

Procurement and Supply Chain

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MGM 431

Lecture 5





Procurement systems

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Course Agenda

Chapter

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1. Understand the contents of a procurement management plan, contract statement of work, and calculations involved in a make-or-buy analysis.
 2. Describe the work involved in planning purchases and acquisitions for projects.
 3. Understand the process of requesting seller responses and the difference between proposals and bids.
 4. Describe the seller selection process and recognize different approaches for evaluating proposals or selecting suppliers.
 5. Discuss the importance of good contract administration.
 6. Describe the contract closure process.
 7. Benefits of AI in Project Procurement Management.

Project Procurement Management

- Is important because it ensures that a project acquires the necessary goods, services, and resources from external suppliers in a timely, cost-effective, and quality-assured manner. Effective procurement management contributes significantly to project success.

Effective Project Procurement Management:

- Ensures the right resources are available at the right time.
- Reduces costs and procurement risks.
- Improves quality and supplier performance.
- Ensures compliance with contracts and regulations.
- Supports the successful completion of projects within scope, schedule, and budget.

What Went Wrong in Procurement

These are the problems or weaknesses that occurred during the procurement process:

- **Poor planning** or unclear specifications.
- **Supplier delays**, causing project schedule overruns.
- **Budget overruns** due to unexpected costs or poor cost estimation.
- **Low-quality goods or services** received from suppliers.
- **Poor supplier performance** or contract non-compliance.
- **Communication breakdowns** between buyers and suppliers.
- **Inadequate supplier evaluation**, leading to selecting unsuitable vendors.
- **Procurement policy violations** or lack of compliance.
- **Incomplete documentation**, making audits and tracking difficult.
- **Supply chain disruptions**, such as shortages, transportation issues, or geopolitical events.

What Went Wrong?

- **Companies often change their minds about procurement;**

For example, JPMorgan Chase announced a seven-year, \$5 billion deal to outsource much of its data processing to IBM, but they revoked the contract less than two years into its existence because the procurement plan no longer fit their business strategy

- The Australian Computer Society says sending work offshore may lower the number of students entering IT courses, deplete the number of skilled IT professionals, and diminish the nation's strategic technology capability
- Procurement can also cause security problems, including the protection of intellectual property, integrity of data, and the reliability of infrastructure in offshore locations

What Went Right?

- **What Went Right in Procurement**

- These are the strengths and successful practices during the procurement process:
- **Clear procurement planning** and well-defined requirements.
- **Competitive supplier selection** resulting in the best value for money.
- **Strong supplier relationships** and effective communication.
- **Timely delivery** of goods or services.
- **Procurement completed within budget.**
- **High-quality products or services** meeting specifications.
- **Compliance** with procurement policies and regulations.
- **Effective contract management**, reducing disputes and ensuring supplier performance.
- **Accurate documentation and record-keeping.**
- **Good risk management**, preventing supply disruptions.

What Went Right?

- Several organizations, such as The Boots Company PLC in England, outsource their IT services to save money compared with the cost of running the systems themselves
- Carefully planning procurement can also save millions of dollars, as the U.S. Air Force did by using a unit pricing strategy for a large office automation project

Lessons Learned

After reviewing what went right and what went wrong, organizations should:

- Improve procurement planning and forecasting.
- Strengthen supplier evaluation and selection criteria.
- Enhance communication with suppliers and stakeholders.
- Monitor supplier performance continuously.
- Update procurement policies and procedures based on lessons learned.
- Develop contingency plans to reduce future procurement risks.

Project Procurement Management Processes

- **Project procurement management:** acquiring goods and services for a project from outside the performing organization
- **Processes include:**
 - **Planning purchases and acquisitions:** determining what to procure, when, and how
 - **Planning contracting:** describing requirements for the products or services desired from the procurement and identifying potential sources or **sellers** (contractors, suppliers, or providers who provide goods and services to other organizations)

Project Procurement Management Processes (continued)

- **Requesting seller responses:** obtaining information, quotes, bids, offers, or proposals from sellers, as appropriate
- **Selecting sellers:** choosing from among potential suppliers through a process of evaluating potential sellers and negotiating the contract
- **Administering the contract:** managing the relationship with the selected seller
- **Closing the contract:** completing and settling each contract, including resolving any open items

