Project Procurement Management

PROJECT PROCUREMENT MANAGEMENT

12.1 Procurement Planning

.1 **Inputs**
- .1 Scope statement
- .2 Product description
- .3 Procurement resources
- .4 Market conditions
- .5 Other planning outputs
- .6 Constraints
- .7 Assumptions

.2 **Tools and Techniques**
- .1 Make-or-buy analysis
- .2 Expert judgment
- .3 Contract type selection

.3 **Outputs**
- .1 Procurement management plan
- .2 Statement(s) of work

12.2 Solicitation Planning

.1 **Inputs**
- .1 Procurement management plan
- .2 Statement(s) of work
- .3 Other planning outputs

.2 **Tools and Techniques**
- .1 Standard forms
- .2 Expert judgment

.3 **Outputs**
- .1 Procurement documents
- .2 Evaluation criteria
- .3 Statement of work updates

12.3 Solicitation

.1 **Inputs**
- .1 Procurement documents
- .2 Qualified seller lists

.2 **Tools and Techniques**
- .1 Bidder conferences
- .2 Advertising

.3 **Outputs**
- .1 Proposals

12.4 Source Selection

.1 **Inputs**
- .1 Proposals
- .2 Evaluation criteria
- .3 Organizational policies

.2 **Tools and Techniques**
- .1 Contract negotiation
- .2 Weighting system
- .3 Screening system
- .4 Independent estimates

.3 **Outputs**
- .1 Contract

12.5 Contract Administration

.1 **Inputs**
- .1 Contract
- .2 Work results
- .3 Change requests
- .4 Seller invoices

.2 **Tools and Techniques**
- .1 Contract change control system
- .2 Performance reporting
- .3 Payment system

.3 **Outputs**
- .1 Correspondence
- .2 Contract changes
- .3 Payment requests

12.6 Contract Closeout

.1 **Inputs**
- .1 Contract documentation

.2 **Tools and Techniques**
- .1 Procurement audits

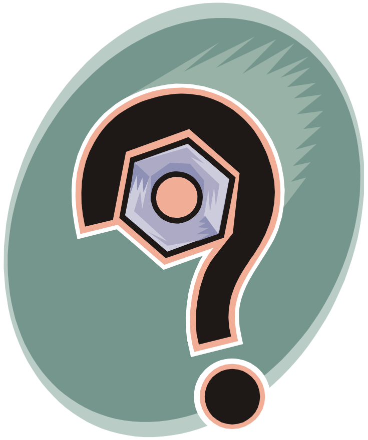
.3 **Outputs**
- .1 Contract file
- .2 Formal acceptance and closure

Procurement Planning

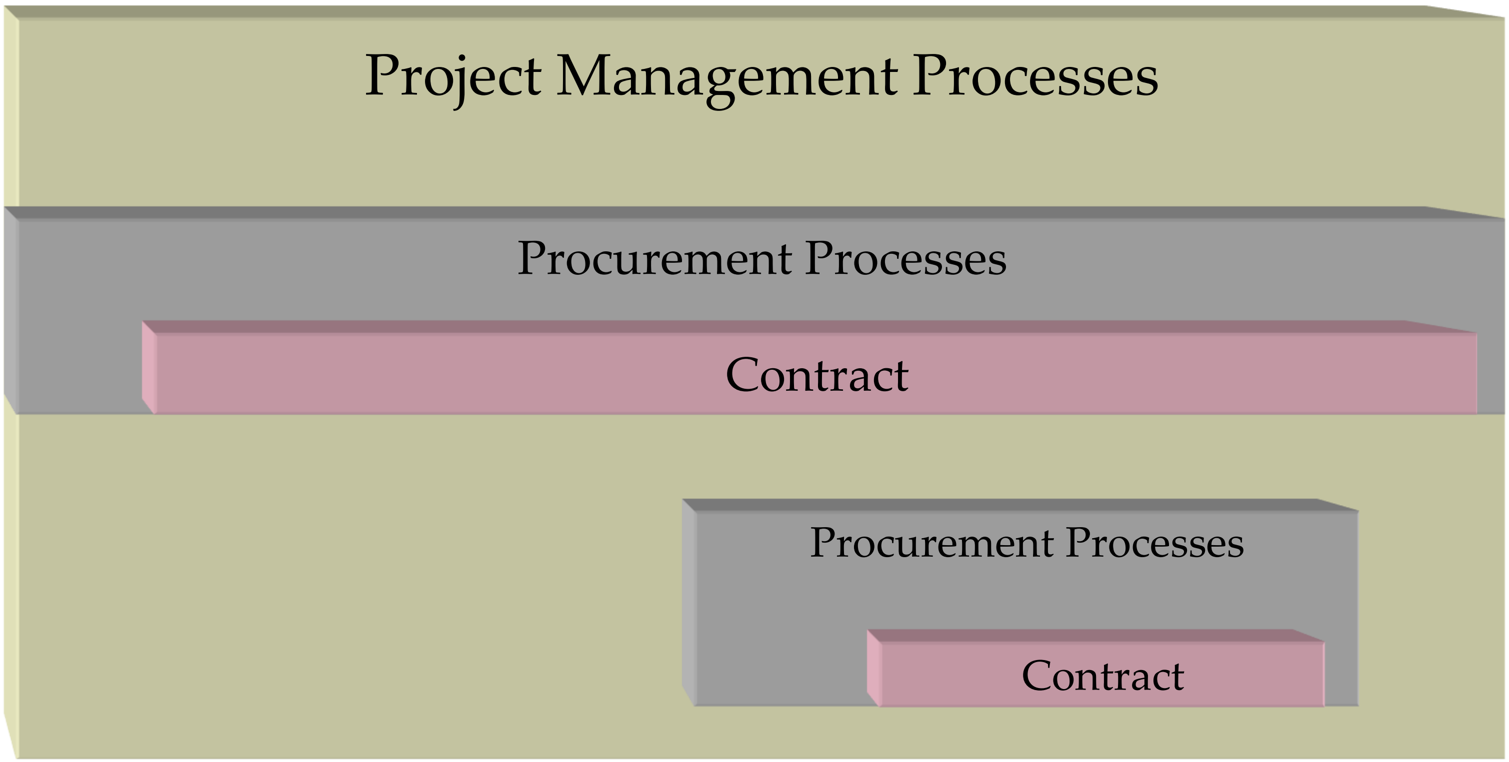
- **Procurement Planning is the process of identifying which project needs can be best met by procuring products or services outside the project organization and should be accomplished during the scope definition effort. It involves considering whether to procure, how to procure, what to procure, how much to procure, and when to procure.**

