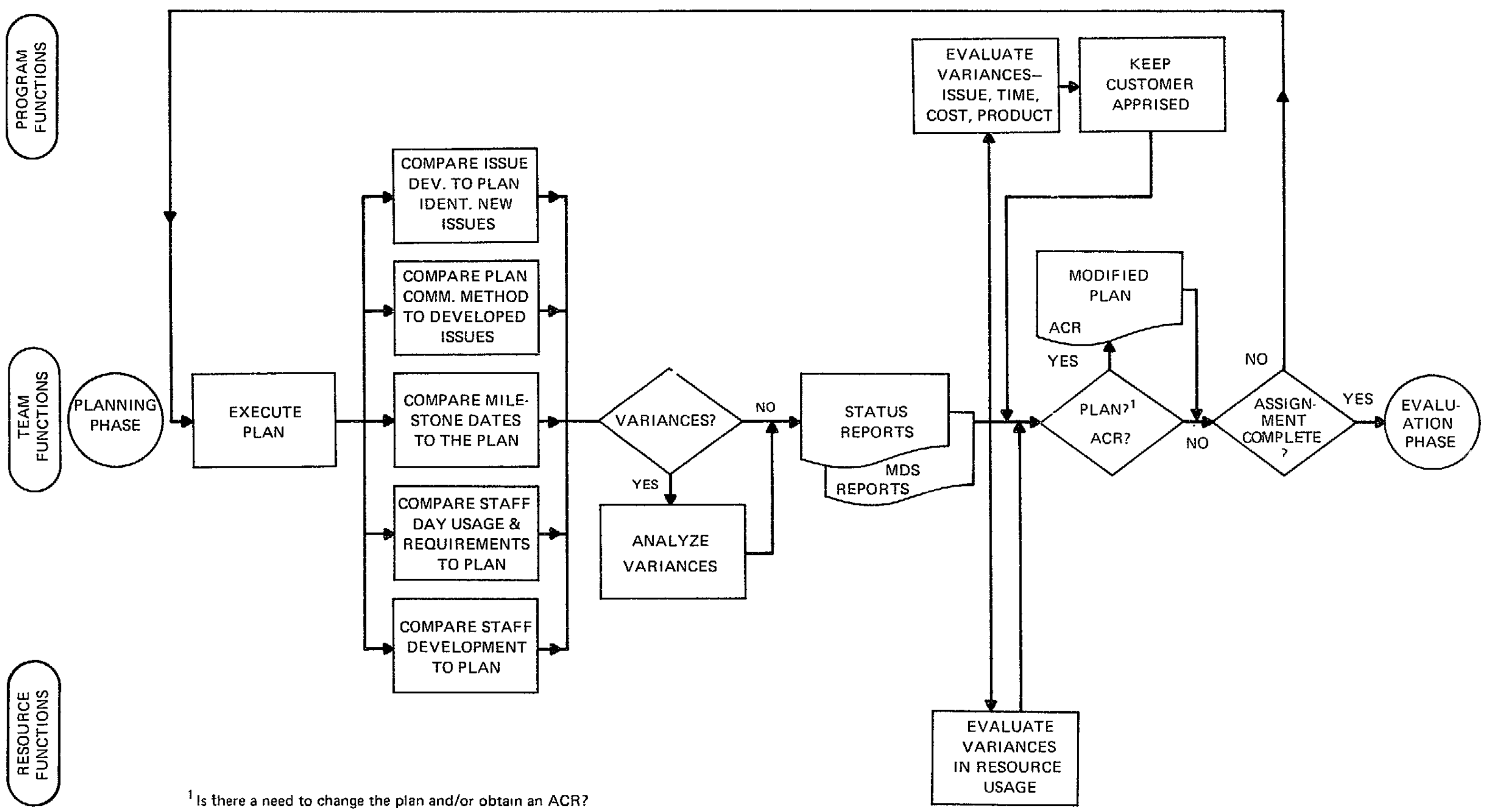
Missing or expecting to miss a key milestone may also significantly affect scope, timing, or cost. By promptly taking corrective action the team minimizes the impact of the slippage.

Plan changes provide the team, management, and the customer with valid completion estimates. In all instances of plan revision, the team leader is responsible for obtaining the concurrence of the team director and requesting an ACR if needed. Management acceptance and approval of plan changes is important for control and expectation purposes.

RESULTS/OUTPUTS

By the end of the implementation phase, the team has developed and communicated the issues. The expected results of the implementation phase are that the customer's needs are met, including agreed upon timeframes; changes in direction, scope, or resource needs are timely; and costs are controlled. The assignment is managed and controlled by maintaining an updated plan which keeps management, the team, and the customer informed on performance, cost, and timing expectations, and provides a basis for job and staff evaluations in the final phase of the assignment. Figure 5-3 summarizes the implementation phase.

FIGURE 5-3 IMPLEMENTATION PHASE FLOW CHART



[1] Is there a need to change the plan and/or obtain an ACR?

SECTION VI

EVALUATION PHASE

OBJECTIVES

The objectives of the evaluation phase are to assess job results and staff performance as measured against expectations defined in the assignment plan, and performance appraisal standards and to provide feedback for future improvement.

CONCEPTS

Job and staff evaluation is based on the premises that we learn from our experiences and that we are accountable for the responsibilities we have accepted. These premises are discussed below in terms of job and staff evaluation.