Project Procurement Management Summary

Planning

Process: **Plan purchases and acquisitions**

Outputs: Procurement management plan, contract statement of work (SOW), make-or-buy decisions, requested changes to the project

Process: **Plan contracting**

Outputs: Procurement documents (i.e., RFP, evaluation criteria, updates to the contract SOW)

Executing

Process: **Request seller responses**

Outputs: Qualified sellers list, procurement document package, proposals

Process: **Select sellers**

Outputs: Selected sellers, contracts, contract management plan, resource availability information, updates to the procurement management plan, requested changes

Monitoring and Controlling

Process: **Administer the contract**

Outputs: Contract documentation, requested changes, recommended corrective actions, updates to organizational process assets and the project management plan

Closing

Process: **Contract closure**

Outputs: Closed contracts, updates to organizational process assets

Project Start

Project Finish

Solicitation Planning

Solicitation planning involves preparing of the documents needed for requesting bids (solicitation) and determining the evaluation criteria for the award of a contract.

Common documents used in this process are:

- **Request for Proposals**: used to solicit proposals from prospective sellers where there are several ways to meet the sellers' needs.
- **Requests for Quotes**: used to solicit quotes for well-defined procurements.
- **Invitations for bid or negotiation** and **initial contractor responses** are also part of solicitation planning.

Solicitation

Solicitation (or tendering) involves obtaining proposals, tenders or bids from prospective sellers. Prospective sellers do most the work in this process, usually at no cost to the buyer or the project. The buying organisation is responsible for advertising the “request to tender” (the solicitation).

Organizations can advertise to procure goods and services in several ways:

- Approaching the preferred vendor.
- Approaching several potential vendors.
- Advertising to anyone interested.

A bidders’ conference or similar meeting between the buyer and the prospective sellers can help clarify the buyer’s expectations.

Planning Purchases and Acquisitions

- Identifying which project needs can best be met by using products or services outside the organization
- If there is no need to buy any products or services from outside the organization, then there is no need to perform any of the other procurement management processes

Tools and Techniques for Planning Purchases and Acquisitions

- **Make-or-buy analysis:** general management technique used to determine whether an organization should make or perform a particular product or service inside the organization or buy from someone else
- Often involves financial analysis
- Experts, both internal and external, can provide valuable inputs in procurement decisions

Make-or-Buy Example

- Assume you can lease an item you need for a project for **\$800/day**; to purchase the item, the cost is **\$12,000** plus a daily operational cost of **\$400/day**
- How long will it take for the purchase cost to be the same as the lease cost?

Make-or Buy Solution

- Set up an equation so both options, purchase and lease, are equal
- In this example, use the following equation; let d be the number of days to use the item:

$$\text{\$12,000} + \text{\$400}d = \text{\$800}d$$

Subtracting $\text{\$400}d$ from both sides, you get:

$$\text{\$12,000} = \text{\$400}d$$

Dividing both sides by $\text{\$400}$, you get:

$$d = 30$$

- If you need the item for more than 30 days, it is more economical to purchase it

Contracts

- A **contract** is a mutually binding agreement that obligates the seller to provide the specified products or services and obligates the buyer to pay for them
- Contracts can clarify responsibilities and sharpen focus on key deliverables of a project
- Because contracts are legally binding, there is more accountability for delivering the work as stated in the contract
- A recent trend in outsourcing is the increasing size of contracts

Types of Contracts

- Different types of contracts can be used in different situations
 - **Fixed price or lump sum contracts:** involve a fixed total price for a well-defined product or service
 - **Cost reimbursable contracts:** involve payment to the seller for direct and indirect costs
 - **Time and material contracts:** hybrid of both fixed price and cost reimbursable contracts, often used by consultants
 - **Unit price contracts:** require the buyer to pay the seller a predetermined amount per unit of service
- A single contract can actually include all four of these categories, if it makes sense for that particular procurement