Make or Buy?

- **Lack needed skills**
- **Lack adequate staff**
- **Share risk**
- **Maintain flexibility**
- **Learn from seller**



Projects, Procurement, and Contracts



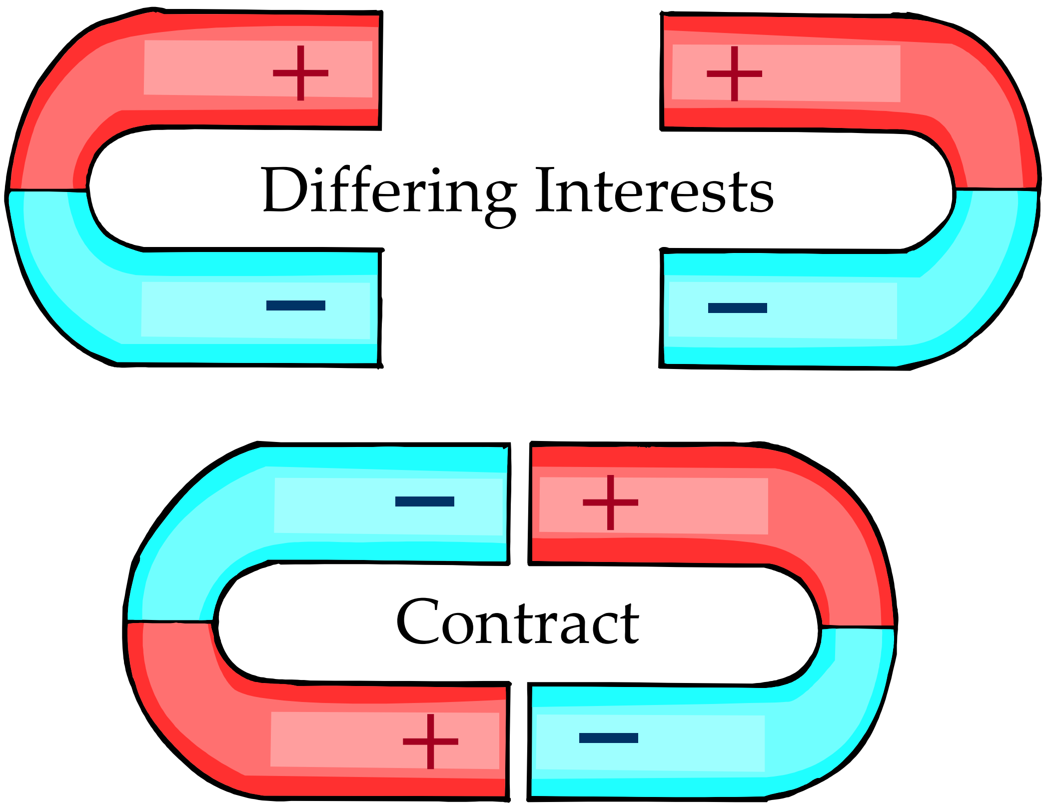
Some Organizations Use Other Terms

- **Procurement may also be called:**
  - **Acquisition**
  - **Buying**
  - **Contracting**
  - **Purchasing**
- **Contracts may also be called:**
  - **Agreements**
  - **Purchase orders**

