PROJECT MANAGEMENT

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PMP® Certification Training

Lesson 14: Project Procurement Management

This course is based on the Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition.*

PROJECT MANAGEMENT

Objectives

- Define contract
- Discuss key concepts, tailoring, trends, agile/adaptive considerations
- Differentiate between centralized and decentralized contracting
- Explain the different types of contract
- Identify the key terms used in Procurement Management
- Describe the Project Procurement Management processes

Contracts

The definition of a *Contract is as follows:

A contract is a mutually binding agreement that obligates the seller to provide the specified products, services, or results; obligates the buyer to compensate the seller; and represents a legal relationship that is subject to remedy in the court.

The two parties involved in a contract are the buyer and the seller. A seller provides the goods and services and the buyer buys these for a compensation.

*Definition taken from the Glossary of the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Sixth Edition,* Project Management Institute, Inc., 2017, Page 489

Characteristics of Contract

The characteristics of a contract are as follows:

- A contract must be formal and in written form.
- A contract must have legal remedies.
- Changes to contracts must also be subject to the same checks as the contract itself.
- A contract is created and managed by contract managers, also called the procurement managers.

Centralized vs. Decentralized Contracting

In centralized contracting, a single contract manager handles multiple projects, whereas in decentralized contracting, a contract manager is assigned to a project full time and reports to the project manager.

The advantages and disadvantages of the two methods are as follows:

Method	**Advantages**	**Disadvantages**
Centralized Contracting	• Increased expertise in contracting • Standardized company practices	• Difficult to get contracting help as the contractors may be involved in multiple projects
Decentralized Contracting	• More focus and control on the project • Easier access to contracting experience	• Duplication of expertise • Less standardization of contracting practices from one project to another

If British Petroleum is starting a project of setting up a new refinery plant in Nigeria, they can procure key machinery through centralized purchasing department and later have a full-time contract manager to procure smaller equipment, locally.

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Types of Contract

Contracts can be of three types. They are as follows:

Cost Reimbursable (CR) or Cost Plus

This involves payments to the seller for all legitimate actual costs incurred for completed work, plus a fee representing seller profit. It should be used if the scope of work is expected to change significantly during the execution of the contract.

Cost-based contracts can be classified as:

- Cost Plus Fee (CPF) or Cost Plus Fixed Fee (CPFF)
- Cost Plus Incentive Fee (CPIF)
- Cost Plus Award Fee (CPAF)

Time and Material (T and M) or Unit Price

This is a hybrid type of contractual arrangement with aspects of both cost-reimbursable and fixed-price contracts. It is often used for staff augmentation, acquisition of experts, and any outside support when a precise statement of work cannot be quickly prescribed.

Fixed Price (FP) or Lump Sum

This involves setting a fixed total price for a defined product, service, or a result to be provided. It should be used when the requirements are well defined and no significant changes to the scope are expected.

Fixed price contracts can be classified as:

- Fixed Price Incentive Fee (FPIF)
- Fixed Price – Economic Price Adjusted (FP – EPA)
- Firm Fixed Price (FFP)

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Business Scenario: Problem Statement

- Scott is the Project Manager for a global project, which is very demanding and critical to his company. His project sponsor is confident in his team's ability to finish the project under budget and ahead of schedule.
- To manage the huge demand, Scott has to make a decision to procure additional resources.
- The additional resources would be responsible for activities requiring specific skills, which his project team lacks.
- The customer has an incentive clause in the project's agreement that yields a bonus for early completion. Scott has a vision for the work the additional resources will complete, but there is also an opportunity to expand their scope of work, especially if he runs into scheduling problems that will require him to crash the critical path.
- What contract should Scott establish to procure the additional resources?

Business Scenario: Solution

- Although Scott wants to complete his project early so that the team can receive the bonus for early completion, he has to pick a contract that is less risky and based on the scope of work.
- Out of the available contracts, the best choice for Scott is the Time and Material Contract, which gives him more flexibility.
- Fixed Fee contracts require a well-defined scope of work, and Time and Material is the only option that accommodates open-ended work arrangements.