Job Evaluation

When the staff assesses the job's results and shares these experiences, the organization benefits. Through sharing these experiences, staff members may avoid some pitfalls faced by others and can learn about methods or techniques that have proven to be particularly efficient.

Staff Evaluation

Staff development is treated as a systematic process based on performance. The criteria are the assignment plan, and performance appraisal standards, with immediate feedback during the implementation phase and summary feedback during the evaluation phase. The key concepts of this process are:

--Substantial and enduring improvements in performance require integrating employee and organizational concerns.

--Evaluations are but one process in a dynamic and interrelated system of human resource and project planning management.

--Staff development is a long-term goal which can best be accomplished through a series of short term assignments.

DECISION COMPONENTS

The following questions concerning the decision components should be answered in the team's evaluation of the job and supervisors' analyses of staff performance.

--Issues: Does the product address the issues identified and refined in the previous phases? Would another approach have been more effective/ efficient? Have potential issues, if any, for future jobs been appropriately communicated?

--Customer: Does the product meet the customer's stated needs? What is the impact of the product/ assignment--actual and expected?

--Timing: Did the team meet the agreed upon timeframe for completion? Were the critical tasks completed according to plan?

--Cost: Did the team complete the project within the estimated cost budget? Have the reasons for any differences been determined?

--Communication method: Is the product consistent with the intended communication method? Does the product satisfy GAO's quality standards?

As shown in Figure 6-1, evaluation activities are directed at identifying and analyzing major variances between actual results and expectations set forth in the original and revised assignment plans. The decision components are the basis for evaluating the extent to which the original objectives were realized.

FIGURE 6-1
EVALUATION PHASE-STATUS OF
DECISION COMPONENTS

	ASSIGNMENT PHASES				
DECISION COMPONENTS	PROPOSAL	SCOPING	PLANNING	IMPLEMENTATION	EVALUATION
ISSUES	POTENTIAL	ESTABLISHED	DEFINE APPROACH	DEVELOP	
CUSTOMER	POTENTIAL	ESTABLISHED	PROVIDE FEEDBACK	PROVIDE FEEDBACK	
TIMING	APPROXIMATE	DESIRED	ESTABLISHED	ANALYZE VARIANCES	ANALYZE VARIANCES
COST	SCOPING COSTS	PLANNING COSTS	ESTABLISHED	ANALYZE VARIANCES	
COMMUNICATION METHOD	POTENTIAL	PROPOSED	ESTABLISHED	FEEDBACK	

ACTIVITIES/TECHNIQUES

The assignment and staff evaluations occur at about the same time. The activities and techniques used for both are similar.

Team Compares Job Results to Planned Objectives

During the evaluation phase, the team compares the job results to the objectives set forth in the assignment plan. This evaluation centers on analyzing the degree to which the five decision components and the major segments/tasks were achieved. To accomplish the participative intent, the evaluation phase may be initiated before implementation is complete. The essential provision is that the evaluation activities should start before team members are released; recognizing the fact that job evaluation is completed by the team leader and team director after the product is provided to the customer.

Team Highlights Unique Approaches

During the evaluation of the job's results, the team also identifies any unique approaches or techniques that contributed significantly to the assignment. If they are considered so significant as to warrant further circulation, then:

- --Memoranda to management and other audit teams could be circulated.
- --An article for the GAO Review could be written by the team about their experiences.

Identifying and communicating helpful approaches or practices could improve the effectiveness and efficiency of future assignments.

Staff Evaluations are Done Within the Team

Staff evaluations are accomplished by and within the team. In this process, the team director evaluates and counsels the team leader; the team leader and supervisory team members evaluate and counsel the team members reporting directly to them. All appraisal and counseling requirements should be satisfied before the individual is released from the job.

The staff evaluation process parallels that of job evaluation. Individually, each team member and the immediate supervisor compare the team member's actual performance to the expectations detailed in the plan and in the applicable performance appraisal standards. The comparison can include an evaluation of how well the developmental needs in the plan were addressed in the implementation phase. Variations, positive or negative, noted by these comparisons are then discussed to:

--Determine the underlying reasons.

--Identify alternative approaches which would contribute to staff development.

--Revise career development goals and needs.

The results of this analysis and discussion provide a more objective basis for staff appraisal and counseling.

<u>Team members may provide feedback</u>

To further enhance the accountability and feedback aspects of PPMA, subordinate input on supervisory performance may be solicited for counseling purposes. This input, which deals with the supervisor's approach to staff development, may be obtained on the performance of all supervisory team members. Subordinate feedback can enhance communication within the team and underscore the importance of staff development activities.

Rewards are based on results

The staff evaluation process may result in instances where outstanding performance should be recognized. When this occurs, team management can forward reward recommendations, when applicable, through appropriate channels for processing. Management may also recommend and process awards for the individual team members as well as for the team as a whole.

RESULTS/OUTPUTS

The evaluation phase allows the team to reflect on and assess the assignment, communicate this assessment as appropriate, and evaluate individual team member's performance. The results of the evaluation activities are:

--The extent to which product quality and planned scope were achieved is clarified.

--The extent to which calendar and staff target dates were achieved is noted.

--The real or potential product impact is determined.

--Assignment appraisals and counseling are provided within the team.