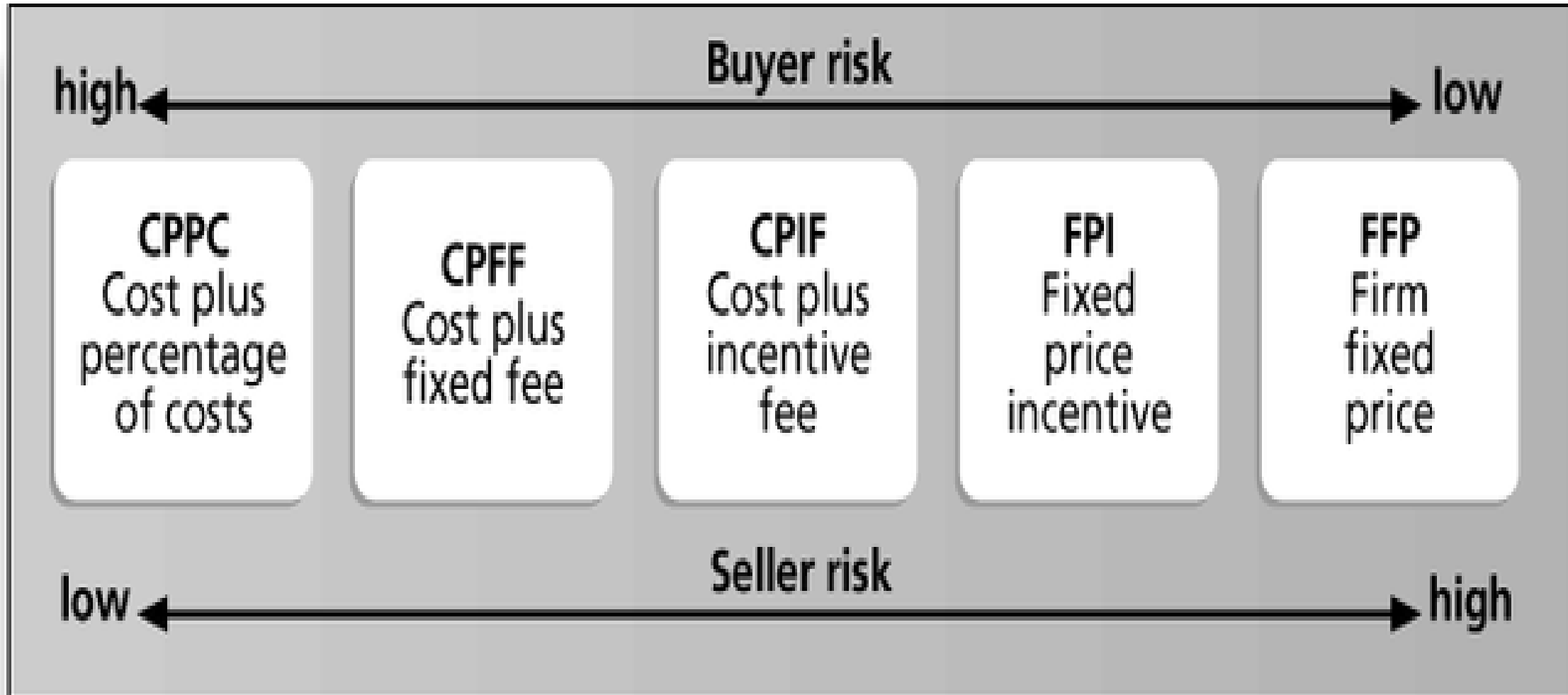
Point of Total Assumption

- The **Point of Total Assumption (PTA)** is the cost at which the contractor assumes total responsibility for each additional dollar of contract cost
- Contractors do not want to reach the point of total assumption because it hurts them financially, so they have an incentive to prevent cost overruns
- The PTA is calculated with the following formula:
$$PTA = (\text{ceiling price} - \text{target price}) / \text{government share} + \text{target cost}$$

Cost Reimbursable Contracts

- **Cost plus incentive fee (CPIF):** the buyer pays the supplier for allowable performance costs plus a predetermined fee and an incentive bonus
- **Cost plus fixed fee (CPFF):** the buyer pays the supplier for allowable performance costs plus a fixed fee payment usually based on a percentage of estimated costs
- **Cost plus percentage of costs (CPPC):** the buyer pays the supplier for allowable performance costs plus a predetermined percentage based on total costs

Contract Types Versus Risk



Contract Statement of Work (SOW)