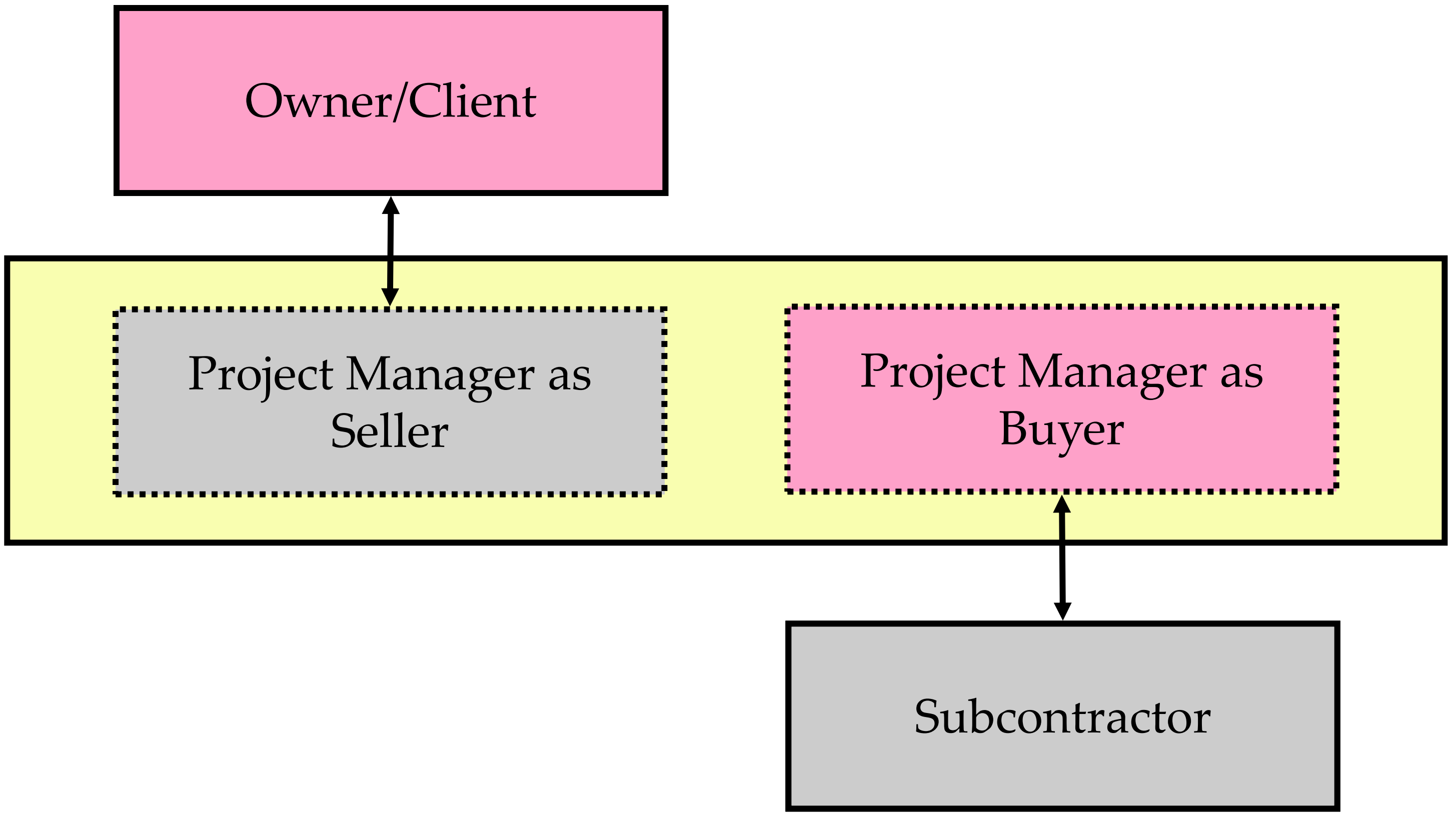
Buyer and Seller

- **Different names:**
  - **Buyer = customer, sponsor, owner**
  - **Seller = vendor, supplier, contractor, provider**
- **Different perspectives:**
  - **For the buyer, the seller’s work is usually a deliverable or subproject**
  - **For the seller, the contract is often a complete project**

The Buyer/Seller Relationship



Subcontracts



Contract Definition

- **A contract is a compulsory agreement between two or more parties and is constructed such that one party gives something up (money) and the other party receives something (goods or services) in return.**

A Valid Contract Must:

A. **Be between competent parties.**
B. **Accomplish a lawful purpose.**
C. **Include an offer and acceptance of that offer.**
D. **Involve an exchange of value.**

A. Competent Parties, B. Lawful Purpose

A. **Competent parties:**
   - **Legal age**
   - **With appropriate authority**
   - **Mentally competent**

B. **Lawful purpose:**
   - **Does not violate applicable laws**
   - **Compatible with public policy**

C. Offer and Acceptance

- **Anything said or done that shows a willingness to exchange value.**
- **Offers and acceptances may be:**
  - **Written**
  - **Spoken**
  - **Demonstrated through action**

D. Exchange of Value

- **Both parties must receive something:**
  - **Financial or non-financial**
  - **Directly or indirectly**
- **Also called "consideration"**

Example of Exchange of Value

- **Buyer receives:**
  - **Financial value — product or service**
  - **Non-financial value — lower risk**
- **Seller receives:**
  - **Financial value — payment**
  - **Non-financial value — experience**

"Terms and Conditions"

- **The words in the contract**
- **Rights and responsibilities of the parties:**
  - **Term — a specific promise**
  - **Condition — a modification of a term**

Understanding the Terms and Conditions

- **Plain, ordinary, and popular meanings overrule technical jargon — when in doubt, define the term within the contract.**
- **With two different but equally probable meanings, a contract will be interpreted *against* the author.**
- **The same word means the same thing throughout the document.**

… *continued*

- **“May” is not a requirement!**
- **“About”, “approximately,” and “almost” do not constitute a guarantee.**
- **Business custom, industry standards, or professional practice may be inferred.**

Contract Type Selection

- **Fixed price or lump-sum contracts**
- **Cost-Reimbursable Contracts**
- **Time & Materials contracts**

Price-Based Contracts

- **Fixed price incentive fee**
- **Firm fixed price (also called “lump sum”)**

Fixed price assumes fixed scope!