Types of Contract: Advantages and Disadvantages

The advantages and disadvantages of different types of contracts are as follows:

Type of Contract	Advantages	Disadvantages
Cost Reimbursement	• Less costly than fixed price because seller does not have to account for the risk • Simple to draft	• Requires auditing all the seller invoices and thus increases buyer efforts • Seller has less incentive to control cost and thus these contracts are inefficient, i.e., riskier for the buyer or the project manager
Fixed Price	• More efficient as the seller has strong incentive to control cost • Requires less effort by buyer to manage contracts as cost risk is with the seller	• Seller may underquote initially and later try to make high margins on change requests • Not having a proper Statement of Work (SOW) can result in seller not providing some of the deliverables
Time and Material	• Easy to create • Good for resource augmentation assignments, where cost risk is shared by buyer and seller	• Seller has no incentive to control costs • Requires monitoring of daily output • Can't be used in big projects

Key Terms

The following are the key terms used in Procurement Management:

Request for Information

Request for Information (RFI) is used to get potential sellers' information to see their capability.

Request for Proposal

Request for Proposal (RFP) is used to get proposals from prospective sellers.

Request for Quotation

Request for Quotation (RFQ) is used to get quotation from prospective sellers for standard products or services.

Request for Bid

Request for Bid (RFB) is used by the buyer to get bids from the shortlisted sellers.

Purchase Order

Purchase Order (PO) is the simplest type of commercial contract. PO is generally issued for small purchases.

Key Terms (Contd.)

Statement of Work

Statement of Work (SOW) defines the scope of the deliverables according to the contract.

Quotation

A Quotation is the submission of response by the vendor to a request from the buyer.

Non-disclosure Agreement

Non-disclosure Agreement (NDA) is signed between two parties to maintain the confidentiality of the information of each other. They abide by the agreement and don't disclose the information with any of the competitors.

Letter of Intent

Letter of Intent (LOI) is issued by the buyer to indicate that he is interested to carry on work with the seller.

Terms and Conditions

A procurement agreement includes certain Terms and Conditions (T and C) and may incorporate other items that the buyer specifies regarding what the seller should perform or provide.

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Key Terms (Contd.)

Force majeure

It is a clause in contracts that frees both business parties from obligation in case of unavoidable events or an event described by the legal term as act of God (flood, hurricane, earthquake, and so on).

Doctrine of waiver

Doctrine of waiver is a voluntary act by a person or a party that surrenders a legal right.

Privity of contracts

The doctrine of Privity implies that the contract cannot confer rights or obligations to any party other than those directly involved in the contract.

Dispute resolution

It is about taking action or finding a resolution in case of disputes..

Termination for convenience of buyer

This involves termination of the contract by the buyer under any circumstances.

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Key Concepts for Project Procurement Management

- Project manager need not be a trained expert in procurement management laws and regulations but should be familiar enough with the procurement processes to make intelligent decisions regarding contracts and contractual relationships. The project manager is typically not authorized to sign legal agreements binding the organization; this is reserved for those who have the authority to do so.
- Project manager should understand the culture and local laws when dealing with international contracts.

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Trends and Emerging Practices in Project Procurement Management

- **Advances in tools:** Online tools for procurement now give buyers a single point where procurements can be advertised and provide sellers with a single source to find procurement documents and complete them directly online. Information model (BIM) in software tools is used in construction/engineering/infrastructure field.
- **More advanced risk management:** An increasing trend in risk management is to write contracts that accurately allocate specific risks to those entities most capable of managing them.
- **Changing contracting processes:** There has been a significant growth in megaprojects in the past several years, particularly in the areas of infrastructure development and engineering projects. Multibillion-dollar projects are now common.
- **Logistics and supply chain management:** As many large engineering, construction, and infrastructure projects are done through multiple international contractors, the management of the flow of materials becomes critical to successful completion.
- **Technology and stakeholder relations:** Publicly-funded projects are under increasing scrutiny. Use of Webcams to improve communications and relations is in trend in infrastructure and commercial construction projects.
- **Trial engagement:** Not every seller is well suited for an organization's environment. Therefore, some projects will engage several candidate sellers for initial deliverables and work products on a paid basis before making the full commitment to a larger portion of the project scope.

