

Project Procurement management for Project Managers

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What is Procurement Management?

Procurement management includes the processes required to acquire goods or services from outside the project team. It includes Contract Management and Change Control Processes. And includes controlling contract issues by an outside organization

What is a CONTRACT?

A Contract is a legally binding detailed formal document that refers to an entire agreement between 2 or more parties. All terms & conditions of a Contract must be met by both the parties. Anything not mentioned in the Contract is not Legally Binding to anyone.

Types of Contracts

1. Fixed Price (Lump Sum): If the scope is clear and well defined, we can sign a contract on a fixed total price and the risk is on the seller side as the buyer need not bother about any variations in the cost. There are 3 types of fixed price contract as shown below:
 - A. Firm Fixed Price (FFP). Seller has to fulfill the obligations with in a fixed price. The risk is on the seller side as any cost overrun will be borne by the seller.
 - B. Fixed Price Incentive Fees Contract (FPIF) (Based on the complexities or certain conditions apart from fixed price buyer will pay some incentive, if the seller is completing the project on time or meet certain performance conditions set by the buyer etc. If the cost reaches above a ceiling limit, the seller has to bear the excess cost.)
 - C. Fixed Price with Economic Price Adjustment Contracts (FP-EPA) (for a long duration project, to meet the escalation or price variations of some materials or labour charges, buyer has to pay a Fixed Price and cost of escalation within the duration of the project, it protects both the parties from price inflation.)
2. Cost Reimbursable Contract: In this type of contract scope is not exactly defined and not known to both the parties and the price is open based on the final incurred costs of the product. In this type of contract risk is on the buyer side as buyer has to pay for facing the uncertainties. There are 3 type of cost reimbursable contract as given below:

- A. Cost plus Fixed Fees Contracts (CPFF). (Here the buyer has to pay the actual cost of the work plus the additional fixed fee for doing the work to the seller. Fee will not be changed based on the seller performance. Risk is moderate to the buyer as the fee is fixed and costs are variable)
 - B. Cost plus Incentive Fees Contracts (CPIF). (In this type of contract the buyer has to pay the cost of the work as it incurred and an incentive fee for exceeding the performance criteria. In the end of the project cost can be higher or lower, then both the parties share the cost based on the pre-negotiated cost sharing formula. Risk is moderate as costs are variable)
 - C. Cost plus Award Fee Contracts (CPAF) (The buyer has to reimburse all the allowable cost and award a price based on meeting the performance criteria mentioned in the contract by the seller. Risk is moderate as there is a conditional payment.
3. Time and Material: This is also called unit price contract and it is the mix of fixed price and cost reimbursable contract. In this cost is charged to the identified tasks of an ongoing activity, and for doing some work for which scope is not clear ex. research. Here Scope per unit is defined. For example some software companies are charging as cost per hour for their effort. In this cost can grow to a dangerous level and the risk is on the buyer. (Seller has no incentive to control costs)

Plan Procurement

This is the first process in this knowledge area comes in planning process group which identifies products or services that can be acquired from outside the project organization versus needs that can be accomplished by the project team. Which involves consideration of potential sellers. Procurement planning can be done based on the make or buy decisions and can influence project schedule, resource estimating. Plan procurement includes reviewing the risks involved and type of contract to be used.

Plan Procurement - Inputs

1. Project Management Plan
 - Project Scope Statement (describes scope, results or list of deliverables, acceptance criteria, technical issues and concerns, constraints and assumptions)
 - WBS (Components of work which can be outsourced or do it internally)
 - WBS Dictionary (Describes the work packages and code of account identifier)
2. Requirements Documentation (Including legal and contractual requirements for procurement)

3. Risk Register (provides list of risk that can be managed by procurement processes)
4. Activity Resource Requirements (Man, machine and material requirement)
5. Project Schedule (dates of deliverables, required timeliness etc.)
6. Activity Cost Estimates (Internal Cost Estimates for activities being procured and for validating the bids accordingly)
7. Stakeholder Register (provides information regarding the project participants)
8. Enterprise Environmental Factors (provides information regarding market conditions, products and services available, suppliers details etc.,)
9. Organizational Process Assets (standard operating procedures of an organization, management information systems used in procurement etc.,)

Plan Procurement – T & T

1. Make or Buy Analysis:

Determine whether a product or service needs to be procured or can be produced by the project team.