- A **statement of work** is a description of the work required for the procurement
- If a SOW is used as part of a contract to describe only the work required for that particular contract, it is called a **contract statement of work**
- A SOW is a type of scope statement
- A good SOW gives bidders a better understanding of the buyer's expectations

Statement of Work (SOW) Template

- I. **Scope of Work:** Describe the work to be done to detail. Specify the hardware and software involved and the exact nature of the work.
- II. **Location of Work:** Describe where the work must be performed. Specify the location of hardware and software and where the people must perform the work
- III. **Period of Performance:** Specify when the work is expected to start and end, working hours, number of hours that can be billed per week, where the work must be performed, and related schedule information.
- IV. **Deliverables Schedule:** List specific deliverables, describe them in detail, and specify when they are due.
- V. **Applicable Standards:** Specify any company or industry-specific standards that are relevant to performing the work.
- VI. **Acceptance Criteria:** Describe how the buyer organization will determine if the work is acceptable.
- VII. **Special Requirements:** Specify any special requirements such as hardware or software certifications, minimum degree or experience level of personnel, travel requirements, and so on.

Planning Contracting

- Involves preparing several documents needed for potential sellers to prepare their responses and determining the evaluation criteria for the contract award
 - **Request for Proposals**: used to solicit proposals from prospective sellers
 - A **proposal** is a document prepared by a seller when there are different approaches for meeting buyer needs
 - **Requests for Quotes**: used to solicit quotes or bids from prospective suppliers
 - A **bid**, also called a tender or quote (short for quotation), is a document prepared by sellers providing pricing for standard items that have been clearly defined by the buyer

Outline for a Request for Proposal (RFP)

- I. Purpose of RFP
- II. Organization's Background
- III. Basic Requirements
- IV. Hardware and Software Environment
- V. Description of RFP Process
- VI. Statement of Work and Schedule Information
- VII. Possible Appendices
 - A. Current System Overview
 - B. System Requirements
 - C. Volume and Size Data
 - D. Required Contents of Vendor's Response to RFP
 - E. Sample Contract

Evaluation Criteria

- It's important to prepare some form of evaluation criteria, preferably before issuing a formal RFP or RFQ
- Beware of proposals that look good on paper; be sure to evaluate factors, such as past performance and management approach
- Can require a technical presentation as part of a proposal

Sample Proposal Evaluation Sheet

The following template could be used by a project team to help create a short list of the best three proposals.

		Proposal 1		Proposal 2		Proposal 3	
Criteria	Weight	Rating	Score	Rating	Score	Rating	Score
Technical Approach	30%						
Management Approach	30%						
Past Performance	20%						
Price	20%						
Total Score	100%						

Requesting Seller Responses

- Deciding whom to ask to do the work, sending appropriate documentation to potential sellers, and obtaining proposals or bids
- A bidders' conference can help clarify the buyer's expectations

Source Selection

Once buyers receive proposals, they must select a vendor or decide to cancel the procurement.

Source selection involves:

- **Evaluating bidders' proposals.**
- **Choosing the best one.**
- **Negotiating the contract.**
- **Awarding the contract.**

It is highly recommended that buyers use formal evaluation procedures for selecting vendors.

Buyers often create a “short list”.

Source Selection

- After developing a short list of possible sellers, organisations will often undertake more detailed evaluation.
- The following figure lists items that might be part of an evaluation of the top three vendors for a large information technology project.
- All of the evaluation criteria are given a certain number of possible points (based on ranked importance), and the project team members and other stakeholders then evaluate each proposal by assigning points to each criteria.

Seller Selection Process

- Organizations often do an initial evaluation of all proposals and bids and then develop a short list of potential sellers for further evaluation
- Sellers on the short list often prepare a best and final offer (BAFO)
- Final output is a contract signed by the buyer and the selected seller

Detailed Criteria for Selecting Vendors

Criteria	Possible Points	Vendor 1 Points	Vendor 2 Points	Vendor 3 Points
Project manager's educational background and experience	10	8	6	9
Project manager is PMP certified	5	5	0	5
Presentation on management approach	5	4	3	5
Organization's project management methodology	10	7	4	9
Total Score	30	24	13	28

Administering the Contract

- Ensures that the seller's performance meets contractual requirements
- Contracts are legal relationships, so it is important that legal and contracting professionals be involved in writing and administering contracts
- It is critical that project managers and team members watch for **constructive change orders**, which are oral or written acts or omissions by someone with actual or apparent authority that can be construed to have the same effect as a written change order