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Tailoring Considerations

- **Complexity of procurement**: Is there one main procurement or are there multiple procurements at different times with different sellers that add to the complexity of the procurements?
- **Physical locations**: Are the buyers and sellers in the same location, or reasonably close, or in different time zones, countries, or continents?
- **Governance and regulatory environment**: Are local laws and regulations regarding procurement activities integrated with the organization's procurement policies? How does this affect contract auditing requirements?
- **Availability of contractors**: Are there available contractors who are capable of performing the work?

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Considerations for Agile/Adaptive Environment

- In agile environments, specific sellers may be used to extend the team. This collaborative working relationship can lead to a shared risk procurement model where both the buyer and the seller share the risk and rewards associated with a project.
- Larger projects may use an adaptive approach for some deliverables and a more stable approach for other parts.
- A governing agreement such as master service agreement (MSA) may be used for the overall engagement, with adaptive work being placed in an appendix or supplement.

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Project Procurement Management

The definition of *Project Procurement Management is as follows:

Project procurement management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.

Project Procurement Management helps in determining the type of contract to be issued and guides in managing the contracts with the sellers.

*Definition taken from the Glossary of the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Sixth Edition*, Project Management Institute, Inc., 2017, Page 459

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Project Procurement Management Processes

Knowledge Areas		Project Integration Management	Project Scope Management	Project Schedule Management	Project Cost Management	Project Quality Management	Project Resource Management	Project Communications Management	Project Risk Management	Project Procurement Management	Project Stakeholder Management
Project Management Process Groups	Initiating	4.1 Develop Project Charter									13.1 Identify Stakeholders
	Planning	4.2 Develop Project Management Plan	5.1 Plan Scope 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS	6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule	7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget	8.1 Plan Quality Management	9.1 Plan Resource Management 9.2 Estimate Activity Resources	10.1 Plan Communications Management	11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Response	12.1 Plan Procurement Management	13.2 Plan Stakeholder Engagement
	Executing	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge				8.2 Manage Quality	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	10.2 Manage Communications	11.6 Implement Risk Response	12.2 Conduct Procurements	13.3 Manage Stakeholder Engagement
	Monitoring and Controlling	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	5.5 Validate Scope 5.6 Control Scope	6.6 Control Schedule	7.4 Control Costs	8.3 Control Quality	9.6 Control Resource	10.3 Monitor Communications	11.7 Monitor Risks	12.3 Control Procurements	13.4 Monitor Stakeholder Engagements
	Closing	4.7 Close Project or Phase									

Table 1-4. Project Management Process Group and Knowledge Area Mapping

Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Sixth Edition*, Project Management Institute, Inc., 2017, Page 25

Plan Procurement Management

"Plan Procurement Management is the process of documenting project procurement decisions, specifying the approach, and identifying potential sellers." It belongs to the Planning Process Group.