- **Unit price:**
  - **Set price per unit of product or service**

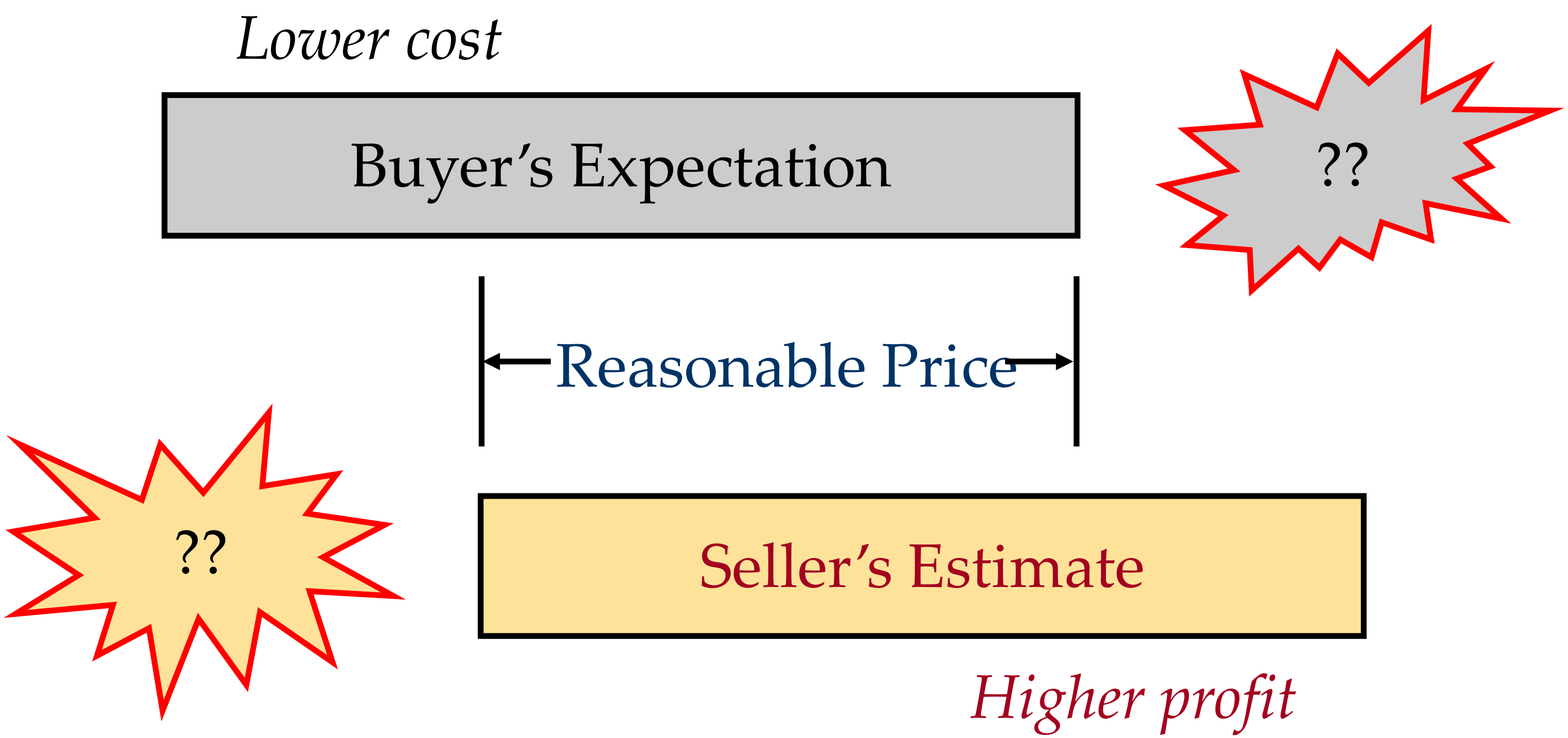
Firm Fixed Price: Underrun

	Buyer View	Seller Estimate	Seller Actual
Cost	**n/a**	**200,000**	**190,000**
Profit/loss	**n/a**	**25,000**	**35,000**
Contract Amount	**225,000**	**225,000**	**225,000**

Firm Fixed Price: Overrun

	Buyer View	Seller Estimate	Seller Actual
Cost	**n/a**	**200,000**	**230,000**
Profit/loss	**n/a**	**25,000**	**–5,000**
Contract Amount	**225,000**	**225,000**	**225,000**

Price Must Be Reasonable



Buyer View of Price-Based Contracts

- **Advantages:**
  - **Seller assumes *cost* risk**
- **Disadvantages:**
  - **More effort needed to define scope**
  - **Changes can be expensive**

Cost-Based Contracts

- **The amount that the buyer pays is driven by the actual costs incurred by the seller.**
- **Cost-based contracts are used mostly in the public sector.**

Cost-Based Contract Terminology

- *Direct costs* — costs which can be tied to a specific deliverable.
- *Indirect costs* — costs which cannot be tied to a specific deliverable:
  - Fringe benefits — non-salary costs
  - Overhead — cost of running the business
- Indirect costs are calculated as a percentage of historical, allowable costs.

Direct, Fringe, or Overhead?

- **CEO's salary?**
- **Equipment bought for project?**
- **Health insurance?**
- **Materials used in building product?**
- **Office rent?**
- **Project manager's salary?**
- **Vacation time?**

Types of Cost-Based Contracts

- **Cost plus percentage of cost (CPPC)**
- **Cost plus fixed fee (CPFF)**
- **Cost plus incentive fee (CPIF)**

Fee = Profit

CPFF vs. CPIF: Underrun

	Estimated	CPFF: Actual	CPIF: Actual
Cost	**100,000**	**90,000**	**90,000**
Fee	**8,000**	**8,000**	**8,000**
Incentive (60/40)	**n/a**	**n/a**	**+4,000**
Contract Amount	**108,000**	**98,000**	**102,000**

CPFF vs. CPIF: Overrun

	Estimated	CPFF: Actual	CPIF: Actual
Cost	**100,000**	**110,000**	**110,000**
Fee	**8,000**	**8,000**	**8,000**
Incentive (30/70)	**n/a**	**n/a**	**–7,000**
Contract Amount	**108,000**	**118,000**	**111,000**

Contract Type

Cost Plus Incentive Fee contracts are:

a. **only appropriate on construction projects.**
b. **seldom used by a well-managed project organization.**
c. **useful only for government agencies.**
d. **often cost effective for the buyer.**

