MODULE 5

Process—Secondary Constraints

CHAPTER 2

Procurement

Procurement

An organization can be either the buyer or the seller.

- **Sellers** are suppliers, vendors, service providers, contractors.
- **Buyers** are clients, customers, acquiring organizations, purchasers.
  - Assumption for exam: The project team is in the role of the buyer to acquire project resources or outsourced services.
- The *PMBOK® Guide—Seventh Edition* places procurement both in the Planning Performance Domain and in the Project Work Performance Domain.

Predictive: Project Procurement Management

KNOWLEDGE AREAS	PROCESS GROUPS: Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project Procurement Management		• Plan Procurement Management	• Conduct Procurements	• Control Procurements	

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- Processes necessary to purchase or acquire products, services, or results needed from outside the project team

Planning Procurement on Agile/Hybrid Projects

- Customer collaboration over contract negotiation:
  - Contracts still needed but should enable agile mindset.
  - Emphasize value delivered.
  - Enable team flexibility.
  - Enable variable scope.
- Physical procurement same as on any project.

Agile Contract Concepts Encourage Flexibility

Share risk versus reward
- Promote innovation.
- Share gains, but limit spending on poor-demand deliverables.

Master services agreement (MSA) plus addenda
- Unchanging terms and conditions in MSA.
- Changeable scope in lightweight addenda.
- Only need to renegotiate/add new addenda.

Milestones/payment terms based on incremental value
- Avoid arbitrary milestones. (No valuable feedback available.)
- Add a milestone at a time for flexibility or allow milestone reprioritization.

Fixed-price microdeliverables
- Charge per story in a certain point range.
- Product owner control.
- Expensive features are transparent and can be stopped early.

Pay per use
- Money shows what is in demand.

Predictive: Plan Procurement Management

Inputs

Project charter

Business documents
- Business case
- Benefits management plan

Project management plan
- Scope management plan
- Quality management plan
- Resource management plan
- Scope baseline

Project documents
- Milestone schedule
- Project team assignments
- Requirements documentation
- Requirements traceability matrix
- Resource requirements
- Risk register
- Stakeholder register

EEFs

OPAs

Tools and Techniques

Expert judgment

Data gathering
- Market research

Data analysis
- Make-or-buy analysis

Source selection analysis

Meetings

Outputs

Procurement management plan

Procurement strategy

Bid documents

Procurement statement of work

Source selection criteria

Make-or-buy decisions

Independent cost estimates

Change requests

Project documents updates
- Lessons learned register
- Milestone schedule
- Requirements documentation
- Requirements traceability matrix
- Risk register
- Stakeholder register

OPAs updates

Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*)*—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 12-2, Page 466. Material from this publication has been reproduced with the permission of PMI.

Contracts

Consist of:

- **An offer:** A promise to do a specified thing in the future.
- **An acceptance:** Must be voluntary, intended, and performed by someone authorized to accept the offer.
- **An exchange of money or something of value:** Includes valuable consideration, something to be gained or lost.

Contract Types

Fixed-Price	Cost-Reimbursable	Indefinite Delivery Indefinite Quantity (IDIQ)
Firm Fixed-Price (FFP)	Cost Plus Fixed Fee (CPFF)	
Fixed-Price Incentive Fee (FPIF)	Cost Plus Incentive Fee (CPIF)	**Time and Material**
Fixed-Price with Economic Price Adjustments (FP-EPA)	Cost Plus Award Fee (CPAF)	

Firm Fixed-Price Contract (FFP)

- Most common type of contract.
- Cost of goods is set at the beginning.
- Any cost increases are the responsibility of the seller.

Fixed-Price Incentive Fee Contract (FPIF)

- Contains financial incentives for the seller to get the work done faster, cheaper, or with improved technical performance.
- Final contract price not determined until completion of all work.
- Best for projects with important and difficult-to-achieve constraints.