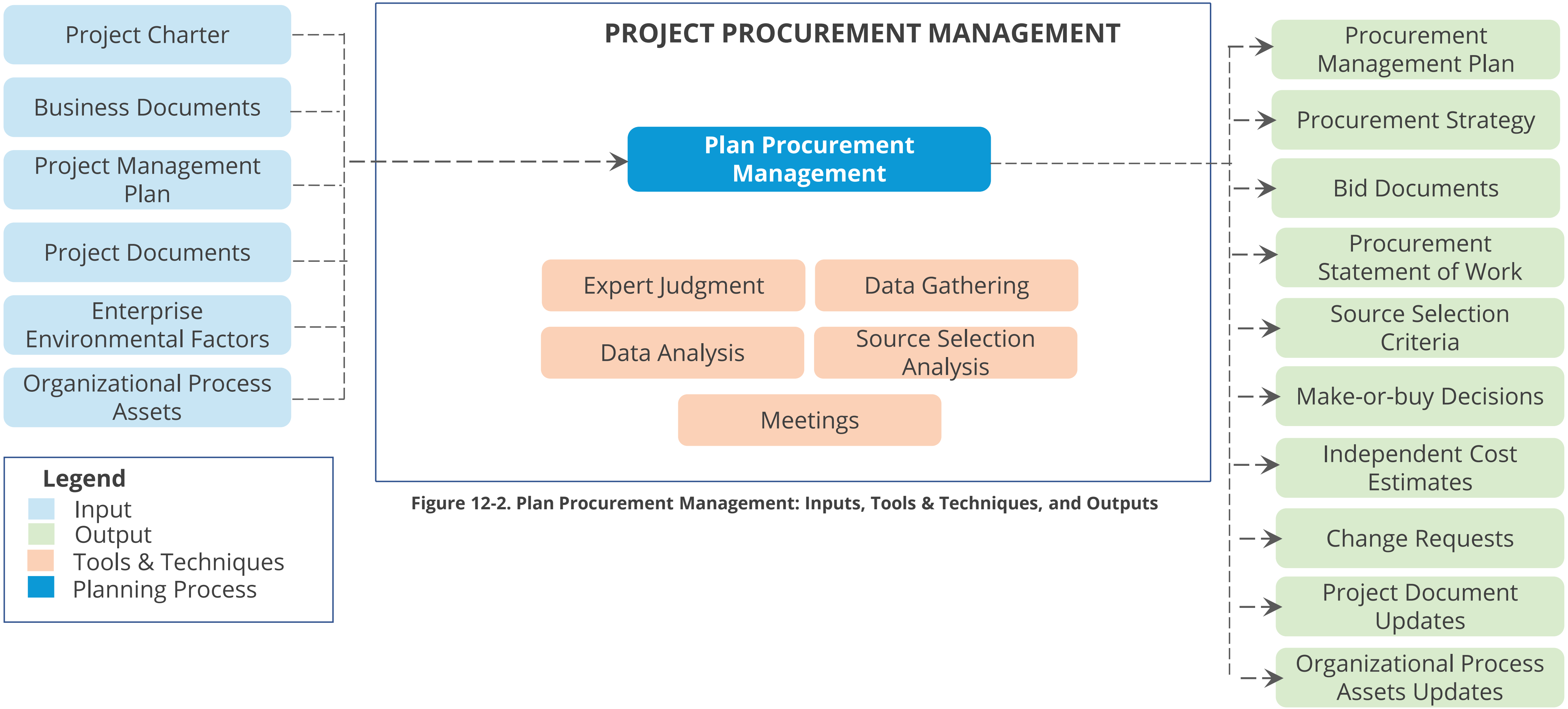

Figure 12-2. Plan Procurement Management: Inputs, Tools & Techniques, and Outputs

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Conduct Procurements

"Conduct procurements is the process of obtaining seller responses, selecting a seller, and awarding a contract." It belongs to the executing process group.