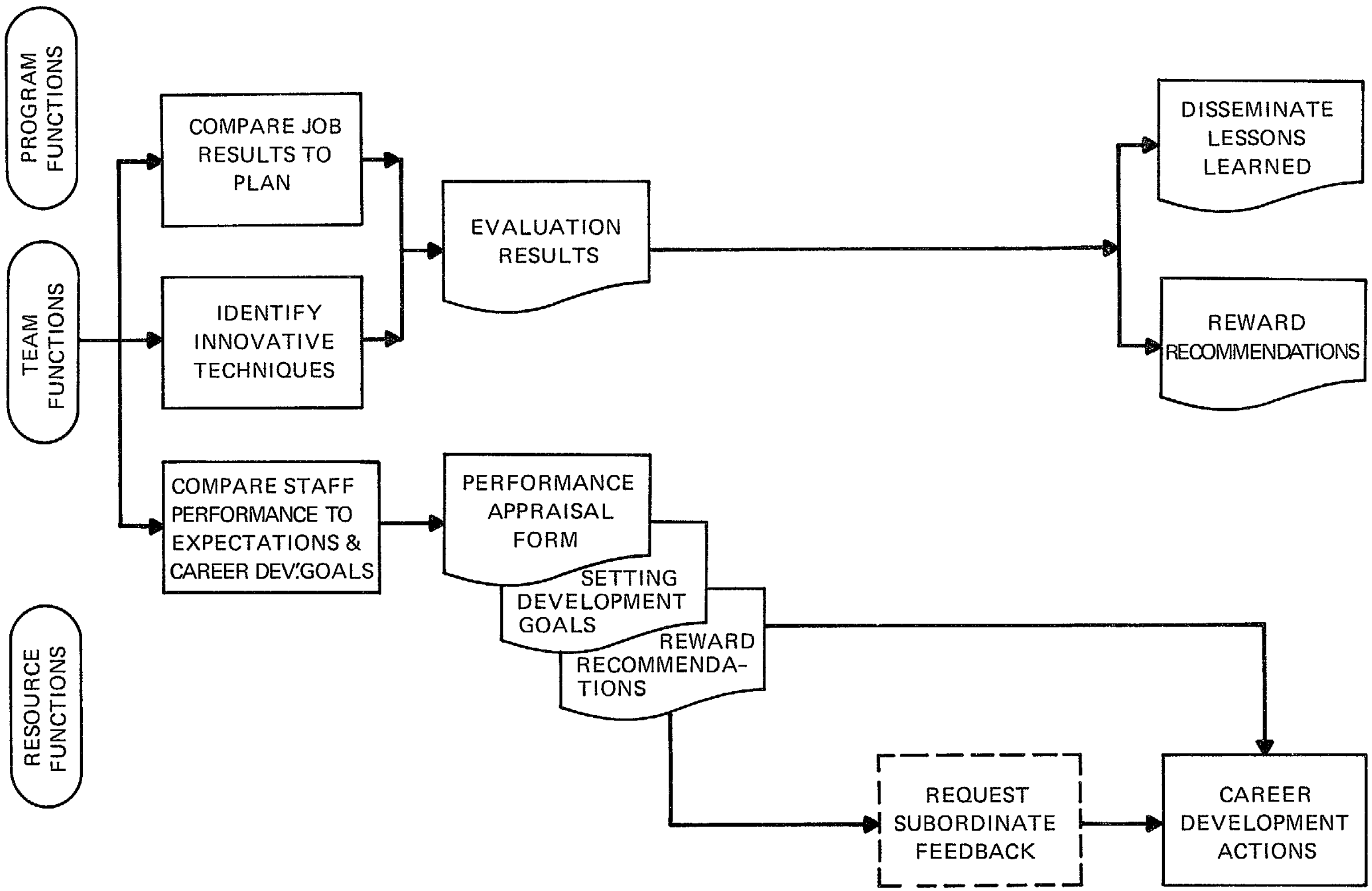
--Team members receive constructive feedback which facilitates self-evaluation and developmental redirection, if necessary.

--Management receives input which enables it to fulfill its annual appraisal, career counseling, and staff development responsibilities.

--Superior performance to be rewarded and staff development needs to be addressed are identified.

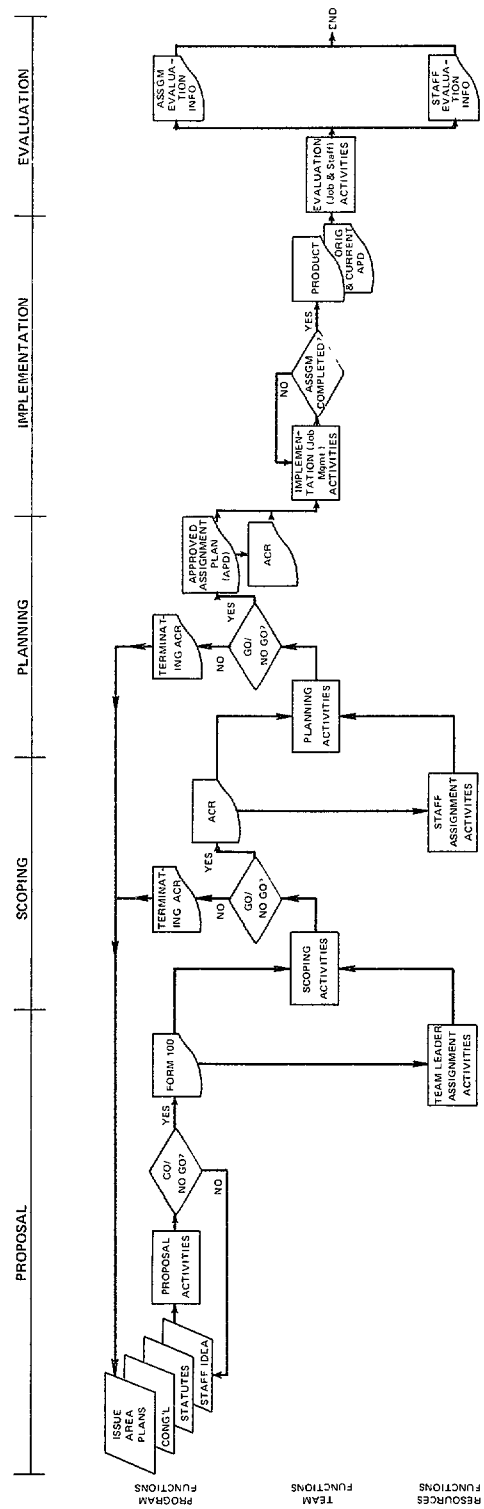
Figure 6-2 summarizes the activities associated with the evaluation phase. Once this phase has been completed, the assignment is also completed.