Point of Total Assumption (PTA)

- The point in a contract where the seller assumes responsibility for all cost overruns

Maximum dollar value buyer is willing to pay for item

Seller's cost for procurement item (target cost + target profit)

$$\text{PTA} = \text{Target Cost} + \frac{\text{Ceiling Price} - \text{Target Price}}{\text{Buyer's Share Ratio}}$$

Seller's cost to produce item

Describes how cost overruns and underruns are divided between buyer and seller

Fixed-Price with Economic Price Adjustment Contract (FP-EPA)

- Used when contract occurs over extended period of time and there is a question about future economic conditions.
- Fixed price can be adjusted due to changes in the environment (e.g., inflation rates).

Cost Plus Fixed Fee Contract (CPFF)

- Buyer reimburses seller for seller's allowable costs (defined in contract) plus fixed percentage of profit.
- The fee does not change due to seller performance.
- Used when costs cannot be accurately estimated in advance but buyer has adequate controls on costs.

Cost Plus Incentive Fee Contract (CPIF)

- Buyer reimburses seller for seller's allowable costs (defined in contract) plus fee tied to performance.
- Fee and incentive based on prenegotiated formula.
- Used to provide seller with incentive to save costs.
- Can include penalty if criteria not met.

Cost Plus Award Fee Contract (CPAF)

- Buyer reimburses seller for seller's allowable costs (defined in contract) plus award fee tied to performance.
- Subjective—buyer judges seller's performance.
- Important to have procedures in place for making decisions fairly.
- Potential for only reward, not penalty.

Indefinite Delivery Indefinite Quantity (IDIQ)

- Indefinite delivery: As needed within fixed contract period.
- Indefinite quantity: Stated lower and upper limits.
- Favored by government purchasing entities (e.g., U.S. General Services Administration).
  - Use a **basic ordering agreement** as instrument of understanding (not a contract per se) to set rules.
- Multiple-award contract version: Multiple sellers (all specified in contract) compete with each other, keeping prices down.

Time and Material Contract (T&M)

- Buyer pays seller for seller's time plus materials to complete contract on per-hour or per-item basis.
- Hybrid type of contract that contains aspects of both fixed-price and cost-reimbursable contracts.
- Used when exact statement of work cannot be determined.

Contract Risks

LOW — **Seller's Risk** — HIGH

HIGH — **Buyer's Risk** — LOW

CPFF	**CPAF**	**CPIF**	**T&M**	**IDIQ**	**FP-EPA**	**FPIF**	**FFP**

Discussion Question

Which type of contract is most risky to the seller?

A. Firm fixed-price contract
B. Cost plus fixed fee contract
C. Cost plus incentive fee contract
D. Cost plus award fee contract

Discussion Question

Which type of contract is most risky to the buyer?

A. Firm fixed-price contract
B. Fixed-price incentive fee contract
C. Fixed-price with economic price adjustment contract
D. Cost plus fixed fee contract

Discussion Question

You are contracting a long-term project with an external vendor. They are charging you US$25 per hour per resource. What type of contract are you using?

A. CPIF
B. T&M
C. FFP
D. CPFF

Make-or-Buy Decisions

- Aren't just about cost…

Risks (proprietary information, control)	Internal capability	Quality
Available resources	Timing	Conditions
Budget constraints	Available contract types	

Output: Procurement Management Plan

Plan components

- Roles and responsibilities
- Procurement decisions
- Risk management
- Constraints and assumptions
- Selection process
- Contracting and administration
- Metrics

Output: Statement of Work (SOW)

"Narrative description of products, services, or results to be delivered by the project."

- Each procurement item must have an SOW so prospective sellers can see if they are capable of delivering required value.
- Should be concise, complete, and clear.
- Includes expectations for product or project requirements.
- Revised during the procurement process.

Source: This definition is taken from the Glossary of the Project Management Institute**,** *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Seventh Edition*, Project Management Institute, Inc., 2021. Material from this publication has been reproduced with the permission of PMI.