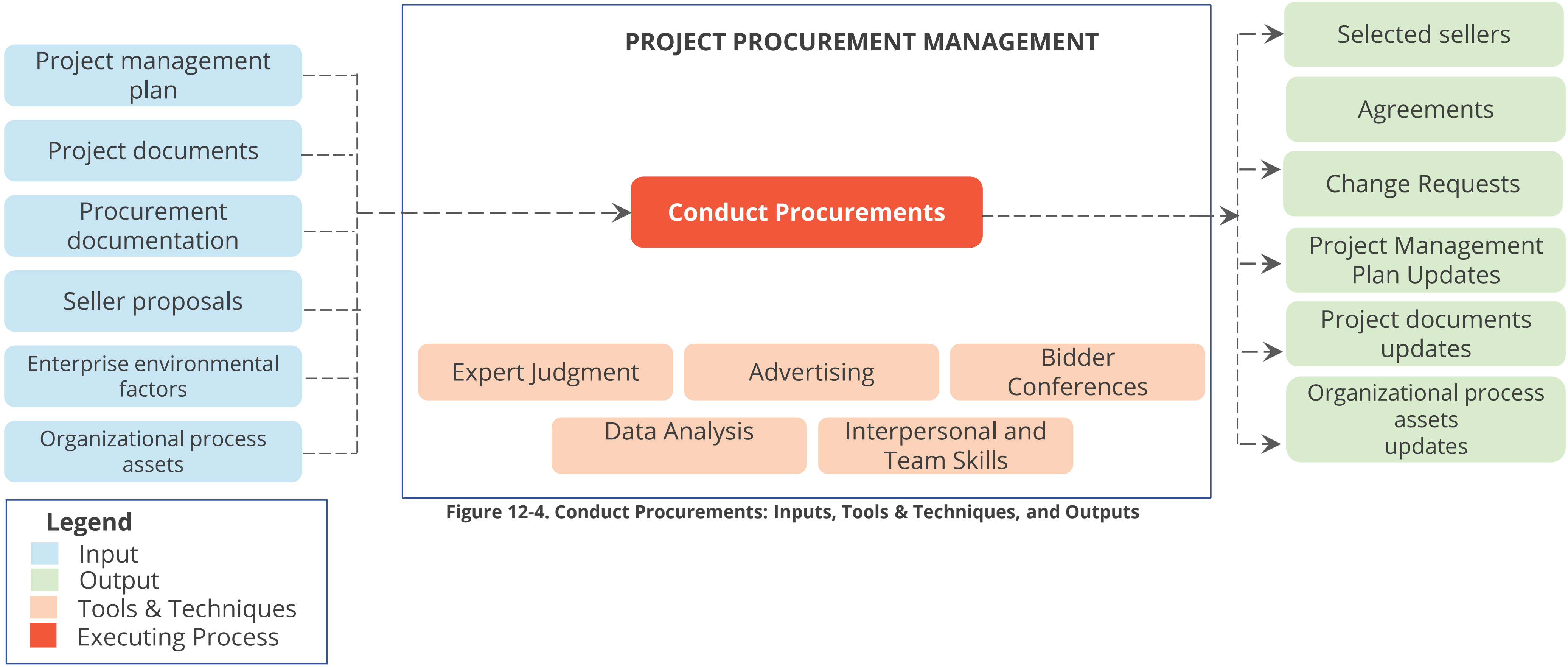

Figure 12-4. Conduct Procurements: Inputs, Tools & Techniques, and Outputs

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Control Procurements

"Control Procurements is the process of managing procurement relationships, monitoring contract performance, and making changes and corrections to contracts as appropriate." It belongs to the Monitoring and Controlling Process Group.