Buyer View of Cost-Based Contracts

- **Advantages:**
  - **Less effort needed to define scope**
  - **More sellers likely to be interested**
  - **Easier to get changes accepted**
- **Disadvantages:**
  - **Limited control over total cost**

Hybrid Contracts

- **Time and materials (T&M):**
  - **Labor charged at hourly rate(s)**
  - **Materials charged at cost plus a percent for administrative overhead**
- **Time and materials, not to exceed:**
  - **Seller stops work once limit has been reached**

Factors to Consider When Choosing Type of Contract

- **Detailed requirements = price-based**
- **Many able vendors = price-based**
- **Urgent = hybrid**
- **Complex requirements = cost-based**
- **High value contract = cost-based**

Summary of Key Points

- ☑ **These Topics will be presented from the perspective of the Buyer**
- ☑ **Valid contracts have four key elements**
- ☑ **The contract binds the Buyer and the Seller**

Procurement Planning Outputs

1. **Procurement management plan**
2. **Statement of Work (SOW)**

Procurement management plan

- **What types of contract to be used**
- **Who will be the experts**
- **What standards forms to be used**
- **How will the coordination take place**
- **How will multiple contractors be managed**

SOW

- **Documented with a *statement of work* (SOW):**
  - **Must provide enough detail for the seller to understand the buyer's needs.**
  - **Will generally describe a specific result or deliverable.**
  - **May be broadly framed or highly detailed.**

Tradeoffs

- **Buyer wants:**
  - **Flexibility**
  - **Minimum effort**
- **Seller wants:**
  - **Clarity**
  - **Completeness**

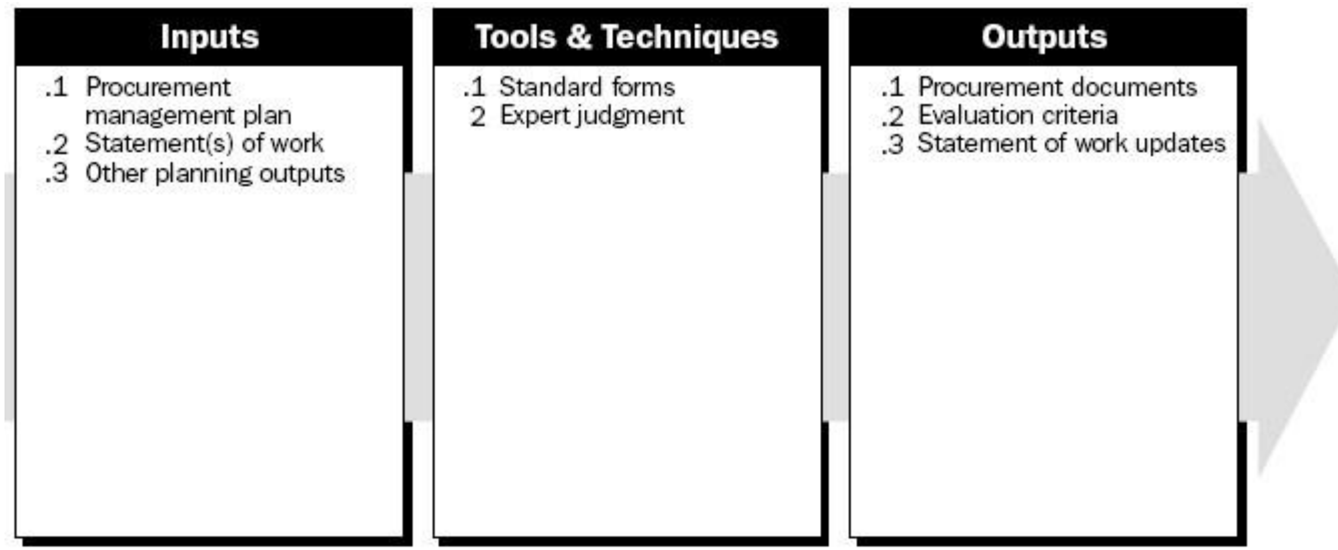
Procurement Overview

A. *Planning* — **preparing the solicitation documents**
B. *Source Selection* — **selecting a seller**
C. *Contract Administration* — **working with the seller**

