

Project Procurement and Supply Chain

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PMG 433

Lecture 6



The background features a series of vertical panels with rounded ends. The first panel on the left shows a person's hands typing on a laptop. The subsequent panels are semi-transparent and contain white line-art icons: a graduation cap, a play button, a target with an arrow, an open book, and a magnifying glass. The overall color palette is warm, with shades of brown, orange, and blue.

Procurement: Process overview and emerging project management techniques

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Course Agenda

Chapter

1. To explain more about the scope of procurement.
2. To overview the project procurement management processes.
3. To explain the procurement planning steps.
4. To differentiate between the RFP and RFQ and RFI
5. AI and Emerging Project Management Techniques

PROCUREMENT

- **Effective procurement** is critical for effective project management.
- **Procurement** means acquiring goods and/or services from an outside source.
- **Procurement** – The process of acquiring and evaluating goods and services beginning with determining needs through product utilization, conclusion of contracted service, or until the end of the useful life of a capital equipment item.
- Depending upon the specific type of project being managed, over 50 percent of the total project cost can be attributed to parts, supplies, and services procured, and for many high-technology projects, this procurement fraction can approach 90 percent.
- Further, because of long lead times, procured items nearly always define the critical path through the project schedule network.

Project Procurement Management Processes

Project procurement management

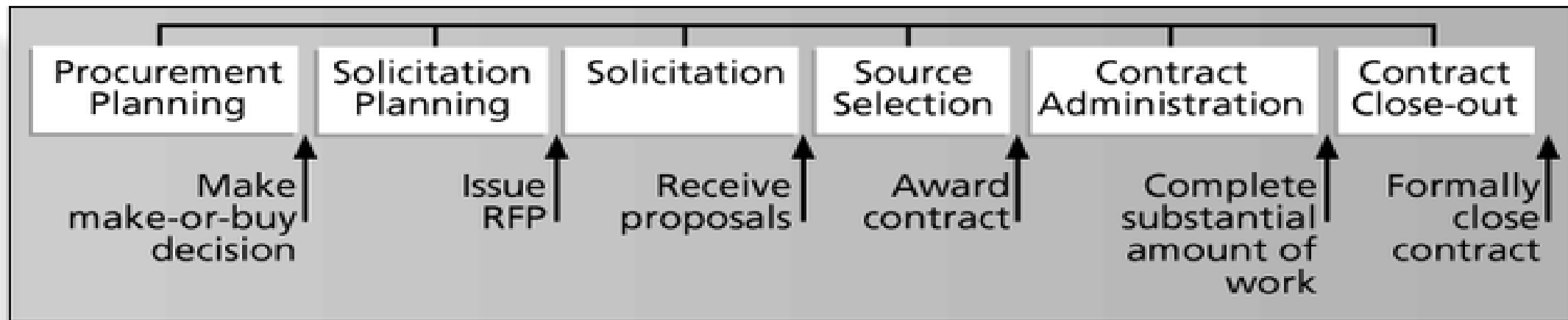
Includes the following processes for acquiring goods and services from outside the project organization

- **Procurement planning**: determining what to procure and when.
- **Solicitation planning**: documenting product requirements and identifying potential sources.
- **Solicitation**: obtaining quotations, bids, offers, or proposals as appropriate.
- **Source selection**: choosing from among potential vendors.
- **Contract administration**: managing the relationship with the vendor.
- **Contract close-out**: completion and settlement of the contract.

Project Procurement Management Processes & Key Outputs

The figure below summarises the major processes involved in procurement management, and identifies important milestones associated with each stage.

For example, after procurement planning the key milestone is the “**make or buy decision**”. This will determine if further procurement management processes are required.



❑ **Procurement planning** involves identifying which project needs can be best met by using products or services outside the organization.

It includes deciding:

- **Whether** to procure.
- **How** to procure.
- **What** to procure.
- **How much** to procure.
- **When** to procure.

❑ It is essential to be creative when planning procurement.

❑ Even though a company may be viewed as a competitor, it will often be advantageous to collaborate on some projects.