FIGURE 6-2 EVALUATION PHASE FLOW CHART



APPENDIX I
PPMA FLOW CHART

PROJECT PLANNING AND MANAGEMENT APPROACH OVERALL FLOWCHART



Decisions and outputs required under each phase of PPMA from accountable decisions makers

December 1978

APPENDIX II
ASSIGNMENT DOCUMENTATION

This appendix contains a listing of documentation associated with PPMA. Documentation in good project planning and management is intended to be used as a tool by the team leader and members. These tools serve three basic purposes including:

--Promoting the rigorous thinking process necessary to analyze a job's requirements, strategy, and complexities to fully develop the "how-to's" of achieving the assignment's objectives.

--Promoting clear communication for reporting to the team director and for identifying for the team members the assignment's objectives, requirements, approach and individual responsibilities.

--Capturing on paper the approach developed so that it can be used as an ongoing reference and road map for the team leader to control the job.

The extent of documentation required must be evaluated by the team leader in each specific situtation. It will vary from job to job depending on the size, complexity, and so on.

ASSIGNMENT DOCUMENTATION

The following listing describes those documents which can be used in managing an assignment under PPMA.

Title	Purpose	Reference
Assignment Authorization (GAO Form 100)	assignment justification for resource expenditures	CAM I, Chap 17 PSR
Team Agreement	identifies resource commitments	Divisional Imple-menation plans
Assignment Change Request (ACR's)	provides justification for expanding, redirecting, or ending an assignment	PPMA Appendix III
--Assignment Profile --Segment/Persons Responsible/Major Milestones --Work Program (Audit Guidelines) --Task Flow Analysis Chart --Organization Chart --Time Phased Work Plan (task flow) --Preliminary Report Digest --Evaluation Data		CAM I, Chap. 18
Status Reports		
Progress Reports	documents and conveys assign-ment progress for specific time periods	CAM I, Chap. 17
Trip Reports	documents and conveys results of job travels	CAM I, Chap. 17
MDS-1 "Report of Activite Assign-ment for Biweekly Period Ended"	a basic report prepared for each assignment to give the team leader or audit manager current information on the total status of the job	MDS Reports Manual
Staff Time Control Sneet	provides the team an analysis of time charges by task	Appendix II Page 4

AMDS-20 "report of Assignments"	A Regional report for team leaders which at a minimum reflects milestone data, staff days needed, staff days expended, and staff release dates	AMDS - Users Manual
Staff Appraisal Form	provides constructive assessment of staff member's job performance	Under development by OMPS

It should be noted that detailed audit guidelines are replaced by the Work Program, the Time Phased Work Plan, the Staff Time Control Sheet and the Evaluation Data sections of the Assignment Plan.

STAFF TIME CONTROL SHEET - BY SEGMENT

Job Title: Review of DOD Container Shipments Overseas Job Code: ______

Segment: Optimality of Container Configurations Used by DOD

Total Budget: 70 Segment Leader: J. Jones

Tasks/Subtasks	Budget	Period Ending				Period Ending			
		This Period	To Date	To Comp	(Over) Under	This Period	To Date	To Comp	(Over) Under
1. Identify methods used by DOD to determine and satisfy container requirements									
1.1	2								
1.2	1								
1.3	2								
1.4	5								
TOTAL TIME									

The time control sheet provides the team an analysis of time charges by task.

APPENDIX III
ASSIGNMENT PLAN

This appendix contains a suggested format for an assignment plan. The assignment plan provides the team members and management with clearly defined objectives, approaches, and intended results; assignment responsibilities and staff development objectives; a basis for monitoring progress; and job costs.

The assignment plan also provides the team leader with a reference point to evaluate the value of tasks, judge whether target dates are realistic, and identify slippage early in the project. The assignment plan should include an overview, a task flow analysis (see appendix IV for examples), an organization chart on larger assignments, and staff and assignment performance evaluations.

ASSIGNMENT PLANNING DOCUMENT

PART I ASSIGNMENT PROFILE

CODE: ____________________

JOB TITLE: ____________________

ISSUES: ____________________

This section should include description of the issues to be developed during the assignment

CUSTOMER: ____________________

Indicate who the customer is

TIMING: ____________________

Indicate when we plan to deliver the product

COST: ____________________

Show the estimated cost of the assignment in terms of staff-days, travel, and other costs

Part I of the Assignment Planning Document provides an overview of the assignment in terms of the five decision components.