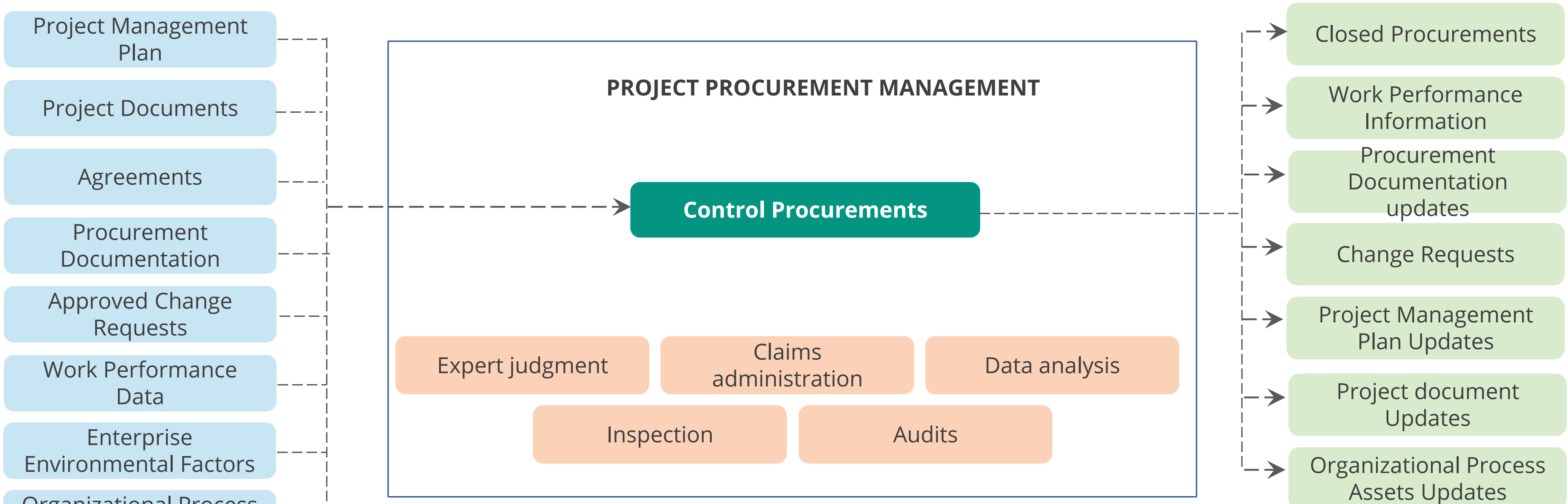

Figure 12-6. Control Procurements: Inputs, Tools & Techniques, and Outputs

Legend
- Input
- Output
- Tools & Techniques
- Monitoring & Controlling

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Key Takeaways

- A contract is a mutually binding agreement that obligates the seller to provide the specified products, services, or results and obligates the buyer to provide the monetary or other valuable consideration in return.
- In centralized contracting, a single contract manager handles multiple projects, whereas in decentralized contracting, a contract manager is assigned to a project full time and reports to the project manager.
- The three types of contacts are Cost Reimbursable (CR) or Cost Plus, Time and Material (T and M) or Unit Price, and Fixed Price (FP) or Lump Sum.
- Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.
- There are three Project Procurement Management processes. They are Plan Procurement Management, Conduct Procurements, and Control Procurements.

Additional Reading

(Refer to the exercises provided in the PMP Classroom Exercises)

- Exercise 21
- Exercise 22

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Quiz

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Quiz

1. **What is the primary objective of negotiation?**

A. Find a win-win proposition for both parties

B. Get the best deal

C. Define the exact responsibilities of each party

D. Clarify the contract scope

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Quiz

1. What is the primary objective of negotiation?

A. Find a win-win proposition for both parties

B. Get the best deal

C. Define the exact responsibilities of each party

D. Clarify the contract scope

The correct answer is: **A**

Negotiation should result in a positive feeling for both parties so that their commitment toward the contract is assured.

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Quiz

2. **You are in the process of selecting a seller from the shortlisted ones and awarding a contract. The process involves receiving bids or proposals and applying the defined selection criteria to select the seller who is qualified to perform the work. Which of the following is not an input to this process?**

A. Procurement documentation

B. Seller proposals

C. Bidder conferences

D. Project documents

PROJECT MANAGEMENT

Quiz

2. **You are in the process of selecting a seller from the shortlisted ones and awarding a contract. The process involves receiving bids or proposals and applying the defined selection criteria to select the seller who is qualified to perform the work. Which of the following is not an input to this process?**

A. Procurement documentation

B. Seller proposals

C. Bidder conferences

D. Project documents

The correct answer is: **C**

This is Conduct Procurements process. Bidder conferences is the tool for this process.

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Quiz

3. **You have been asked to assist the contract manager in drafting the contract for a large project with limited scope clarity. Which type of contract would you suggest so that your organization does not incur any financial losses?**

A. Time and material

B. Fixed price

C. Cost plus fixed fee

D. Cost plus incentive fee

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Quiz

3. **You have been asked to assist the contract manager in drafting the contract for a large project with limited scope clarity. Which type of contract would you suggest so that your organization does not incur any financial losses?**

A. Time and material

B. Fixed price

C. Cost plus fixed fee

D. Cost plus incentive fee

The correct answer is: **C**

In a cost plus fixed fee project, the seller can exercise control over the cost-rather than getting locked into a rate or a price. In a project with limited scope clarity, incentives are hard to define and agree.

Quiz

4. **A Cost Plus Incentive Fee (CPIF) contract has an estimated cost of $150K with a predetermined fee of $15K and a share ratio of buyer to seller equal to 70/30. The actual cost of the project is $120K. How much savings did the seller make in total, and out of total savings, how much did he make due to the incentive?**

A. $30K, $9K

B. $55K, $30K

C. $32K, $27K

D. $15K, $3K

Quiz

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4. A Cost Plus Incentive Fee (CPIF) contract has an estimated cost of $150K with a predetermined fee of $15K and a share ratio of buyer to seller equal to 70/30. The actual cost of the project is $120K. How much savings did the seller make in total, and out of total savings, how much did he make due to the incentive?