Inputs to Procurement Planning

❑ The inputs needed for procurement planning include:

- **The project scope statement.**
- **Product description.**
- **Market conditions.**
- **Constraints and assumptions.**

❑ It is important to define the scope of the project, the products, market conditions, and constraints and assumptions.

❑ However, it is also essential to know exactly **why** you want to procure goods or services.

Procurement management will often incorporate the following:

- **Make-or-buy analysis**: determining whether a particular product or service should be made or performed inside the organization or purchased from someone else. Often involves financial analysis.
- **Experts**, both internal and external, are valuable assets in procurement decisions.
 - **Internal experts** are particularly useful in providing knowledge of organisational and personnel issues.
 - **External experts** can provide expert judgement, especially with regard to vendors and technology issues.

Project Procurement Plan

- ❑ **A Project Procurement Plan** is a formal document that describes how the project team will acquire the goods, services, equipment, and works needed to complete the project successfully.
- ❑ It defines the procurement strategy, schedule, budget, contract types, supplier selection methods, roles and responsibilities, and risk management approach.
- ❑ The Project Procurement Plan is typically developed during the Project Planning phase and serves as a guide for managing all procurement activities throughout the project lifecycle.

Objectives of a Project Procurement Plan

The Project Procurement Plan aims to:

- Ensure the timely acquisition of project resources.
- Support project scope, schedule, and budget.
- Select qualified suppliers through a fair and transparent process.
- Minimize procurement risks.
- Ensure compliance with organizational policies and legal requirements.
- Improve communication among project stakeholders.
- Achieve value for money while maintaining quality.

Procurement Plan

Procurement Planning (cont.)

- **Procurement plan linked to project implementation schedule:**
 - Consulting services
 - Goods and / or works
 - Major contracts
 - Phasing of contracts
 - Critical path

Decide contract packages

- **WHAT**
(like items, large, small, values slice and packages)
- **HOW**
(ICB, NCB, other, co-financing)
- **WHEN**
(each step, each package)
- **WHO**
(to do, to review)

Procurement Planning: **Timing**

- **TIMING**

(Preparation, approvals, delays)

- **CONSTRAINTS**

(Technical, PIU staffing, legal, training, other)

- **DETERMINE LEAD TIME**

- Administrative
- Manufacture
- Delivery
- Construction period

Procurement Planning: **Schedule**

- ❑ Critical dates for each package
- ❑ Tabulate / prepare bar chart
- ❑ Periodically update
- ❑ Use of monitoring system

Procurement Process **Definition**

The Procurement Process consists of the full cycle of activities (steps) to undertake to **fulfill** a specified need, starting from identification of the said need

Procurement Steps

□ Identification of needs

- List of goods (e.g. equipment, materials, plant, IT systems)
- Types of works (large, small, very small)
- Associated services: transport, distribution, training, maintenance

Procurement Steps (cont.)

❑ Project implementation plan

- Design and specification
- Packaging: organizational implementation
- Schedule: time frame of implementation

❑ Bidding methods and documents

- Competitive methods
- Shopping methods
- Direct contracting

Procurement Steps (cont.)

- Advertising

- Bidding process

- Issuance of bidding documents or request for quotations
- Bid or quotations submission and opening
- Bid or quotation evaluation

Procurement Steps (cont.)

- ❑ **Contract and purchase order award**
 - Notification
 - Signature
 - Effectiveness
- ❑ **Contract management**
 - Contract execution
 - Delivery, commissioning, acceptance
 - Warranty
 - Maintenance period
- ❑ **Need fulfilled**

Competence Requirements in Procurement Process

DETERMINING NEEDS

1. Forecasting Requirements
2. Acquisition (procurement), Planning and Packaging
3. Initiating Procurement (requisition, budget approval)

ANALYSIS OF REQUIREMENTS

4. Preparation of Technical Specifications (goods / equipment)
5. Detailed Design and Drawings (Civil Works)
6. Terms of Reference (TOR) - (Services)

Competence Requirements in Procurement Process (cont.)