COMMUNICATION METHOD: ____________________

Indicate how the assignment results will be communicated to the customer i.e. briefing testimony, statement of facts, letter, or report

PROGRAM MANAGER(S): ____________________

TEAM LEADER: ____________________

STAFF: ____________________

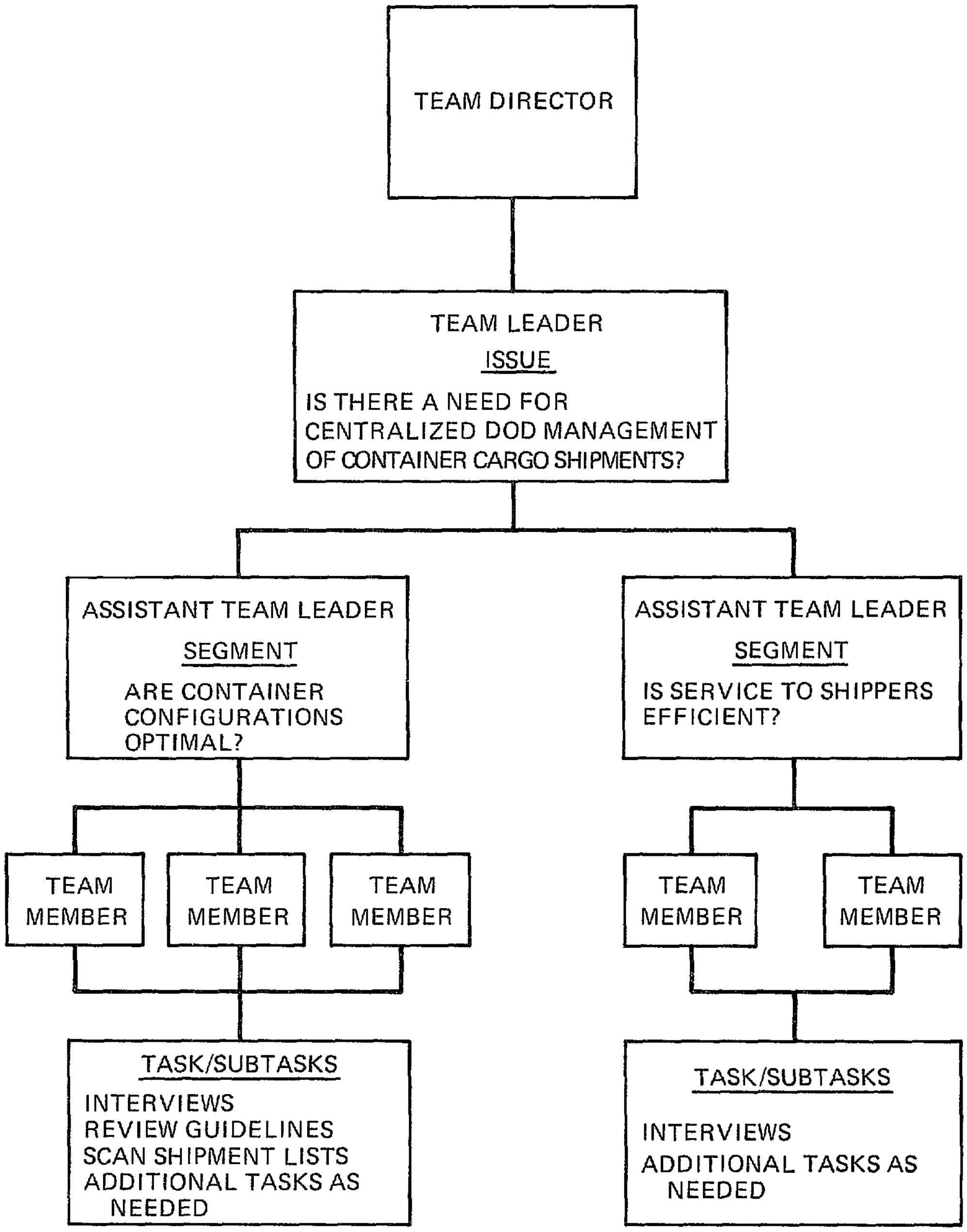
PART II SEGMENTS PERSONS/RESPONSIBLE/MAJOR MILESTONES

SEGMENTS	PERSON RESPONSIBLE	MILESTONE DATE
LIST MAJOR	SHOW PERSON	SHOW MILESTONE
ASSIGNMENT	RESPONSIBLE	DATE
SEGMENTS		

Part II establishes accountability for individual assignment segments.

EXHIBIT

ORGANIZATIONAL CHART FOR REVIEW OF
DOD CONTAINER SHIPMENTS OVERSEAS



The organization chart establishes lines of responsibility by issues and subissues. It should be considered for use on larger jobs.

PART III WORK PROGRAM

This section should contain the work program or audit plan developed during the planning phase as well as a time phased graphical presentation of this program. As shown below both of these documents should be organized around the issues and major segments to be developed.

WORK PROGRAM

ISSUE: Describe the issue to be developed.

SUB-ISSUE (SEGMENT): Describe the purpose of the segment. Indicate the number, grade level and skills of staff needed.

Indicate the total staff-days needed to complete the segment.

Est. Start	Est. Comp.	Tasks		Person Responsible	Est. Staff Days	Notes
		Task 1:	Brief description of task			
		1.1 1.2 1.3	Describe sub-tasks			
		Task 2:	Same as above			
		Task 3:				

Part III details the assignment tasks, resource requirements and target dates.

