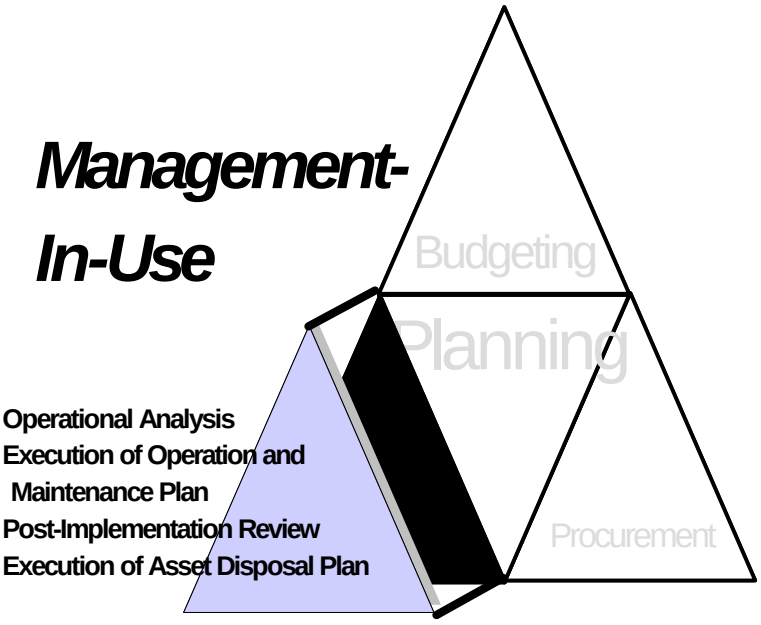
IV. MANAGEMENT-IN-USE PHASE

Introduction. The Management-In-Use Phase includes the Steps an agency should take to manage and evaluate the continued viability of an acquired capital asset as part of the agency portfolio.



STEP IV.1. OPERATIONAL ANALYSIS

Agencies should establish a system to measure the performance and cost of an operational asset against the baseline established in the Planning Phase. The tracking method is called operational analysis. This information will allow agency resource managers to optimize the performance of capital assets. Additionally, operational analysis may indicate the need for the acquisition of a new capital asset. The system established should have the capability to provided simple, easy to understand information that can be used by managers to make sound management decisions.

Analysis of operations can be used to minimize the ***cost of asset ownership*** while simultaneously improving the function the asset performs. The ***cost of asset ownership*** is defined as the total of all costs incurred by the owners and users to obtain the benefits of a given acquisition. While great emphasis is often placed on meeting the budget, scope, and schedule for the acquisition of a capital asset, these are only a fraction of the asset's total life-cycle costs. Ownership costs, such as operations, maintenance, including service contracts, and disposition, can easily consume as much as 80 percent of the total life-cycle costs. A disciplined assessment of the condition and usability of the asset, and of trends over time, should be included. Operations is a critical area where improved effectiveness and productivity can have the greatest net measurable benefit in cost, performance, and mission accomplishment. If life-cycle cost criteria are given serious consideration during the Planning, Budgeting, and Procurement Phases, total life-cycle costs can be greatly reduced.

Once an asset has been acquired and is in use, operational analysis should take place in accordance with a schedule of fixed milestones or on a cyclical basis. This should be a formal analysis to determine whether the asset is meeting program objectives and the needs of the owners and users, as well as performing within baseline cost, schedule, and performance goals. An automated system

could flag the need, on an exception basis, to view the status of a capital asset before it becomes a problem. Figure 11 describes operational analysis at the Department of Energy.

Operational analysis may indicate a need to redesign or modify an asset if previously undetected faults in the design, construction, or installation are discovered during the course of operations, if O&M costs are higher than anticipated, or if the asset fails to meet program requirements. Such analysis may also help to identify where faulty operations are eroding the asset's ability to perform its function.

Figure 11. Operational Analysis at the Department of Energy

The Department of Energy (DOE) has established an operations assessment program to formalize and standardize a method by which the safety and effectiveness of facility operations are evaluated. The program requires Operations offices to schedule and perform operations assessments at six month intervals. Assessments focus on identifying operational weaknesses requiring management corrective action rather than on identifying lists of individual deficiencies. Corrective actions are tracked and implemented, and the results of assessments are reported to line managers.

This program has resulted in strong improvement in operations oversight and operational improvements at a number of the operations offices, including changes in nuclear fuel handling procedures; development of standardized operations policies and procedures; decrease in design deficiencies; development of complex-wide well-drilling procedures using lessons learned from all the sites; more efficient and effective lockout/tagout systems; better control of equipment and system status; and improved radiological controls. This program allows DOE managers to target improvement actions and more effectively utilize scarce resources.

Operational analysis will lose much of its value-added benefits to the capital programming process if an opportunity to make a course correction is missed due to inattention to early warning indicators. Analysis of such indicators may show a need to apply an improvement methodology, such as value management, to identify if there are better ways for the asset to meet its life-cycle cost and performance goals. Operational indicators for a given asset may include any of the following:

- effectiveness
- efficiency
- productivity
- availability
- energy usage
- reliability
- maintainability
- security

STEP IV.2. EXECUTION OF OPERATION AND MAINTENANCE PLAN

If not properly maintained, a capital asset's useful life can be shortened dramatically, thereby reducing the return on the taxpayers' investment. Day-to-day operation and maintenance of any asset must be carefully planned. In addition, the projected costs associated with the day-to-day operation and maintenance of the asset must be factored into the asset's procurement -- to make a best value

determination when selecting between competing proposals -- and tracked throughout its life cycle (see *Planning Phase,* Steps I.5. and I.6.).

