

PROJECT PROCUREMENT MANAGEMENT

12

Project Procurement Management includes the processes required to acquire goods and services from outside the performing organization. For simplicity, goods and services, whether one or many, will generally be referred to as a “product.” **Figure 12-1** provides an overview of the following major processes:

- 12.1 Procurement Planning**—determining what to procure and when.
- 12.2 Solicitation Planning**—documenting product requirements and identifying potential sources.
- 12.3 Solicitation**—obtaining quotations, bids, offers, or proposals as appropriate.
- 12.4 Source Selection**—choosing from among potential sellers.
- 12.5 Contract Administration**—managing the relationship with the seller.
- 12.6 Contract Close-out**—completion and settlement of the contract, including resolution of any open items.

These processes interact with each other and with the processes in the other knowledge areas as well. Each process may involve effort from one or more individuals or groups of individuals based on the needs of the project. Although the processes are presented here as discrete elements with well-defined interfaces, in practice they may overlap and interact in ways not detailed here. Process interactions are discussed in detail in Chapter 3, Project Management Processes.

Project Procurement Management is discussed from the perspective of the buyer in the buyer-seller relationship. The buyer-seller relationship can exist at many levels on one project. Depending on the application area, the seller may be called a contractor, a vendor, or a supplier.

The *seller* will typically manage their work as a project. In such cases:

- The *buyer* becomes the customer and is thus a key stakeholder for the seller.
- The *seller's* project management team must be concerned with all the processes of project management, not just with those of this knowledge area.
- The terms and conditions of the contract become a key input to many of the seller's processes. The contract may actually contain the input (e.g., major deliverables, key milestones, cost objectives) or it may limit the project team's options (e.g., buyer approval of staffing decisions is often required on design projects).

This chapter assumes that the seller is external to the performing organization. Most of the discussion, however, is equally applicable to *formal* agreements entered into with other units of the performing organization. When informal agreements are involved, the processes described in Project Human Resource Management, Chapter 9, and Project Communications Management, Chapter 10, are more likely to apply.