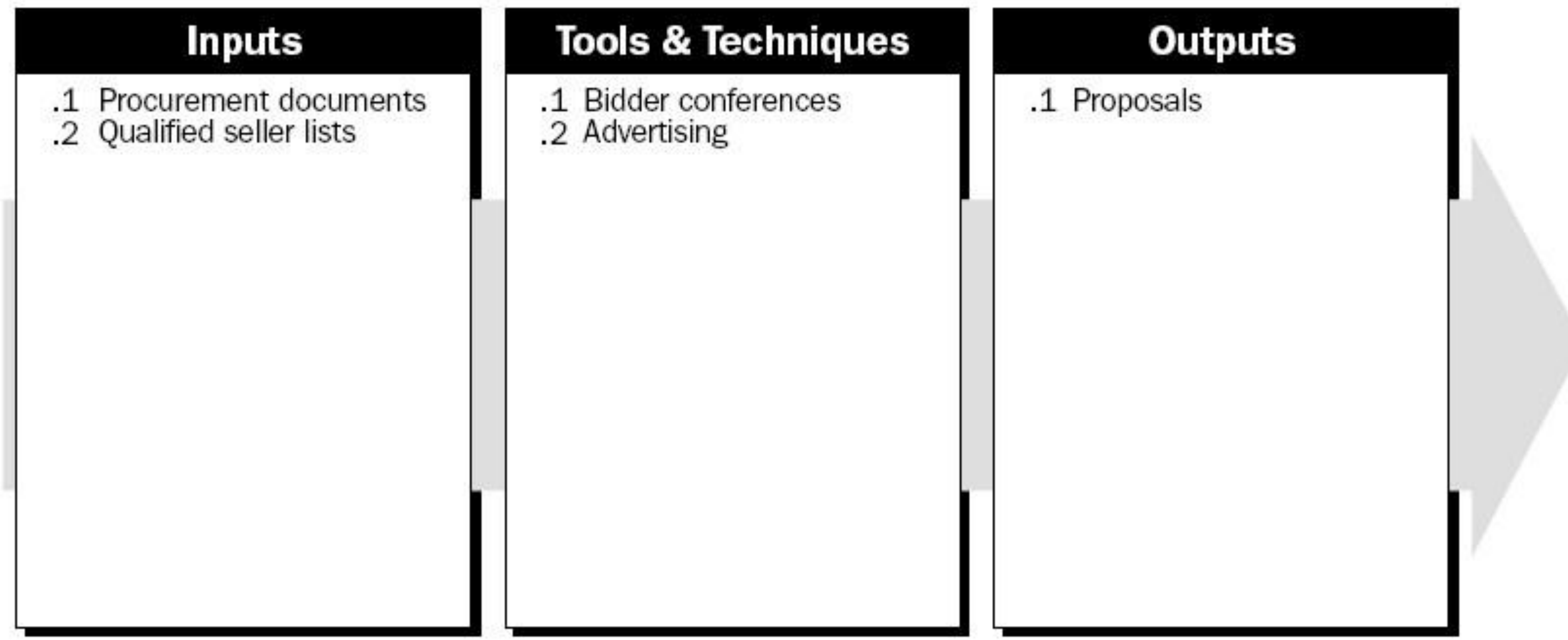
Procurement Planning

- **Procurement management plan:**
- **Preparing procurement documents**

Solicitation Planning



Solicitation



Types of Procurement Documents

- Request for information (RFI)
  - No commitment to buy
  - Usually limited to qualifications
- Invitation to Bid (IFB) and Request for Quotation (RFQ)
  - Price-based purchases

This usage is common but not universal!

- Request for Proposal (RFP)
  - Services, custom or complex products

Typical Procurement Document Contents

- Introduction or overview
- Statement of work (SOW)
- Decision process and schedule
- Format of the response
- Evaluation criteria
- Required contract terms

Source Selection

Inputs	Tools & Techniques	Outputs
.1 Proposals	.1 Contract negotiation	.1 Contract
.2 Evaluation criteria	.2 Weighting system	
.3 Organizational policies	.3 Screening system	
	.4 Independent estimates	

Source Selection

- **Types of solicitations**
  - **Sole source**
  - **Short list**
  - **Competitive**
- **Evaluating responses**
- **Negotiating an agreement**

1. Sole Source Solicitation

- ***Definition*** **— only one potential seller is considered**
- **Why use sole source?**
  - **Get contract signed quickly**
  - **Very few sellers have the skills needed**
- **Where can you find potential sellers?**
  - **Prior experience**

2. Short List Solicitation

- *Definition* — **multiple potential sellers, usually at least three**
- **Why use a short list?**
  - **Encourage competition (approach, cost, time)**
  - **Avoid extended selection process**
  - **Only a few sellers have the skills needed**
- **Where can you find potential sellers?**
  - **Prior experience**
  - **Web search**
  - **Company list of approved vendors**

3. Competitive Solicitation

- ***Definition*** **— advertised, anyone can bid**
- **Why use competitive bidding?**
  - **Encourage competition (approach, cost, time)**
  - **Many potential sellers have the skills needed**
  - **Avoid appearance of conflict of interest**
- **Where can you find potential sellers?**
  - **Newspapers**
  - **Industry publications**
  - **Professional journals**

Evaluating Responses

- **Objective is to select a single seller**
- **Evaluation criteria generally fall into three major categories:**
  - **Technical**
  - **Management**
  - **Price and schedule**

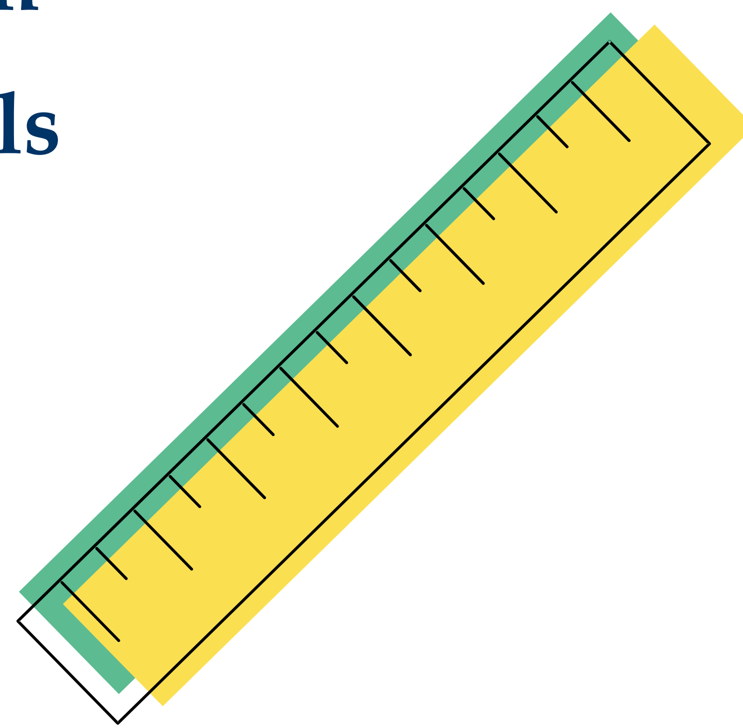
- **Selection requires scoring proposals**