TASK PHASING CHART

SEGMENTS/TASKS	7/15	7/22	7/29	8/05	8/12	8/19	8/28	9/02	9/09	9/16	9/23	END	EST. STAFF DAYS
SEGMENT I: Is DOD using containers?													
Task 1: Identify methods used	XXXX	XXXX	XXXX										10
Task 2: Evaluate each method			XXXX	XXXX									15
Task 3: Evaluate alternative methods				XXXX	XXXX	XXXX	XXXX						25
Task 4: Summarize findings					XXXX	XXXX	XXXX	XXXX					10
SEGMENT II: Are container configurations optimal?													
Task 5: What configuration process used?			XXXX	XXXX	XXXX								30
Task 6: Determine effectiveness					XXXX	XXXX	XXXX	XXXX					40
Task 7: Summarize findings						XXXX	XXXX	XXXX	XXXX				20
Task 8: Outline report					XXXX	XXXX							10
Task 9: Draft report								XXXX	XXXX	XXXX			40
KEY MILESTONES				Start report outline		Review findings					First draft		

PART IV: EVALUATION DATA

This section of the work plan should contain the information needed to assess assignment results and compare task completion dates with target dates. This will provide a concise summary of why the job was completed as it was, and will permit the team to learn more from its experiences.

Part IV is an assessment of the overall assignment performance in terms of the five decision components. This assessment would include comparing actual results with what was planned. The reasons for any significant variances should be noted, as well as the impact on the assignment. This section cannot be completed until the assignment is finished.

APPENDIX IV
TASK FLOW ANALYSIS

This appendix contains a simplified task flow chart that links together the sequence of key assignment tasks, decisions, inputs and outputs. It provides the team leader and members with a graphic presentation of the assignment, highlights those tasks most important to the assignment, and serves as a basis for monitoring assignment progress.

This appendix also contains an example of a network analysis using the Critical Path Method (CPM) technique. The intent of this technique is to visually display concurrent and consecutive tasks and to identify the critical path. This involves a three-step process: (1) determine the milestones and tasks required to meet the assignment objectives and estimate the time needed to complete each task; (2) identify the task sequence--that is, the tasks that must be completed before others can begin; and (3) evaluate each path to determine which requires the longest period of time--this is the critical path.

PART IV A ASSIGNMENT EVALUATION

ISSUES:

PLANNED____

ACTUAL____

REASONS FOR VARIANCE______________________________

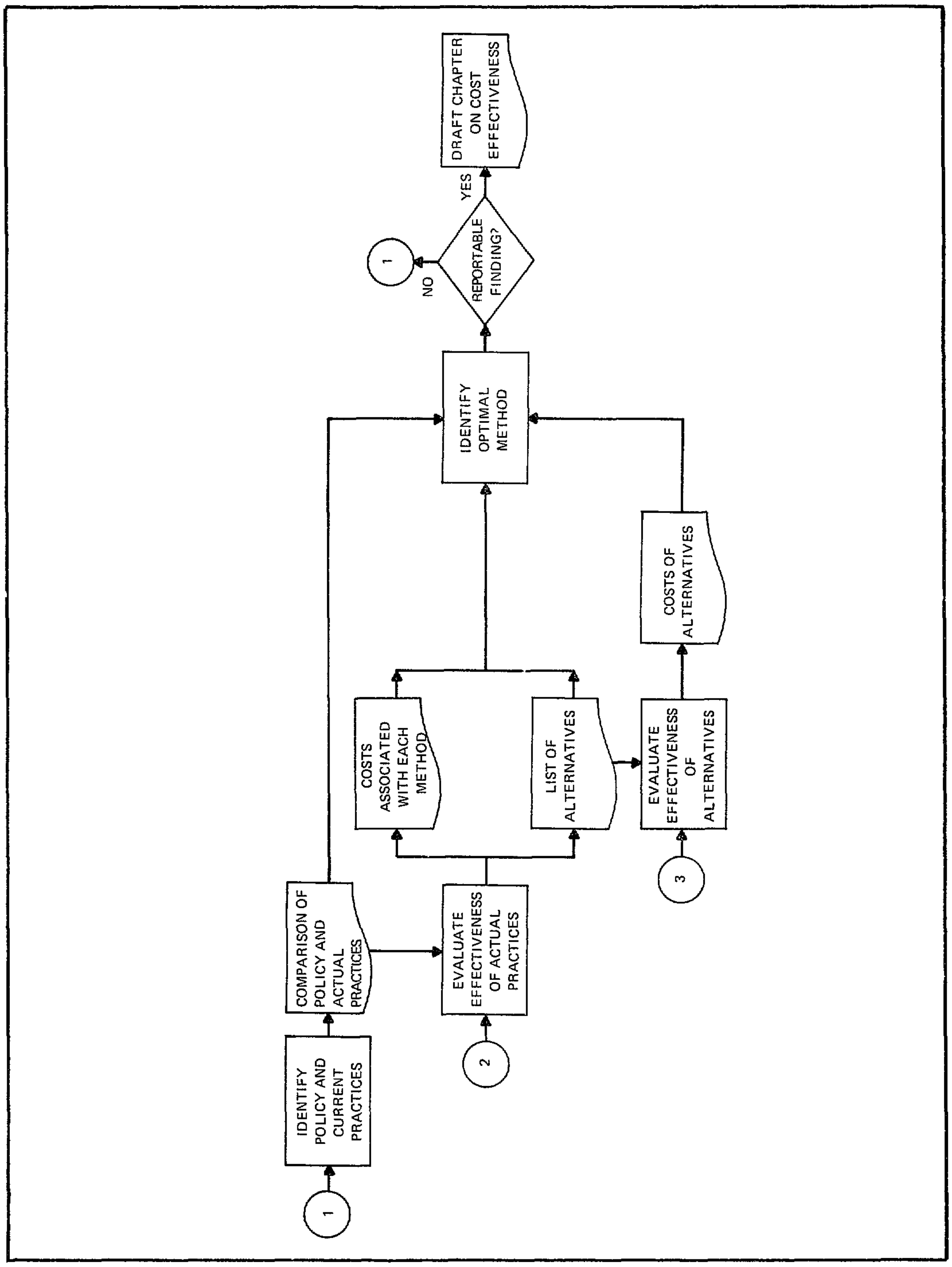
IMPACT ON ASSIGNMENT______________________________