12.1
Procurement Planning

12.2
Solicitation Planning

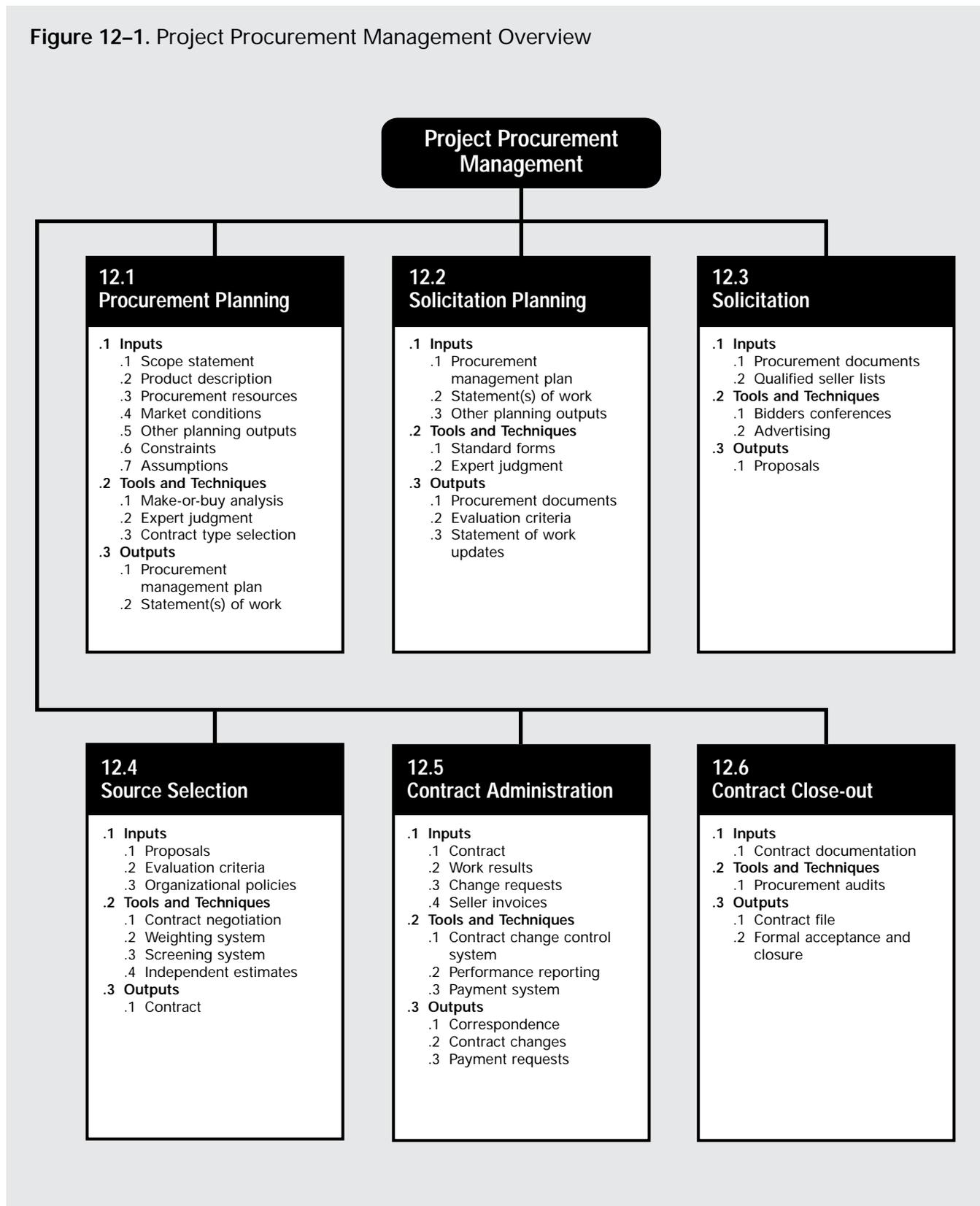
12.3
Solicitation

12.4
Source Selection

12.5
Contract Administration

12.6
Contract Close-out

Figure 12-1. Project Procurement Management Overview



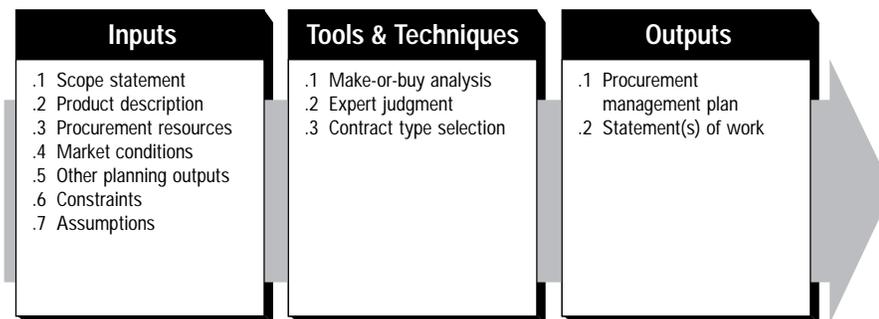
12.1 PROCUREMENT PLANNING

Procurement planning is the process of identifying which project needs can be best met by procuring products or services outside the project organization. It involves consideration of whether to procure, how to procure, what to procure, how much to procure, and when to procure it.

When the project obtains products and services from outside the performing organization, the processes from solicitation planning (Section 12.2) through contract close-out (Section 12.6) would be performed once for each product or service item. The project management team should seek support from specialists in the disciplines of contracting and procurement when needed.

When the project does not obtain products and services from outside the performing organization, the processes from solicitation planning (Section 12.2) through contract close-out (Section 12.6) would *not* be performed. This often occurs on research and development projects when the performing organization is reluctant to share project technology, and on many smaller, in-house projects when the cost of finding and managing an external resource may exceed the potential savings.