Reasons to Buy:

1. Capacity and Capability (If the organization not having the capacity & capability to produce in house, they buy it.)
2. Exploit Opportunity (production of certain product in house may cause substantial loss in that case buy it)
3. Shift risk (to shift risks involved in cost, time, or scope organizations will outsource their work)

Reasons to Make:

1. Idle resources (To engage available idle resources in the organization)
2. Want to control (The organization will have full control, if they produce the product or do the job in-house.)
3. Confidential information will not be leaked out to the competitors.
2. Expert Judgment (technical details of the product can be obtained from experts)
3. Market Research for planning the procurement and to decide whether to buy or make
4. Meetings with potential bidders or organizations and with team members etc.

Plan Procurement – Outputs

1. Procurement Management Plan: includes but not limited to:
 - Types of contracts to be used
 - Risk Management Issues

- Procurement Processes
 - Standardized Procurement Documents
 - Responsibilities
 - Pre-qualified sellers
 - Scheduled dates for deliverables
2. Procurement Statement of Work: includes Specifications, quality levels, quantity desired and other requirements. it describes the procurement item in sufficient detail to allow sellers to determine if they are capable of providing the item. It also provides guideline for managing multiple providers.
 3. Procurement Documents: are used to solicit proposals, quotes, and bids from sellers
 - Request for Information (RFI): request all information regarding the product or work.
 - Request for Proposal (Tender) (RFP): request a price and detailed proposal on how the work will be accomplished.
 - Request for Bid (RFB): Request price of all the work
 - Request for Quotation (RFQ): price quote per item, hour, or foot (as in T&M contracts).
 4. Source Selection Criteria: The project team must be prepared to compare the proposals received in an unbiased manner based on identified & documented selection criteria to rate or score proposals.

Includes but not limited to:

- Past performance of the seller
- Understanding of need, how well the seller understand the requirement
- Overall or life cycle cost, chosen seller is reasonable in cost
- References from other parties or organizations about sellers work
- Technical capability and approach, whether seller is technologically sound to carry out the work, whether they have processes existing for doing similar types of work
- Risk (How much risk is associated with the chosen seller)
- Management approach, whether the seller has well defined management processes or standards like projects are managed by PMPs etc.,

- Financial stability and capacity, whether the seller has sufficient turnover
5. Make or Buy Decision (Decision made whether to purchase or make in-house)
 6. Change Requests (plan procurement may involve in a corrective or preventive actions depending upon the situation)
 7. Project Document Updates (requirement document, requirement traceability matrix and risk register updated)

Conduct Procurement

This is the second process in this knowledge area which comes in execution process group for obtaining seller responses, selecting a seller, and awarding a contract. The key benefit of this process is to provide alignment of internal and external stakeholder expectations through established agreements.

Conduct Procurement – Inputs

1. Procurement Management Plan (guides the procurement processes from beginning to end)
2. Procurement Documents (It provides the base for auditing during procurement processes)
3. Source Selection Criteria (provides supplier capabilities, types of contract, delivery dates, product cost etc.)
4. Seller Proposals (Information such as product or service details, evaluation criteria etc.)
5. Project Documents (risk related contract document that is risk register and other documents)
6. Make or Buy Decisions
7. Procurement Statement of Work (location of project, duration, quantum of work to be executed, quality parameters to be followed, specifications and performance data etc.)
8. Organizational Process Assets (the list of previous vendors, list of prospective sellers matching the specifications, prior contracts of similar types for reference)

Conduct Procurements – T & T

1. Bidder Conferences (Also known as contractor, vendor, or pre-bid conferences. The purpose of these conferences is to clarify any of the information not clearly stated in the RFP. Creates a clear and common understanding of the procurement. Proposals

received will be more clearly aligned with project requirements, due to the fact that bidder conferences make the requirements clear.

2. Proposal Evaluation Techniques (as agreed by Evaluation Committee, comparisons are made based on prices and technological competencies)
3. Independent Estimates (Internal check or benchmark which help to uncover SOW deficiencies & ambiguities or large variations in prices quoted by the sellers)
4. Expert Judgment (involve judgments from experts)
5. Advertising, Increase the number of potential sellers to take part in this process
6. Analytical Techniques for analyzing the past track record of the seller to ensure project success.
7. Procurement Negotiations (Negotiations can cover the following areas:
 - Responsibilities and authorities
 - Applicable terms and law
 - Scope, technical & business management approaches
 - Contract financing (Payment Schedule)
 - Price

Conduct Procurement – Outputs

1. Selected Sellers (the best sellers are selected)
2. Agreements Includes, but not limited to:

Statement of work, location, schedule, Pricing, Change requests, Payments, product support, Insurance, Incentives, roles and responsibilities, acceptance criteria, performance bonds, termination mechanisms, warranty, penalty etc.
3. Resource calendars (resource calendars has to updated with the new products)
4. Change Requests are generated based on discussions and negotiations and carried out through integrated change control.
5. Project management plan updates (Scope, Cost, Schedule, Procurement Management Plan, Communication management plan etc.)
6. Project management document updates (Statement of work, risk register and requirement documents)

Control Procurements

This is the third process in this knowledge area which comes in monitoring and control process group to manage procurements relationships, monitor contract performance and make changes and corrections as needed.