EXTENT OF COMPETITION

7. Sources of Supply (market research)
8. Lease vs. Purchase
9. Evaluation Factors (technical and commercial)
10. Method of Procurement (with or without pre-qualification)

Competence Requirements in Procurement Process - **Bidding**

TERMS AND CONDITIONS

11. Contract Types

12. Need for Securities (Bid and Performance)

13. Selection of INCOTERM

13. Preparation of Tender Documents

14. Prescribing insurance requirements

14. Publicizing Proposed Procurements

15. Pre-bid / Pre-proposal Conferences

16. Amending Bidding Documents

17. Cancelling Tenders

Competence Requirements in Procurement Process - **Bidding**

BID EVALUATION

- 18. Receiving Bids / Rejecting Late Bids
- 19. Bid Opening
- 20. Preliminary Examination / Determination of Responsiveness
- 21. Technical Evaluation
- 22. Cost Analysis
- 23. Evaluation: Other Terms and Conditions
- 24. Clarification of Issues before Contract Signing

Competence Requirements in Procurement Process - **Bidding**

SELECTION FOR AWARD

25. Subcontracting Requirements

26. Post-Qualification

EXECUTING AWARD

27. Preparing Awards

28. Debriefing

29. Protests by Bidders

30. Dealing with Fraud & Corruption

Competence Requirements in Procurement Process – **Contract Execution**

ORGANIZATION

31. Contract Administration Planning

32. Consent to sub-contracts

MONITORING AND RESOLUTION OF PERFORMANCE PROBLEMS

33. Monitoring, Inspection and Acceptance

34. Delays

35. Stop Works (Suspension of Works)

36. Remedies

37. Reporting Performance Problems / Contemporary record

Competence Requirements in Procurement Process – **Contract Execution**

PROCEDURES - PAYMENT

- 38. Variation Orders
- 39. Progress Payment / Retention
- 40. Price Adjustment

PROCEDURES - ACCOUNTING

- 41. Cost Accounting Systems

PROCEDURES - MODIFICATION / OPTIONS

- 42. Contract Amendments

Competence Requirements in Procurement Process – **Contract Execution**

PROCEDURES - TERMINATION

- 43. Termination for Default / Convenience
- 44. Warranty / Maintenance / Defects Notification Period
- 45. Contract close-out

PROCEDURES - CLAIMS / DISPUTES

- 49. Claims
- 50. Dispute Settlement Procedures

RFP/RFQ Process

Difference of RFP and RFQ and RFI

Difference of RFP and RFQ and RFI

- Request for Proposal (RFP)
- Request for Quote (RFQ)
- Request for information (RFI)

Difference of RFP and RFQ and RFI

DEFINITION of RFP:

- **Request for Proposal (RFP)** - A solicitation to prospective suppliers where the supplies and/or services described are highly complex, undeveloped products and/or services, requiring a response detailing technical and management expertise and a proposed design/development approach.

Difference of RFP and RFQ and RFI

DEFINITION of RFQ:

- **Request for Quotation (RFQ)** - A solicitation to prospective suppliers wherein the requirements described are existing, “off-the-shelf” equipment, build-to-print parts with known specifications, common services, or otherwise sufficiently defined so that the award can be made on the basis of price and past performance from the responsive bidders.

Difference of RFP and RFQ and RFI

DEFINITION of RFI:

- Request for information (RFI) - is a standard business process whose purpose is to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes.
- An (RFI) is primarily used to gather information to help decide on what steps to take next..
- (RFIs) are therefore seldom the final stage and are instead often used in combination with the following: request for proposal (RFP), and request for quotation (RFQ).

Types of solicitations

- **A solicitation** is a document, sent to prospective contractors by a Government agency, requesting the submission of offers or information.

This is a generic term that includes the following types of solicitations:

- **Invitations for Bids (IFBs)**
- **Requests for Proposals (RFPs)**
- **Requests for Quotations (RFQs)**

Invitation for Bids (IFB)

- The Invitation for Bid (IFB) is the solicitation document used in sealed bidding procurements.
- IFBs must describe the government's requirements clearly, accurately, and completely.
- It includes all documents needed by prospective bidders for the purpose of bidding plus all terms and conditions of the prospective contract (except price) so that all bidders will submit bids on the same basis and award can be made solely on the basis of price and price-related factors.