Procurement planning should also include consideration of potential subcontracts, particularly if the buyer wishes to exercise some degree of influence or control over subcontracting decisions.



12.1.1 Inputs to Procurement Planning

- .1 **Scope statement.** The scope statement (see Section 5.2.3.1) describes the current project boundaries. It provides important information about project needs and strategies that must be considered during procurement planning.
- .2 **Product description.** The description of the product of the project (described in Section 5.1.1.1) provides important information about any technical issues or concerns that would need to be considered during procurement planning.

The product description is generally broader than a statement of work. A product description describes the ultimate end-product of the project; a statement of work (discussed in Section 12.1.3.2) describes the portion of that product to be provided by a seller to the project. However, if the performing organization chooses to procure the entire product, the distinction between the two terms becomes moot.

- .3 **Procurement resources.** If the performing organization does not have a formal contracting group, the project team will have to supply both the resources and the expertise to support project procurement activities.
- .4 **Market conditions.** The procurement planning process must consider what products and services are available in the marketplace, from whom, and under what terms and conditions.

- .5 **Other planning outputs.** To the extent that other planning outputs are available, they must be considered during procurement planning. Other planning outputs which must often be considered include preliminary cost and schedule estimates, quality management plans, cash flow projections, the work breakdown structure, identified risks, and planned staffing.
- .6 **Constraints.** Constraints are factors that limit the buyer's options. One of the most common constraints for many projects is funds availability.
- .7 **Assumptions.** Assumptions are factors that, for planning purposes, will be considered to be true, real, or certain.

12.1.2 Tools and Techniques for Procurement Planning

- .1 **Make-or-buy analysis.** This is a general management technique which can be used to determine whether a particular product can be produced cost-effectively by the performing organization. Both sides of the analysis include indirect as well as direct costs. For example, the "buy" side of the analysis should include both the actual out-of-pocket cost to purchase the product as well as the indirect costs of managing the purchasing process.

A make-or-buy analysis must also reflect the perspective of the performing organization as well as the immediate needs of the project. For example, purchasing a capital item (anything from a construction crane to a personal computer) rather than renting it is seldom cost effective. However, if the performing organization has an ongoing need for the item, the portion of the purchase cost allocated to the project may be less than the cost of the rental.

- .2 **Expert judgment.** Expert judgment will often be required to assess the inputs to this process. Such expertise may be provided by any group or individual with specialized knowledge or training and is available from many sources including:
 - Other units within the performing organization.
 - Consultants.
 - Professional and technical associations.
 - Industry groups.
- .3 **Contract type selection.** Different types of contracts are more or less appropriate for different types of purchases. Contracts generally fall into one of three broad categories:
 - Fixed price or lump sum contracts—this category of contract involves a fixed total price for a well-defined product. To the extent that the product is not well-defined, both the buyer and seller are at risk—the buyer may not receive the desired product or the seller may need to incur additional costs in order to provide it. Fixed price contracts may also include incentives for meeting or exceeding selected project objectives such as schedule targets.
 - Cost reimbursable contracts—this category of contract involves payment (reimbursement) to the seller for its actual costs. Costs are usually classified as *direct* costs or *indirect* costs. Direct costs are costs incurred for the exclusive benefit of the project (e.g., salaries of full-time project staff). Indirect costs, also called overhead costs, are costs allocated to the project by the performing organization as a cost of doing business (e.g., salaries of corporate executives). Indirect costs are usually calculated as a percentage of direct costs. Cost reimbursable contracts often include incentives for meeting or exceeding selected project objectives such as schedule targets or total cost.
 - Unit price contracts—the seller is paid a preset amount per unit of service (e.g., \$70 per hour for professional services or \$1.08 per cubic yard of earth removed), and the total value of the contract is a function of the quantities needed to complete the work.