Common Technical Criteria for Products

1. **Producibility**
2. **Usability**
3. **Reliability**
4. **Maintainability**
5. **Availability**
6. **Operability**
7. **Flexibility**
8. **Social acceptability**
9. **Affordability**

Common Technical Criteria for Services

- **Overall approach**
- **Work plan details**
- **Originality**



Common Management Criteria

- **Skills of staff to be assigned**
- **Seller's reputation**
- **Prior experience with seller**
- **Financial strength**
- **Management systems**

Common Price and Schedule Criteria

- **Reasonableness**
- **Competitiveness**

Mechanics of Evaluating Responses

- **Screening system:**
  - **Eliminate proposals that don't meet minimum requirements**
- **Scoring system:**
  - **Equal or weighted factors**
  - **High score wins**

Scoring System Example

Item	Weight	Seller 1	Seller 2	Seller 3
Price	**20**	**15**	**18**	**20**
Sched	**10**	**8**	**8**	**8**
Staff	**30**	**30**	**25**	**25**
Plan	**40**	**35**	**30**	**25**
Total	**100**	**88**	**81**	**78**

Order of Negotiations

- **Statement of work *first***
- **Staffing**
- **Financial arrangements**
- **Other terms and conditions**

Negotiation Reminders

- **Be careful of compromising evaluation criteria**
- **Win-win to maintain the relationship**
- **Focus on interests, not positions**
- **Document *all* agreements and understandings**

Summary of Key Points

- ☑ **Match the solicitation approach to the needs of your project.**
- ☑ **Work hard to evaluate proposals objectively.**
- ☑ **Negotiate for a win-win agreement.**

Contract Administration

Inputs	Tools & Techniques	Outputs
.1 Contract	.1 Contract change control system	.1 Correspondence
.2 Work results	.2 Performance reporting	.2 Contract changes
.3 Change requests	.3 Payment system	.3 Payment requests
.4 Seller invoices		

Contract Administration

- **Contract management is a special case of project risk management:**
  - **Identify (contracting) risks**
  - **Develop (contracting) risk responses**
  - **Deal with (contracting) problems**

High Priority Contracting Risks

- **Poor communication**
- **Poor change control**
- **Breach of contract**
- **Payment disputes**

Contracting Risk = Poor Communication

- **Risk responses =**
  - **Kick-off meeting**
  - **Clear definition of responsibilities**

Responsibility Assignment Matrix

Person / Contract Item	A	B	C	D	E	F	…
Item 1	R	A			N		
Item 2		A	N		R		
Item 3		A	N		R	R	
Item 4		A		R	N		
…		…					

R = Review N = Notify A = Approve

Contracting Risk = Poor Change Control

- **Risk responses =**
  - **Clearly defined change control practices**
  - **Change control practices specified in contract**

What are the characteristics of a good change control system?

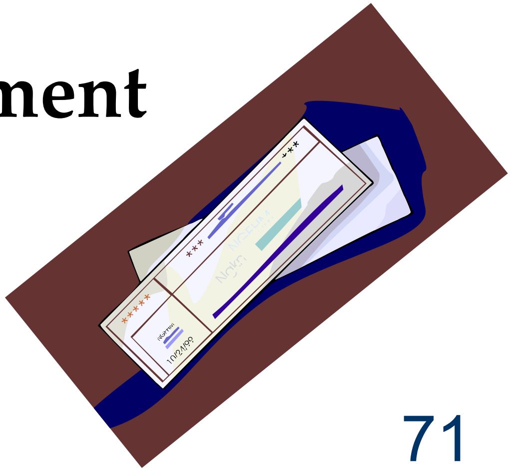
- **A control change system defines the process by which the contract may be modified. It includes the paperwork, tracking systems, dispute resolution procedures, and approval levels necessary for authorizing changes.**