Buyer's Role in the RFQ/RFP Process

- Upon receipt of a requirement the Buyer reviews and determines if the originating organization(s) has furnished complete specifications, blueprints, statements of work (SOW), description of item(s) to be purchased, etc., so that requirements can be adequately defined in the RFQ/RFP and any resulting Purchase Order (PO).
- The Buyer will contact originating organization(s) or Integrated Product Teams (IPTs) if additional data is required.

RFQ Structure

- *The Buyer* is responsible for the entire content of the RFQ. The RFQ should be structured in such a manner to assure that all requirements are clearly delineated on the RFQ, and that the supplier clearly understands the requirements.
- In some cases, the Buyer may need to provide additional clarification of the requirements to assure complete understanding by the supplier. In such cases, the Buyer is responsible for providing consistent information to all solicited suppliers.

Supplier Steps To Providing A Responsive Proposal

- Do's

- Read the RFP Instructions
- Contact the Buyer regarding RFP questions
- Meet the RFP deadline and provide a Proposal which meets the RFP instructions
- Protect PWR proprietary data
- Protect Export controlled data

- Don'ts

- Contact technical personnel for questions during the proposal process unless Buyer instructed
- Wait to the last minute to ask for an extension
- Continually ask for extensions

Request for proposal

Key objectives

- Obtain correct information to enable sound business decisions.
- Ensure that all suppliers have an equal understanding of the requirements.
- Enable a broader and creative range of solutions to be considered.
- Responsive Bids allow PWR purchasing to evaluate proposals to obtain a favorable deal.

Evaluation Criteria

- Responsive Bid
- Price
- Delivery
- Technical Solution
- Past Performance (SPI)
- Financial Stability
- Agreed Upon Terms & Conditions

Steps In The RFP Evaluation Process

- **Step One:** Review All Proposals
- **Step Two:** Determine Status. Determine if proposal is “responsive” or “non-responsive”
- **Step Three:** Score Proposals based on criteria established in the RFP
- **Step Four:** Discuss Proposals. The evaluation committee reaches a “unified understanding” of the criteria and corresponding responses. Individual scores may be adjusted at this point based on discussion. Tally results.
- **Step Five:** Interview. This step is optional. This is an opportunity for both sides to explain their viewpoints

Steps In The RFP Evaluation Process

- **Step Six**: Discussion/Negotiation. This step can be optional but may be required.
- **Step Seven**: Best and Final Offer. This is optional. Once a BAFO is received the committee will evaluate it in the same manner as the original proposal.
- **Step Eight**: Recommendation. Written recommendation includes scores, justification and rationale for the decision.
- **Step Nine**: Management Review of committee scoring and justification. If accepted, the winning proposal will be used to roll up in PWR proposal or award PO to supplier if using company funds or after PWR is awarded a contract.

AI and Emerging Project Management Techniques

Emerging Technique

AI Contribution

Project Benefit

Predictive Analytics

Forecasts demand, costs, and procurement risks

Better planning and decision-making

Machine Learning

Learns from procurement data to improve recommendations

More accurate supplier selection and forecasting

Robotic Process Automation (RPA)

Automates routine procurement activities

Faster processing and lower administrative costs

Big Data Analytics

Analyzes large volumes of procurement and market data

Better strategic purchasing decisions

Blockchain Integration

Enhances transparency and traceability when combined with AI

Improved trust and fraud prevention

Cloud Procurement Systems

Provides centralized procurement data for AI analysis

Real-time collaboration and visibility

Agile Project Management

Uses AI insights to respond quickly to changing project needs

Greater flexibility and adaptability

Sustainable Procurement

AI evaluates suppliers' environmental and social performance

Supports ESG and sustainability objectives

Summary of Learning Objectives

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Essential Reference

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- Supply Chain Council



Thank You