12.1.3 Outputs from Procurement Planning

.1 Procurement management plan. The procurement management plan should describe how the remaining procurement processes (from solicitation planning through contract close-out) will be managed. For example:

- What types of contracts will be used?
- If independent estimates will be needed as evaluation criteria, who will prepare them and when?
- If the performing organization has a procurement department, what actions can the project management team take on its own?
- If standardized procurement documents are needed, where can they be found?
- How will multiple providers be managed?
- How will procurement be coordinated with other project aspects such as scheduling and performance reporting?

A procurement management plan may be formal or informal, highly detailed or broadly framed, based on the needs of the project. It is a subsidiary element of the overall project plan described in Section 4.1, Project Plan Development.

.2 Statement(s) of work. The statement of work (SOW) describes the procurement item in sufficient detail to allow prospective sellers to determine if they are capable of providing the item. “Sufficient detail” may vary based on the nature of the item, the needs of the buyer, or the expected contract form.

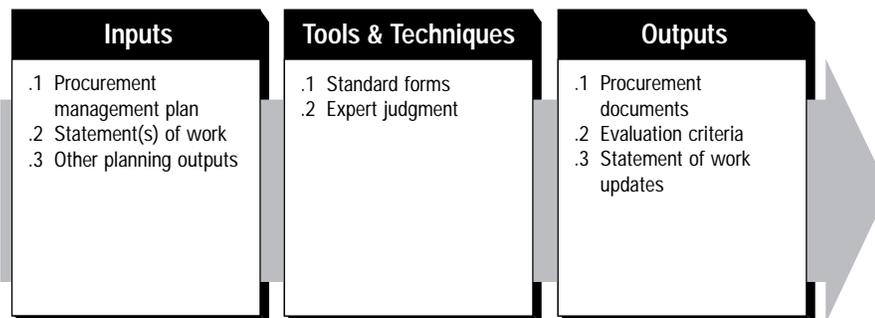
Some application areas recognize different types of SOW. For example, in some government jurisdictions, the term SOW is reserved for a procurement item that is a clearly specified product or service, and the term Statement of Requirements (SOR) is used for a procurement item that is presented as a problem to be solved.

The statement of work may be revised and refined as it moves through the procurement process. For example, a prospective seller may suggest a more efficient approach or a less costly product than that originally specified. Each individual procurement item requires a separate statement of work. However, multiple products or services may be grouped as one procurement item with a single SOW

The statement of work should be as clear, as complete, and as concise as possible. It should include a description of any collateral services required, such as performance reporting or post-project operational support for the procured item. In some application areas, there are specific content and format requirements for a SOW.

12.2 SOLICITATION PLANNING

Solicitation planning involves preparing the documents needed to support solicitation (the solicitation process is described in Section 12.3).



12.2.1 Inputs to Solicitation Planning

- .1 **Procurement management plan.** The procurement management plan is described in Section 12.1.3.1.
- .2 **Statement(s) of work.** The statement of work is described in Section 12.1.3.2.
- .3 **Other planning outputs.** Other planning outputs (see Section 12.1.1.5), which may have been modified from when they were considered as part of procurement planning, should be reviewed again as part of solicitation. In particular, solicitation planning should be closely coordinated with the project schedule.

12.2.2 Tools and Techniques for Solicitation Planning

- .1 **Standard forms.** Standard forms may include standard contracts, standard descriptions of procurement items, or standardized versions of all or part of the needed bid documents (see Section 12.2.3.1). Organizations that do substantial amounts of procurement should have many of these documents standardized.
- .2 **Expert judgment.** Expert judgment is described in Section 12.1.2.2.

12.2.3 Outputs from Solicitation Planning

- .1 **Procurement documents.** Procurement documents are used to solicit proposals from prospective sellers. The terms “bid” and “quotation” are generally used when the source selection decision will be price-driven (as when buying commercial items), while the term “proposal” is generally used when non-financial considerations such as technical skills or approach are paramount (as when buying professional services). However, the terms are often used interchangeably and care should be taken not to make unwarranted assumptions about the implications of the term used. Common names for different types of procurement documents include: Invitation for Bid (IFB), Request for Proposal (RFP), Request for Quotation (RFQ), Invitation for Negotiation, and Contractor Initial Response.