PREVENTIVE MEASURES______________________________

INNOVATIVE APPROACHES_____________________________

Part IV, section A is an assessment of the assignment performance in terms of the five decision components. A similar evaluation would be prepared for each of the remaining four decision components--customer, timing, cost and communication method.

SIMPLIFIED TASK FLOW CHART



The task flow chart shows the sequence of assignment tasks.

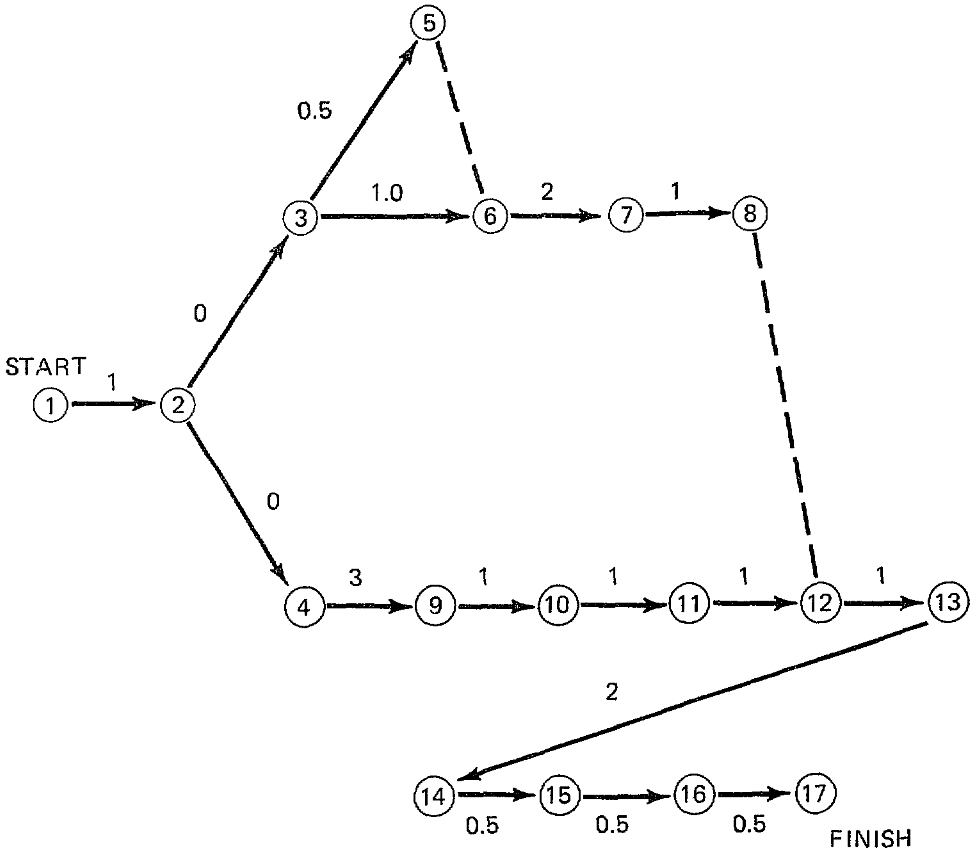
CRITICAL PATH METHOD

EXHIBIT USE OF CPM TECHNIQUE TO ORGANIZE ASSIGNMENT TASKS

		Event (Milestone)	Activity (task)	Duration in calendar months
PLANNING	1.	Assignment started with general plan developed in scoping		
	2.	Overall detailed plan finalized and approved	1 - 2	1.0
IMPLEMENTATION	3.	Site 1 implementation started	2 - 3	0.0
	4.	Site 2 implementation started	2 - 4	0.0
	5.	Site 1/Task 1 completed	3 - 5	0.5
	6.	Site 1/Task 2 completed	3 - 6	1.0
	7.	Site 1/Task 3 completed	6 - 7	2.0
	8.	Site 1 product generated	7 - 8	1.0
	9.	Site 2/Task 1 completed	4 - 9	3.0
	10.	Site 2/Task 2 completed	9 - 10	1.0
	11.	Site 2 product generated	10 - 11	1.0
	12.	Product segments consolidated and product finalized	11 - 12	1.0
	13.	Draft sent to agency for comments	12 - 13	1.0
	14.	Agency comments received	13 - 14	2.0
	15.	Product sent to final processing	14 - 15	0.5
	16.	Report issues	15 - 16	0.5
	17.	Assignment completed	16 - 17	0.5