Contracting Risk = Breach of Contract

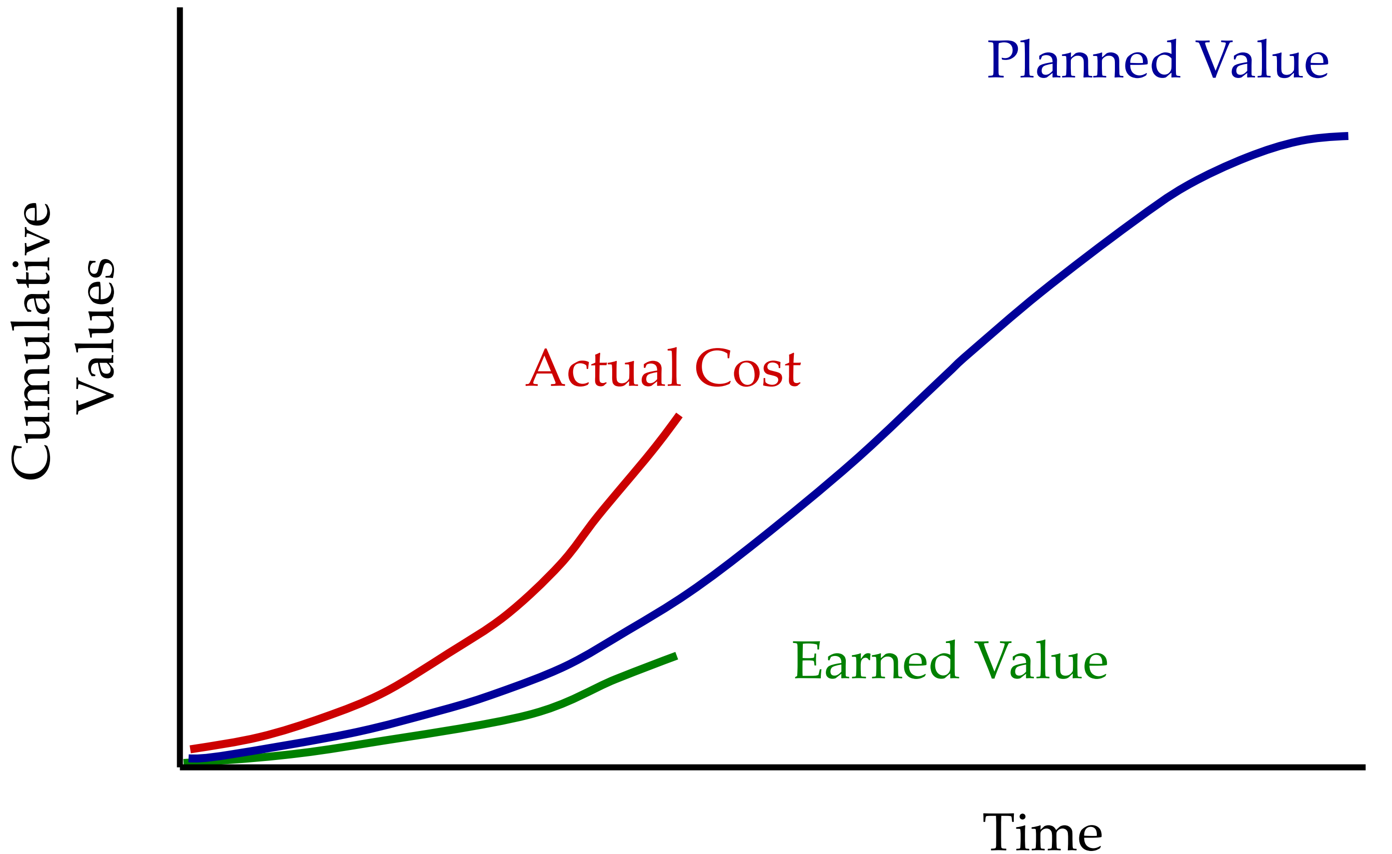
- ***Breach of contract*** **— unexcused failure to perform a contractual promise.**
- **Risk responses =**
  - **Payment of damages**
  - **Contractually specified corrective action**

Contracting Risk = Payment Disputes

- **Risk responses =**
  - **Defined acceptance criteria**
  - **Defined acceptance process**
  - **Progress reporting system**
  - **Timely processing of payment documents**



Progress Reporting System



Payment Processing

- *Do* — follow the procedures in the contract.
- *Do* — communicate promptly regarding any problems or issues.
- *Do* — process seller invoices promptly.
- *Don't* — approve payment if the contract terms have not been satisfied.
- *Don't* — withhold payment except as allowed by the contract.

Payment Terms

- **All payments require a signed contract!**
- **Advance payments:**
  - **Payments made prior to start of work**
  - **Usually made to support purchase of materials**
- **Progress (partial) payments:**
  - **Payments that are less than the full contract amount**
  - **Method of calculation should be defined within the contract**

… continued

- **Retainage:**
  - Amounts withheld to ensure performance
- **Final payments:**
  - Payments made when all of the contract work has been completed and accepted

Sample Payment Terms and Conditions

i. **Payment requests must be supported by a correct invoice.**
ii. **Buyer will pay seller 85% of the agreed value of each work item upon completion of the work item.**
iii. **Payments will be made within 30 days.**
iv. **Retainage will be paid within 30 days of final acceptance.**

Summary of Key Points

- ☑ **Contract management is mostly risk management.**
- ☑ **Communicate, communicate, communicate.**
- ☑ **Conform to the contract.**

Warranties & Guarantees

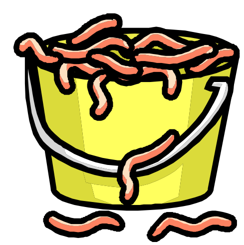
- **Product performance guarantees**
- **Financial guarantees**
- **Warranties**
- **Limitation of liability**

Product Performance Guarantees

- ***Definition*** **— does the contracted item perform as specified?**
- **Buyer view:**
  - **Seller should deliver as promised**
  - **Burden of proof is on the seller**
- **Seller view:**
  - **Buyer knows best**

Financial Guarantees

- ***Definition*** **— protection from the risk that the other party will be financially unable to fulfill the contract.**
- ***Key issue*** **— enforcement may be difficult.**



Guarantees Often Provided Through Bonds

- **Payment bond:**
  - **Paid for by the Buyer.**
  - **Protects the Seller if the Buyer becomes insolvent.**
- **Performance bond:**
  - **Paid for by the Seller.**
  - **Protects the Buyer if the Seller fails to perform for any reason.**

Warranties

- **Definition:**
  - **How post-completion failures will be addressed**
  - **Normally limited to physical products**
- ***Key issue*** **— can implied warranties be excluded?**

Other Warranty Issues

- **Coverage:**
  - **For how long?**
  - **Does a failure extend the warranty?**
- **Responsibilities:**
  - **Can buyer actions void the warranty?**
  - **Effect of failure by a subcontractor?**
  - **If a part fails, is the whole product covered?**
- **Can damages be assessed?**

Limitation of Liability

- *Definition* — any condition which limits one party's ability to collect from the other in a court of law.
- Common limitations:
  - Indirect damages
  - Lawsuits by others

Summary of Key Points

- ☑ **Product performance guarantees:**
  - ✓ **Be clear**
  - ✓ **Don't over promise**
- ☑ **Guarantees, warranties, and limitations:**
  - ✓ **Beware the lawyers**

Contract Closeout

Inputs	Tools & Techniques	Outputs
.1 Contract documentation	.1 Procurement audits	.1 Contract file .2 Formal acceptance and closure