Procurement documents should be structured to facilitate accurate and complete responses from prospective sellers. They should always include the relevant statement of work, a description of the desired form of the response, and any required contractual provisions (e.g., a copy of a model contract, non-disclosure provisions). Some or all of the content and structure of procurement documents, particularly for those prepared by a government agency, may be defined by regulation.

Procurement documents should be rigorous enough to ensure consistent, comparable responses, but flexible enough to allow consideration of seller suggestions for better ways to satisfy the requirements.

- .2 **Evaluation criteria.** Evaluation criteria are used to rate or score proposals. They may be objective (e.g., “the proposed project manager must be a certified Project Management Professional”) or subjective (e.g., “the proposed project manager must have documented, previous experience with similar projects”). Evaluation criteria are often included as part of the procurement documents.

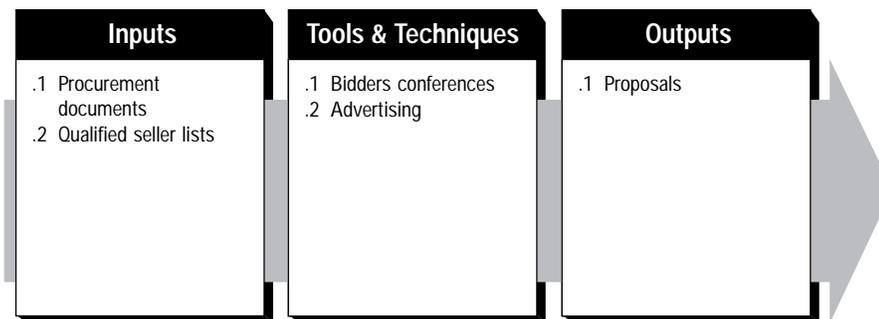
Evaluation criteria may be limited to purchase price if the procurement item is known to be readily available from a number of acceptable sources (“purchase price” in this context includes both the cost of the item and ancillary expenses such as delivery). When this is not the case, other criteria must be identified and documented to support an integrated assessment. For example:

- Understanding of need—as demonstrated by the seller’s proposal.
- Overall or life cycle cost—will the selected seller produce the lowest total cost (purchase cost plus operating cost)?
- Technical capability—does the seller have, or can the seller be reasonably expected to acquire, the technical skills and knowledge needed?

- Management approach—does the seller have, or can the seller be reasonably expected to develop, management processes and procedures to ensure a successful project?
 - Financial capacity—does the seller have, or can the seller reasonably be expected to obtain, the financial resources needed?
- .3 Statement of work updates.** The statement of work is described in Section 12.1.3.2. Modifications to one or more statements of work may be identified during solicitation planning.

12.3 SOLICITATION

Solicitation involves obtaining information (bids and proposals) from prospective sellers on how project needs can be met. Most of the actual effort in this process is expended by the prospective sellers, normally at no cost to the project.



12.3.1 Inputs to Solicitation

- .1 Procurement documents.** Procurement documents are described in Section 12.2.3.1.
- .2 Qualified seller lists.** Some organizations maintain lists or files with information on prospective sellers. These lists will generally have information on relevant experience and other characteristics of the prospective sellers.

If such lists are not readily available, the project team will have to develop its own sources. General information is widely available through library directories, relevant local associations, trade catalogs, and similar sources. Detailed information on specific sources may require more extensive effort, such as site visits or contact with previous customers.

Procurement documents may be sent to some or all of the prospective sellers.