Control Procurements - Inputs

1. Project Management Plan (contains the subsidiary plan procurement plan)
2. Procurement Documents(Procurement records, contract award and statement of work)
3. Agreements (between buyer and seller)
4. Work Performance Reports (Technical documentation and other deliverables information developed by the seller. Seller Performance Reports.)
5. Approved Change Request. (approved by the change control board for implementation control)
6. Work Performance Information: Includes;
 - The extent to which quality standards are being met.
 - Indicates which deliverables have been completed.
 - Identifies which costs have been incurred.
 - Whether the project is on time
 - Seller invoices: submitted from time to time to request payment for work performed

Control Procurements – T & T

1. Contract Change Control System (Defines the process how the contract may be modified. Includes the paperwork, tracking systems, dispute resolution procedures, and approval levels necessary for authorizing changes. Should be integrated with the integrated change control system.)
2. Procurement Performance Review; A structured review on the sellers' progress to deliver as per planned scope – quality – schedule etc..
3. Inspections and Audits; required by the buyer and supported by the seller to identify any weaknesses in the seller's work performance or deliverables. Inspections are carried out as per the scheduled but audits are carried out on random basis, these are conducted during the execution phase of the project.
4. Performance Reporting. (sellers work performance data evaluated and compared with the planned values and reports are made to provide information regarding the sellers progress against the contract)

5. Payment Systems: Handled by the accounts payable department of the performing organization (buyer). Must include reviews and approvals of seller invoices by the project team prior to issuing a payment to a seller.
6. Claims Administration: (disputes or appeals) Where buyer and seller cannot agree on compensation for the change, or that a change has even occurred. Should be documented and managed in accordance with the terms of the contract. It might involve arbitration or litigation. (Arbitration is the settlement out of court with the help of a mediator, litigation is the legal procedures in the court)
7. Record Management System :(A set of processes and automation tools consolidated into the project Management Information System to manage contract documentation and records. This help the project manager in organizing all contract related and progress related records)

Control Procurements – Outputs

1. Work Performance Information, includes but not limited to:

- Updated Schedules
- Invoices
- Technical documentation
- Performance reports

This helps to monitor and control procurement, enables forecasting risks.

2. Change Requests (Change requests are generated if the procurement is not done as per the plan)
3. Project Management Plan Updates (Elements like procurement plan, schedule and cost baselines)
4. Project Documents Updates (all the procurement documents with approved and unapproved change request)
5. Organizational Process Assets Updates: including
 - Correspondence: communication between buyer & seller.
 - Payment Schedules and requests.
 - Seller performance evaluation documentation: The buyer document s seller's ability to continue to perform work on the project or to be allowed to work on future projects.
 - Basis for early termination

- Update the qualified seller lists in the organization.

Close Procurements

This is the fourth and last process in this knowledge area which comes under closing process group. This is the process for completing each project procurement. This Involves the verification of all of the procurement work was completed and accepted (Product Verification).

Close Procurement - Inputs

1. Project Management Plan (Procurement management plan is the subsidiary plan of project management plan)
2. Procurement Documentation
 - The contract.
 - Supporting schedules
 - Requested and approved changes
 - Technical documentation
 - Performance reports
 - Financial reports

Close Procurement – T & T

1. Procurement Audits: (A structured review of the procurement process from Plan Procurements to Control Procurements. The objective is to identify the successes & failures that warrant recognition.)
2. Procurement Negotiations (To settle all outstanding claims and disputes, issues etc.)
3. Records Management System. (All the contract documents regarding procurement)

Close Procurement – Output

1. Closed Procurements: Formal written notice that the contract has been completed as mentioned in the terms and condition of the contract and it is included in the procurement management plan.
2. Organizational Process Assets Updates:
 - Contract File: A complete set of indexed contract documentation.

- Deliverable Acceptance: A formal written notice from the buyer that the contract has been accepted.(Requirements should be defined in the contract.)
- Lessons Learned documentation

References:

1. PMBOK Guide, 5th edition, Project Management Institute

About the Author



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Dr. T D Jainendrakumar, Hon' PhD, MCA, PMP is an international PMP trainer, EX-Scientist/Principal Scientist/Joint Director, N.I.C, Ministry of Information and Communication Technology, Government of India. At present he is working as the head of the department, Department of Computer Science and Applications in the St. Joseph's College of Engineering and Technology, Palai, Kerala, India.

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