CRITICAL PATH METHOD

CPM DIAGRAM



CALENDAR TIME PER PATH:

1 → 2 → 3 → 5 → 6 → 7 → 8 → 12 → . . . → 17	= 9.0 mo.
1 → 2 → 3 → 6 → . . . → 12 → . . . → 17	= 9.5 mo.
1 → 2 → 4 → 9 → . . . → 17	= 11.5 mo.*

*THIS IS THE CRITICAL PATH FOR THIS ASSIGNMENT. ANY SLIPPAGE ALONG THIS PATH WILL IMPACT ON THE PRODUCT DELIVERY DATE. THE SITE 1 WORK, ON THE OTHER HAND, COULD SLIP UP TO 2.0 MONTHS AFTER COMPLETION OF THE PLAN, WITHOUT AFFECTING PRODUCT DELIVERY.

GLOSSARY

assignment plan	A document establishing guidelines and parameters to successfully manage and control an assignment. It also provides a well-conceived approach for developing assignment issues and replaces the development and use of audit guidelines.
CPM (critical path method)	A time oriented planning and control device used for analyzing a job in terms of activities and events that must be sequentially completed to achieve a goal or objective. The activities are component tasks that take time, and events are points in time that indicate some activities have been completed and others may begin.
customer	The probable user of our work, normally a specific individual or group, such as a member of Congress or a congressional committee. However, the customer could be the entire Congress, Federal or State agencies, local governments, or some other general audience.
decision components	Five critical elements in PPMA which should be dealt with in each phase to assure project efficiency and effectiveness. They are issues, customer, timing, cost, and communication method.
dynamic planning	A technique designed to emphasize vigorous front-end evaluation and decisionmaking concerning chosen and alternative job paths. In addition, it provides for ongoing job monitoring and when appropriate or necessary encourages job redirecting.

issue	The focus of an assignment. Quite often it is stated in terms of a statement or a condition. Normally, an issue(s) would be translated into an assignment's objectives.
known unknowns	Particular components directly or indirectly related to performing known tasks which may not be estimatable when establishing resource requirements. Examples include the ease of access to records, speed with which agencies may provide comments, etc.
management	Individuals at the team director level or higher who are responsible for planning and programming assignments and/or managing resources.
matrix arrangement	A job planning approach which often occurs as task assignments are being finalized. Under this approach team members responsible for specific segments are also assigned tasks under other segments because of their geographic location, specific skills, or to accomplish better workload distribution within the team. This retains individual accountability for results by segment and also provides flexibility in tasking to enhance the efficiency and effectiveness with which results are achieved.
milestones	Significant points in the development of a project where specific tasks or subtasks should be completed or evaluated and others should begin. It is a point in a job when a meaningful evaluation can be made.

operational planning	A process occuring after strategic planning in which the identified lines-of-effort are segmented and scheduled into assignments by priority. The assignments are further broken down delineating, (1) what the objectives are, (2) who the customer is, (3) who will do the work, and (4) where the work will be done. Depending on the level of detail of this process, the outputs of the proposal phase may have been accomplished by the end of operational planning.
participative job planning	A management approach where, to the extent possible each team member actively participates in developing general project plans, and specifically the "how" of doing his/her work.
performance accountability	With the advent of a clearly defined assignment plan each team member should assume responsibility for completing specific tasks, be given the resources and authority needed, and be held accountable for the results.
performance expectations	A joint understanding between a staff member and his superior of what is due, proper, and necessary in carrying out the staff member's responsibilities.
PERT (program evaluation review technique)	A time oriented planning and control device similar to CPM. However, whereas CPM develops only one central measure of completion time for a job, PERT also develops an optimistic and pessimistic estimate.

program functions	Relates to the management of the technical aspects of an assignment, including authorizing an assignment, deciding if an assignment is to continue, deciding where work should be performed, and approving job plans. These functions would be carried out at the team director level or higher.
resource functions	Relates to the management of staff resources including assigning staff to jobs, ensuring staff development is enhanced and determining that staff is effectively used.
strategic planning	A process in which divisions, with OPP approval, select issue areas, prepare program plans, identify piority lines-of-effort, and develop line-of-effort statements.
subordinate feedback	Constructive evaluation by subordinate team members of supervisory team members with respect to staff development.
task analysis	A dynamic planning process which identifies the steps needed to do the job and the resources required to get it done.
task flow analysis	Deciding the best sequencing for performing tasks.
team functions	Relates to those activities carried out by the team leader and team members during an assignment. They are necessary to meet the assignment objectives and report the results.
unknown unknowns	Particular components directly or indirectly related to performing tasks which are not known when establishing resource requirements. Examples include termination of key staff, new legislation, or agency directives which change the identified issues, etc.

variance analysis	A process of comparing actual results to planned, to determine the reasons for deviations and to assess their impact on meeting assignment objectives.

ACKNOWLEDGEMENTS

The team responsible for the development of this guide represented a cross section of GAO staff. These individuals included:

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The effort would not have been successful without many others who contributed to the guide through participation in developmental workshops, testing of PPMA concepts, comparison of other systems, and independent reviews of the materials. The Office of Publishing Services also had a key role by providing outstanding support services during the guide's development. Especially noteworthy were the contributions made by Arthur LaMay, Cynthia Ryan, Wendy Mitchell and Deborah Robey.

☆ U.S. GOVERNMENT PRINTING OFFICE · 1980-620-386/127