12.3.2 Tools and Techniques for Solicitation

- .1 Bidder conferences.** Bidder conferences (also called contractor conferences, vendor conferences, and pre-bid conferences) are meetings with prospective sellers prior to preparation of a proposal. They are used to ensure that all prospective sellers have a clear, common understanding of the procurement (technical requirements, contract requirements, etc.). Responses to questions may be incorporated into the procurement documents as amendments.
- .2 Advertising.** Existing lists of potential sellers can often be expanded by placing advertisements in general circulation publications such as newspapers or in specialty publications such as professional journals. Some government jurisdictions require public advertising of certain types of procurement items; most government jurisdictions require public advertising of subcontracts on a government contract.

12.3.3 Outputs from Solicitation

- .1 **Proposals.** Proposals (see also discussion of bids, quotations, and proposals in Section 12.2.3.1) are seller-prepared documents that describe the seller's ability and willingness to provide the requested product. They are prepared in accordance with the requirements of the relevant procurement documents.

12.4 SOURCE SELECTION

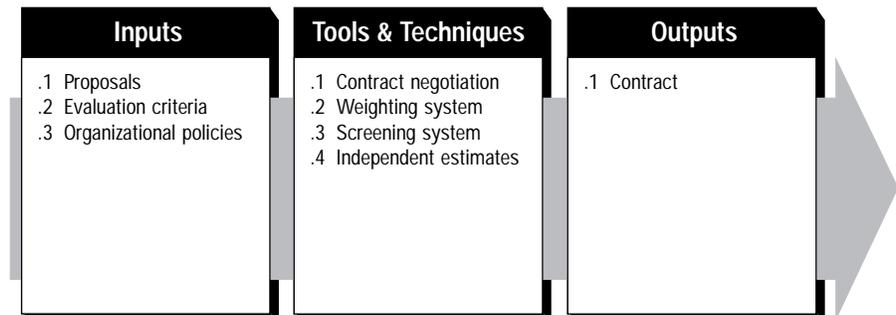
Source selection involves the receipt of bids or proposals and the application of the evaluation criteria to select a provider. This process is seldom straightforward:

- Price may be the primary determinant for an off-the-shelf item, but the lowest proposed *price* may not be the lowest *cost* if the seller proves unable to deliver the product in a timely manner.
- Proposals are often separated into technical (approach) and commercial (price) sections with each evaluated separately.
- Multiple sources may be required for critical products.

The tools and techniques described below may be used singly or in combination. For example, a weighting system may be used to:

- Select a single source who will be asked to sign a standard contract.
- Rank order all proposals to establish a negotiating sequence.

On major procurement items, this process may be iterated. A short list of qualified sellers will be selected based on a preliminary proposal, and then a more detailed evaluation will be conducted based on a more detailed and comprehensive proposal.



12.4.1 Inputs to Source Selection

- .1 **Proposals.** Proposals are described in Section 12.3.3.1.
- .2 **Evaluation criteria.** Evaluation criteria are described in Section 12.2.3.2.
- .3 **Organizational policies.** Any and all of the organizations involved in the project may have formal or informal policies that can affect the evaluation of proposals.

12.4.2 Tools and Techniques for Source Selection

- .1 **Contract negotiation.** Contract negotiation involves clarification and mutual agreement on the structure and requirements of the contract prior to the signing of the contract. To the extent possible, final contract language should reflect all agreements reached. Subjects covered generally include, but are not limited to, responsibilities and authorities, applicable terms and law, technical and business management approaches, contract financing, and price.

For complex procurement items, contract negotiation may be an independent process with inputs (e.g., an issues or open items list) and outputs (e.g., memorandum of understanding) of its own.

Contract negotiation is a special case of the general management skill called “negotiation.” Negotiation tools, techniques, and styles are widely discussed in the general management literature and are generally applicable to contract negotiation.