Suggestions for Change Control in Contracts

- Changes to any part of the project need to be reviewed, approved, and documented by the same people in the same way that the original part of the plan was approved
- Evaluation of any change should include an impact analysis; how will the change affect the scope, time, cost, and quality of the goods or services being provided?
- Changes must be documented in writing; project team members should also document all important meetings and telephone phone calls

Suggestions for Change Control in Contracts (continued)

- Project managers and teams should stay closely involved to make sure the new system will meet business needs and work in an operational environment
- Have backup plans
- Use tools and techniques, such as a contract change control system, buyer-conducted performance reviews, inspections and audits, and so on

- A consultation company developed a list of best practices from experienced outsourcers throughout the world:
 1. Build in Broad Business Outcomes Early and Often
 2. Hire a Partner, Not Just a Provider
 3. It's More Than a Contract, It's a Business Relationship
 4. Leverage Gain-Sharing
 5. Use Active Governance
 6. Assign a Dedicated Executive
 7. Focus Relentlessly on Primary Objectives

Contract Clauses

- Contracts should include specific clauses to take into account issues unique to the project
- Can require various educational or work experience for different pay rights
- A **termination clause** is a contract clause that allows the buyer or supplier to end the contract

Closing the Contract

- Involves completing and settling contracts and resolving any open items
- The project team should:
 - Determine if all work was completed correctly and satisfactorily
 - Update records to reflect final results
 - Archive information for future use
- The contract itself should include requirements for formal acceptance and closure

Conclusion

- It is essential that organisations obtain good contracts that minimise risk while ensuring optimum results through effective contract administration.
- With the current competitive and demanding conditions found in information technology projects,
- **It is very important to prepare contracts with great care and expert assistance.**
- It is equally important to **initiate and follow effective contract administration procedures.**

Conclusion

The following guidelines can help can assist in preparing proposals, contracts and administrative procedures:

- Use **checklists** and **templates** where appropriate.
- **Evaluate risks** by reference to suggested contract provisions where appropriate.
- All major proposals and contracts, and contracts with questionable provisions, should be reviewed by a **contract law expert**.
- **Appropriate pricing** and/or **insuring of risk** under the contract.
- **Periodic review, improvement** and **updating** of contract preparation and administration procedures.

Benefits of AI in Project Procurement Management

- **Improved Decision-Making** AI analyzes large volumes of procurement data and provides accurate recommendations for supplier selection and purchasing decisions.
- **Cost Reduction** AI identifies cost-saving opportunities, optimizes purchasing decisions, and reduces unnecessary spending.
- **Faster Procurement Processes** Automation reduces manual tasks such as preparing purchase orders, processing invoices, and approving procurement requests.
- **Better Supplier Selection** AI evaluates suppliers based on price, quality, delivery performance, financial stability, and past performance.
- **Real-Time Monitoring** AI dashboards provide continuous visibility into procurement activities, supplier performance, procurement costs, and delivery status.

Benefits of AI in Project Procurement Management

- **Risk Management** AI predicts potential procurement risks, including supplier failures, delivery delays, market fluctuations, and supply chain disruptions.
- **Contract Management** AI reviews contracts, identifies compliance issues, monitors contract performance, and alerts managers to important deadlines and obligations.
- **Demand Forecasting** AI analyzes historical and real-time data to predict future procurement needs, helping organizations maintain appropriate inventory levels.
- **Fraud Detection** AI detects unusual purchasing patterns, duplicate invoices, and suspicious transactions, reducing the risk of fraud.
- **Continuous Improvement** AI learns from previous procurement projects to improve future sourcing strategies, supplier selection, and overall procurement performance.

Challenges of Using AI in Procurement

- High implementation and maintenance costs.
- Need for high-quality, accurate data.
- Integration with existing procurement and enterprise systems.
- Data privacy and cybersecurity concerns.
- Employee training and change management.
- Ethical considerations, such as avoiding biased supplier evaluations.

Summary of Learning Objectives

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1. Understand the contents of a procurement management plan, contract statement of work, and calculations involved in a make-or-buy analysis.
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Thank You