A. $30K, $9K

B. $55K, $30K

C. $32K, $27K

D. $15K, $3K

The correct answer is: **A**

The estimated cost of project is $150K, and the actual cost of project is $120K. This implies a net saving of $30K. The sharing ratio is 30% for the seller which is $9K. The total value of the amount received by the seller is $120K+$9K+15K = $144K (actual cost + incentive + fixed fee).

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Quiz

5. **As a project manager of a construction project, you are inviting requests for proposal from eligible vendors. On going through the list, you find the name of your friend and ex-colleague from university. He was a methodical, sharp student and excelled in his subjects. What should you do next?**

A. Give him the contract as you are quite sure he would do a good job

B. Give him some inputs on how your organization awards the contract to improve his chances

C. Steer yourself away from the bidding process and inform your sponsor

D. Keep silent and continue with the procurement process

Quiz

5. **As a project manager of a construction project, you are inviting requests for proposal from eligible vendors. On going through the list, you find the name of your friend and ex-colleague from university. He was a methodical, sharp student and excelled in his subjects. What should you do next?**

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C. Steer yourself away from the bidding process and inform your sponsor

D. Keep silent and continue with the procurement process

The correct answer is: **C**

This situation presents a potential conflict of interest. The best option for the project manager is to discuss it with his project sponsor and then disassociate himself from the process.

Quiz

6. **Which of the following is not an advantage of a fixed price contract?**

A. Less work for buyer to manage

B. Seller has a strong incentive to control costs

C. Buyer knows the total price at project start

D. Final cost may be more than that specified in a cost reimbursable contract because contractors have to inflate the price to cover their risk

Quiz

6. **Which of the following is not an advantage of a fixed price contract?**

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B. Seller has a strong incentive to control costs

C. Buyer knows the total price at project start

D. Final cost may be more than that specified in a cost reimbursable contract because contractors have to inflate the price to cover their risk

The correct answer is: **D**

Inflating the price to cover risks will only result in increasing the price for the buyers. This is definitely not an advantage.

Quiz

7. **As a project manager you arrange to have another company provide debris removal services for a construction project. The owner of a small debris removal company is ready to perform the service for half the costs of several companies that bid on the service. You agree to use his services, and he offers his handshake as a contract saying that's how he has been operating for more than 40 years. What should you do?**

A. Given the significant savings and the fact that the owner of the company has been in business for 40 years, a handshake is enough to start doing business with the company.

B. Before you shake his hand, you clarify the specifics of the work that will be performed and upon agreement, you can complete the contract with a handshake.

C. You explain that you require a written contract that can be reviewed and signed by both parties and that provides clear descriptions of the services that will be rendered, the payment received for the services, and legal remedies in the event of disagreements.

D. Check with your legal team to determine if you can accept a handshake as a formal contract.

Quiz

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C. You explain that you require a written contract that can be reviewed and signed by both parties and that provides clear descriptions of the services that will be rendered, the payment received for the services, and legal remedies in the event of disagreements.

D. Check with your legal team to determine if you can accept a handshake as a formal contract.

The correct answer is: **C**

As the project manager you need to ensure that all contracts are written and legally binding.

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Quiz

8. **You are managing a large construction project and are concerned about the risk of completing the framing for the project which requires the purchase of a lot of supplies. You decide to outsource this to a company that specializes in framing. Which type of contract would be best for this service?**

A. Fixed Price

B. Fixed Price plus early completion incentive

C. Time and Material

D. Time and Material with a cap

Quiz

8. **You are managing a construction project and are concerned about the risk of completing the framing for the project which requires the purchase of a lot of supplies. You decide to outsource this to a company that specializes in framing. Which type of contract would be best for this service?**

A. Fixed Price

B. Fixed Price plus early completion incentive

C. Time and Material

D. Time and Material with a cap

The correct answer is: **D**

As the framing work requires a lot of supplies, you do not want to pay for any additional markups on the materials used. Time and Material with a cap or ceiling would be the best contract for this work.

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This concludes

“Project Procurement Management.”

The next lesson is

“Project Stakeholder Management.”

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