- .2 **Weighting system.** A weighting system is a method for quantifying qualitative data in order to minimize the effect of personal prejudice on source selection. Most such systems involve (1) assigning a numerical weight to each of the evaluation criteria, (2) rating the prospective sellers on each criterion, (3) multiplying the weight by the rating, and (4) totaling the resultant products to compute an overall score.
- .3 **Screening system.** A screening system involves establishing minimum requirements of performance for one or more of the evaluation criteria. For example, a prospective seller might be required to propose a project manager who is a Project Management Professional (PMP) before the remainder of their proposal would be considered.
- .4 **Independent estimates.** For many procurement items, the procuring organization may prepare its own estimates as a check on proposed pricing. Significant differences from these estimates may be an indication that the SOW was not adequate or that the prospective seller either misunderstood or failed to respond fully to the SOW. Independent estimates are often referred to as “should cost” estimates.

12.4.3 Outputs from Source Selection

- .1 **Contract.** A contract is a mutually binding agreement which obligates the seller to provide the specified product and obligates the buyer to pay for it. *A contract is a legal relationship subject to remedy in the courts.* The agreement may be simple or complex, usually (but not always) reflecting the simplicity or complexity of the product. It may be called, among other names, a contract, an agreement, a subcontract, a purchase order, or a memorandum of understanding. Most organizations have documented policies and procedures defining who can sign such agreements on behalf of the organization.

Although all project documents are subject to some form of review and approval, the legally binding nature of a contract usually means that it will be subjected to a more extensive approval process. In all cases, a primary focus of the review and approval process should be to ensure that the contract language describes a product or service that will satisfy the need identified. In the case of major projects undertaken by public agencies, the review process may even include public review of the agreement.

12.5 CONTRACT ADMINISTRATION

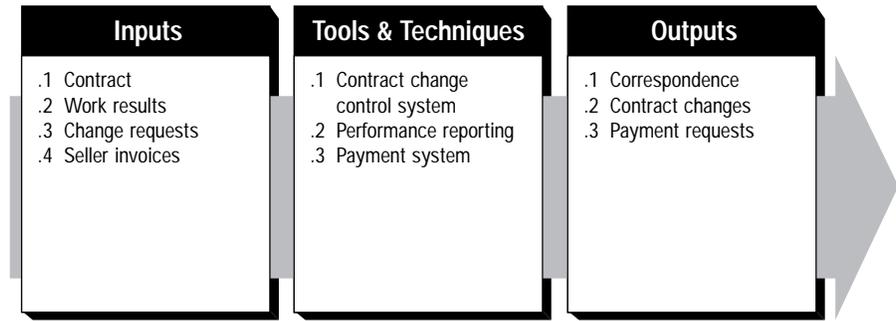
Contract administration is the process of ensuring that the seller’s performance meets contractual requirements. On larger projects with multiple product and service providers, a key aspect of contract administration is managing the interfaces among the various providers. *The legal nature of the contractual relationship makes it imperative that the project team be acutely aware of the legal implications of actions taken when administering the contract.*

Contract administration includes application of the appropriate project management processes to the contractual relationship(s) and integration of the outputs from these processes into the overall management of the project. This integration and coordination will often occur at multiple levels when there are multiple sellers and multiple products involved. The project management processes which must be applied include:

- Project plan execution, described in Section 4.2, to authorize the contractor’s work at the appropriate time.
- Performance reporting, described in Section 10.3, to monitor contractor cost, schedule, and technical performance.

- Quality control, described in Section 8.3, to inspect and verify the adequacy of the contractor's product.
- Change control, described in Section 4.3, to ensure that changes are properly approved and that all those with a need to know are aware of such changes.

Contract administration also has a financial management component. Payment terms should be defined within the contract and should involve a specific linkage between progress made and compensation paid.



12.5.1 Inputs to Contract Administration

- Contract.** Contracts are described in Section 12.4.3.1.
- Work results.** The seller's work results—which deliverables have been completed and which have not, to what extent are quality standards being met, what costs have been incurred or committed, etc.—are collected as part of project plan execution (Section 4.2 provides more detail on project plan execution).
- Change requests.** Change requests may include modifications to the terms of the contract or to the description of the product or service to be provided. If the seller's work is unsatisfactory, a decision to terminate the contract would also be handled as a change request. Contested changes, those where the seller and the project management team cannot agree on compensation for the change, are variously called claims, disputes, or appeals.
- Seller invoices.** The seller must submit invoices from time to time to request payment for work performed. Invoicing requirements, including necessary supporting documentation, are usually defined in the contract.