The elements of an O&M plan include:

- For scheduled preventive maintenance;

  Sign-offs to instill personal responsibility;

  Training of user staff; and

  Tracking of labor and material costs.

- For predictable corrective maintenance;

  Budget expenditure for minor maintenance and repair; and

  Maintenance contracts.

STEP IV.3. POST-IMPLEMENTATION REVIEW (PIR)

Whereas operational analysis is a control mechanism during the operational life cycle of an asset, PIR is a diagnostic tool to evaluate the overall effectiveness of the agency's capital planning and acquisition *process.* The primary objective of a PIR is to identify whether the asset is performing as planned, ensure continual improvement of an agency's capital programming process based on lessons learned, and minimize the risk of repeating past mistakes. Where agencies have multiple requirements for reviews, one system to consolidate all PIRs should be established.

Three to twelve months after a new asset becomes operational, the planning and procurement process should be evaluated to determine whether they accurately predicted the benefits to be derived from the new asset. These benefits could include lowered cost, reduced cycle time, increased quality, additional quantity of services, or increased speed of service delivery. Such an assessment is done by conducting project PIRs that compare actual results against planned cost, returns, and risks. The PIR results are used to calculate a final return on investment, determine whether any additional project modifications may be necessary, and provide "lessons learned" input for changes to the organization's capital programming processes and strategy. Agencies should be able to document and report on the performance benefits achieved by their investments and explain how those benefits support the accomplishment of agency goals. Specifically, there should be mechanisms in place that take the lessons learned from the PIR and use them to update the Planning Phase decision criteria and Procurement and Management-In-Use processes.

The PIR should be conducted by individuals not directly involved in the acquisition of the asset. The PIR team can be composed of owners and users of the asset or other personnel and consultants.

Factors to be considered in the PIR include:

Customer/User Satisfaction

- Partnership/involvement
- Business process support
- Investment performance
- Usage

Strategic Impact and Effectiveness

- System impact and effectiveness
- Alignment with mission goals
- Portfolio analysis and management
- Cost savings

Internal Business

- Project performance
- Infrastructure availability
- Standards and compliance
- Maintenance
- Security issues and internal controls
- Evaluations (accuracy, timeliness, adequacy of information)

Innovation

- Workforce competency
- Advanced technology use
- Methodology expertise
- Employee satisfaction/retention
- Program quality

To ensure that each project is evaluated consistently, the organization should have a documented methodology for conducting these reviews. The methodology chosen must be in alignment with the organization's planning process and must build on the organization's memory. The organization should determine whether there may be better cost, benefit, and risk measures that could be established that would improve the monitoring of future projects.

STEP IV. 4. EXECUTION OF ASSET DISPOSAL PLAN

Disposal of an asset is the culmination of the processes discussed earlier in this Guide. Projected costs of asset disposal are critical elements in the planning and budgeting for asset acquisition. The decision to dispose of an asset may be triggered by any number of events; most will be part of a systematic plan formulated in advance that integrates the asset into the agency's broader capital resource management plan. Beginning with mission analysis and planning for the purpose of matching capabilities to mission requirements, and continuing with ongoing operational analysis, criteria are established and monitored to determine how well an asset is performing. At any time that the asset becomes uneconomical to keep in service or fails to meet performance criteria, the agency should critically assess the asset to determine whether it should be retired or replaced.

Once the decision to dispose is made, a number of issues must be considered, including how to remove the asset from service, planning for transition to a replacement if required, redeployment elsewhere in the agency where it may continue to provide a benefit greater than the cost, or final removal of the asset from the agency's property inventory. Depending on the type of asset, disposal may be as simple as transferring the item to another agency, turning it over to GSA as excess, or demolishing it and selling it as scrap. Disposal of complex assets or systems may involve a multi-year process requiring significant effort and funding to execute. For example, when the FAA replaces a

navigation system for commercial and private air traffic, it must communicate the details of the plan to thousands of system users worldwide and ensure that the transition to the new system is seamless, timely, and coordinated. Figure 12 discusses disposal of an IT system.

The procedure for disposing of an asset will depend upon the type of asset, as well as existing agency guidelines and any laws and regulations governing the disposal of that particular asset (e.g., E.O. 12999, authorizing federal agencies to donate excess computers and related peripheral tools directly to schools). Hazardous material disposal would most likely be performed by a specialized contractor following environmental laws monitored by EPA, while disposing of an office building might be carried out by GSA following real property regulations. In all cases, agency property specialists, guided by internal policy and applicable laws and regulations, should work closely with agency executives to ensure cost-effective and timely asset disposal.

Figure 12. Example of Asset Disposal

Disposal of an IT system typically requires the phase out of obsolete equipment and a transition to a new system. This process can take years to accomplish and requires extensive planning and coordination. For IT systems, the transition actually begins early in the planning stages for the new system. Acquisition planners have to work with prospective contractors to establish timeliness and devise a transition plan. After the new system has been acquired, developed, and tested, deployment takes place according to the plan developed early in the acquisition phase. The elements of the transition may include:

- converting data from the old system to the new;
- operating both the old and new systems concurrently;
- validating that the new system has converted old data properly;
- ensuring users are trained on the new equipment and software;
- keeping the customers informed of transition progress; and
- outlining these actions and agreements in a memorandum of understanding, signed by representatives from all parties affected by the conversion.

A select group of users will test the system using real data and real situations to identify bugs and develop solutions. Any problems that occur will be documented in a "lessons learned" report and be resolved before the final, organization-wide transition to the new system. The transition team completes all system integration and testing to ensure that the new IT environment meets design requirements, and that office workloads will fit into the new environment as planned and perform to the users satisfaction. Upon formal acceptance, the old system is de-installed and final property disposal actions are executed as required.