Output: Bid Documents

- Created by project team (buyer) to solicit proposals from sellers

- Request for information (RFI)
- Request for proposal (RFP)
- Request for quotation (RFQ)
- Invitation for bid (IFB; generally used in government contracts)
- Tender notice/Invitation to tender (ITT)
- Invitation for negotiation
- Invitation for seller's response

Output: Source Selection Criteria

- Requirements to perform SOW
- Product/service information (other than requirements in SOW)
- Risk management strategies
- Ownership rights
- Compliance

Predictive: Conduct Procurements

Inputs	Tools and Techniques	Outputs
Project management plan • Scope management plan • Requirements management plan • Communications management plan • Risk management plan • Procurement management plan • Configuration management plan • Cost baseline Project documents • Lessons learned register • Project schedule • Requirements documentation • Risk register • Stakeholder register Procurement documentation Seller proposals EEFs OPAs	Expert judgment Advertising Bidder conferences Data analysis • Proposal evaluation Interpersonal and team skills • Negotiation	Selected sellers Agreements Change requests Project management plan updates • Requirements management plan • Quality management plan • Communications management plan • Risk management plan • Procurement management plan • Scope baseline • Schedule baseline • Cost baseline Project documents updates • Lessons learned register • Requirements documentation • Requirements traceability matrix • Resource calendars • Risk register • Stakeholder register OPAs updates

Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*)—*Sixth Edition*, Project Management Institute, Inc., 2017, Figure 12-4, Page 482. Material from this publication has been reproduced with the permission of PMI.

- Agile process of conducting procurements will be the same other than need to ensure agile mindset support.

Conduct Procurements Process

1. Obtaining seller responses
2. Selecting a seller
3. Awarding a contract

Key Benefit:

Aligns internal and external stakeholder expectations through established agreements

Proposal Evaluation

Advertising
- Creates awareness of the opportunity.

Bidder conferences
- Ensure that all vendors have a clear and common understanding of the procurement.

Proposal evaluation techniques
- Scores against criteria (may include weighting).

Independent estimates
- Serve as a benchmark to assess reasonableness of bid.

Expert judgment
- Assists with evaluating seller proposals.

Analytical techniques
- Conduct research; analyze risk.

Negotiations
- Clarify terms, scope, schedule, price.

Discussion Question

How are bidder conferences conducted?

A. All potential sellers meet individually with the buyer.
B. They are conducted on an as-needed basis at the seller's request.
C. They take place at a single location to provide information to all sellers at the same time.
D. The buyer contacts the selected seller to negotiate the bid.

Conduct Procurements Outputs

Two primary outputs:

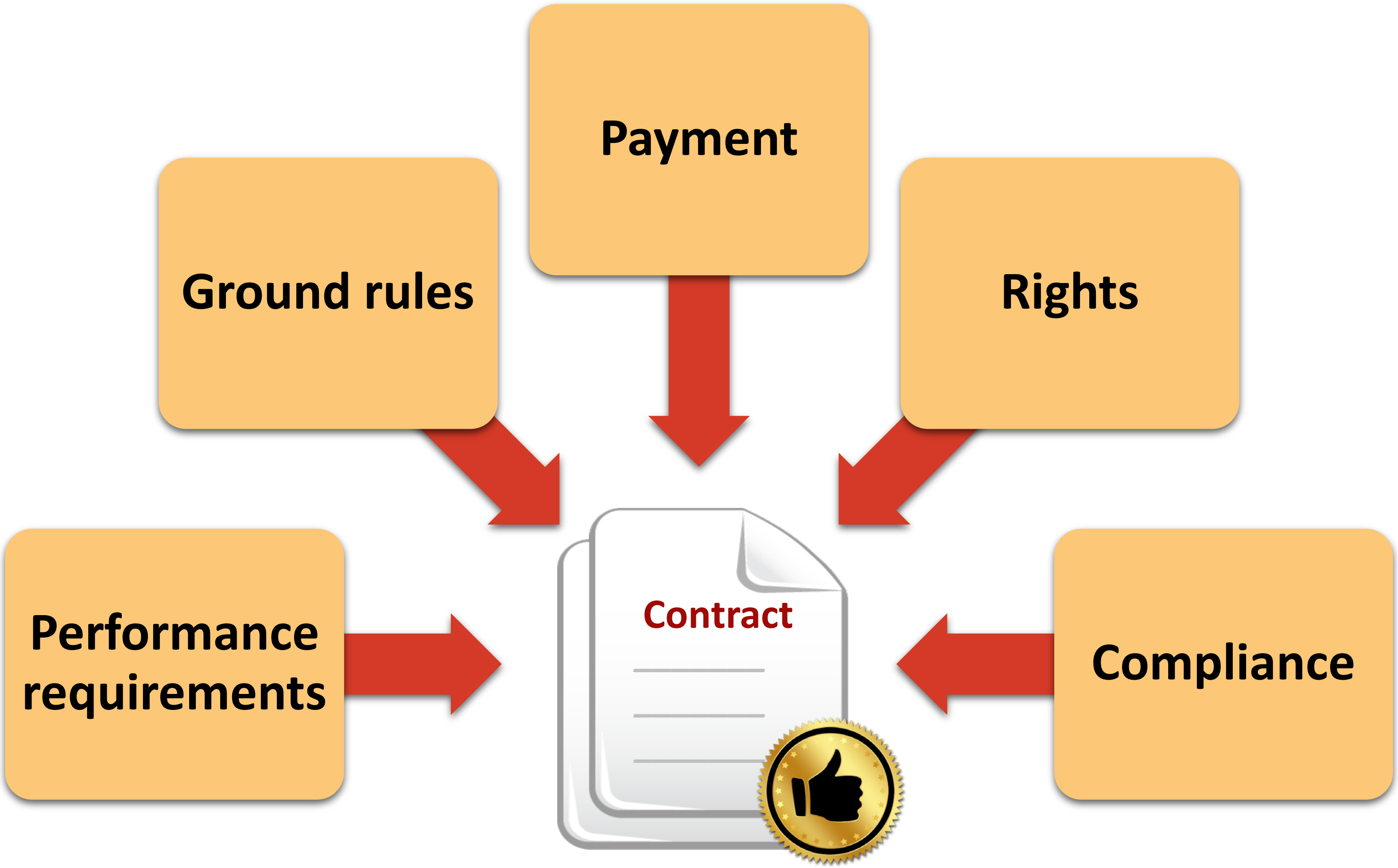
Selection of seller(s)

Agreements

Additional outputs

- Change requests
- Project management plan updates
- Project documents updates
- OPAs updates

Procurement Agreements



Predictive: Control Procurements

Inputs	Tools and Techniques	Outputs
Project management plan • Requirements management plan • Risk management plan • Procurement management plan • Change management plan • Schedule baseline Project documents • Assumptions log • Lessons learned register • Milestone schedule • Quality reports • Requirements documentation • Requirements traceability matrix • Risk register • Stakeholder register Agreements Procurement documentation Approved change requests Work performance data EEFs OPAs	Expert judgment Claims administration Data analysis • Performance reviews • Earned value analysis • Trend analysis Inspection Audits	Closed procurements Work performance information Procurement documentation updates Change requests Project management plan updates • Risk management plan • Procurement management plan • Schedule baseline • Cost baseline Project documents updates • Lessons learned register • Resource requirements • Requirements traceability matrix • Risk register • Stakeholder register OPAs updates

Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*)—*Sixth Edition*, Project Management Institute, Inc., 2017, Figure 12-6, Page 492. Material from this publication has been reproduced with the permission of PMI.

Control Procurements Process

This process is all about:

- Managing relationships.
- Monitoring contract performance.
- Making changes as needed.
- Making corrections as appropriate.
- Keeping things as collaborative discussions when possible (agile).

GOAL	• Seller performs work as described. • Seller delivers acceptable results. • Seller abides by contract terms. • Buyer provides promised rewards.

Tools and Techniques

Contract change control system Steps to change contract	**Payment systems** Track supplier's invoices
Performance reviews Review of seller's progress	**Claims administration** Resolving contract disputes

Project manager's responsibility:

- ✓ Ensure that work is performed according to contract baselines.
- ✓ Administer the contract.

Discussion Question

What is the purpose of the procurement audit?

A. To review the product being created
B. To review how well the seller is doing the job
C. To identify outstanding issues
D. To gather lessons learned

Outputs

Organization evaluates seller’s performance.

- Closed procurements
- Work performance information
- Procurement documentation updates
- Change requests
- Project management plan updates
- Project documents updates
- OPAs updates