12.5.2 Tools and Techniques for Contract Administration

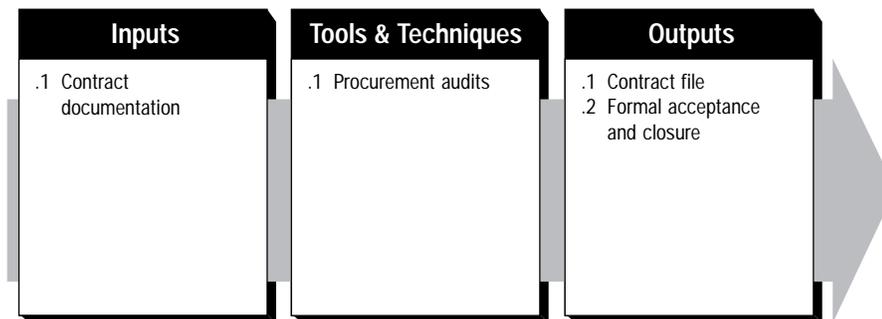
- Contract change control system.** A contract change control system defines the process by which the contract may be modified. It includes the paperwork, tracking systems, dispute resolution procedures, and approval levels necessary for authorizing changes. The contract change control system should be integrated with the overall change control system (Section 4.3 describes the overall change control system).
- Performance reporting.** Performance reporting provides management with information about how effectively the seller is achieving the contractual objectives. Contract performance reporting should be integrated with the overall project performance reporting described in Section 10.3.
- Payment system.** Payments to the seller are usually handled by the accounts payable system of the performing organization. On larger projects with many or complex procurement requirements, the project may develop its own system. In either case, the system must include appropriate reviews and approvals by the project management team.

12.5.3 Outputs from Contract Administration

- .1 **Correspondence.** Contract terms and conditions often require written documentation of certain aspects of buyer/seller communications, such as warnings of unsatisfactory performance and contract changes or clarifications.
- .2 **Contract changes.** Changes (approved and unapproved) are fed back through the appropriate project planning and project procurement processes, and the project plan or other relevant documentation is updated as appropriate.
- .3 **Payment requests.** This assumes that the project is using an external payment system. If the project has its own internal system, the output here would simply be “payments.”

12.6 CONTRACT CLOSE-OUT

Contract close-out is similar to administrative closure (described in Section 10.4) in that it involves both product verification (Was all work completed correctly and satisfactorily?) and administrative close-out (updating of records to reflect final results and archiving of such information for future use). The contract terms and conditions may prescribe specific procedures for contract close-out. Early termination of a contract is a special case of contract close-out.



12.6.1 Inputs to Contract Close-out

- .1 **Contract documentation.** Contract documentation includes, but is not limited to, the contract itself along with all supporting schedules, requested and approved contract changes, any seller-developed technical documentation, seller performance reports, financial documents such as invoices and payment records, and the results of any contract-related inspections.

12.6.2 Tools and Techniques for Contract Close-out

- .1 **Procurement audits.** A procurement audit is a structured review of the procurement process from procurement planning through contract administration. The objective of a procurement audit is to identify successes and failures that warrant transfer to other procurement items on this project or to other projects within the performing organization.

12.6.3 Outputs from Contract Close-out

- .1 **Contract file.** A complete set of indexed records should be prepared for inclusion with the final project records (see Section 10.4.3.1 for a more detailed discussion of administrative closure).
- .2 **Formal acceptance and closure.** The person or organization responsible for contract administration should provide the seller with formal written notice that the contract has been completed. Requirements for formal acceptance and closure are usually defined in the contract.

NOTES
