Lecture 7
Basics of Procurement

CHEM-E0115 PLANNING AND EXECUTION OF A BIOREFINERY INVESTMENT PROJECT

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Agenda

I. Introduction to Procurement
   - Procurement Function
   - Different Definitions
   - Two Types of Procurement

II. Project Procurement Process
   - Procurement Planning
   - Supplier Selection
   - Contracts
   - Contract Management
   - Evaluation & Closure

III. Sustainable Procurement

I. Introduction to Procurement

Introduction to Procurement

The basic objectives of procurement are:

- to purchase equipment, material and/or services, necessary to meet the technical specifications, and
- to ensure that the deliveries are in accordance with the overall schedule and in the most cost-effective manner.
- Alternatively to provide input for project budget creation before the investment decision

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Procurement as part of modern business operations

Before:
REACTIVE

Now:
PROACTIVE

Global competition

Increased outsourcing

Improved communication

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Different Definitions

- Ordering
- Buying
- Purchasing
- Procurement
- Sourcing
- Supply Chain Management
- Value Chain Management

Arjan van Weele (Jan 5, 2014). CollegeTourPurchasing Video 1 What is Purchasing? YouTube: 4:37-8:14

Two Types of Procurement

Organizational / Operational

- Procurement for sustaining an organization's daily business processes
- Strives to achieve lower unit prices and optimize supply chain
- Centralized administration: fast quote and order processes
- Long-term strategic relationships with suppliers

Project-based

- Procurement for a particular purpose or project
- Ensures overall project delivery
- Project procurement function resides with the project team, requires numerous activities in a short period of time
- Project-based relationships with suppliers

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II. Project Procurement Process

Typical Project Procurement Process

1.PROCUREMENT PLANNING	2.SUPPLIER SELECTION	3.CONTRACTS	4.CONTRACT MANAGEMENT	5.EVALUATION & CLOSURE
○ Need recognition / Enquiry plan ○ Project procurement policy & project procurement manual ○ Specifications ○ Procurement schedule, resource plans, man-hour forecasts	○ Supplier identification and pre-qualification (RFI, Due Diligence, NDA) ○ Multiple rounds, if needed (budgetary/binding) ○ Approved list of suppliers ○ Proposal request (ITT, RFQ, RFP, RFT, IFB, ITB) ○ Tender comparison	○ Purchase negotiations (technical & commercial) ○ Contract awarding ○ Purchase order (PO)	○ Contract administration ○ Invoice control ○ Expediting ○ Change management	○ Contract closing (punch list, closing of accounts, warranty bonds) ○ Supplier performance evaluation ○ Feedback to cost estimating ○ Lessons learnt ○ Continuous development

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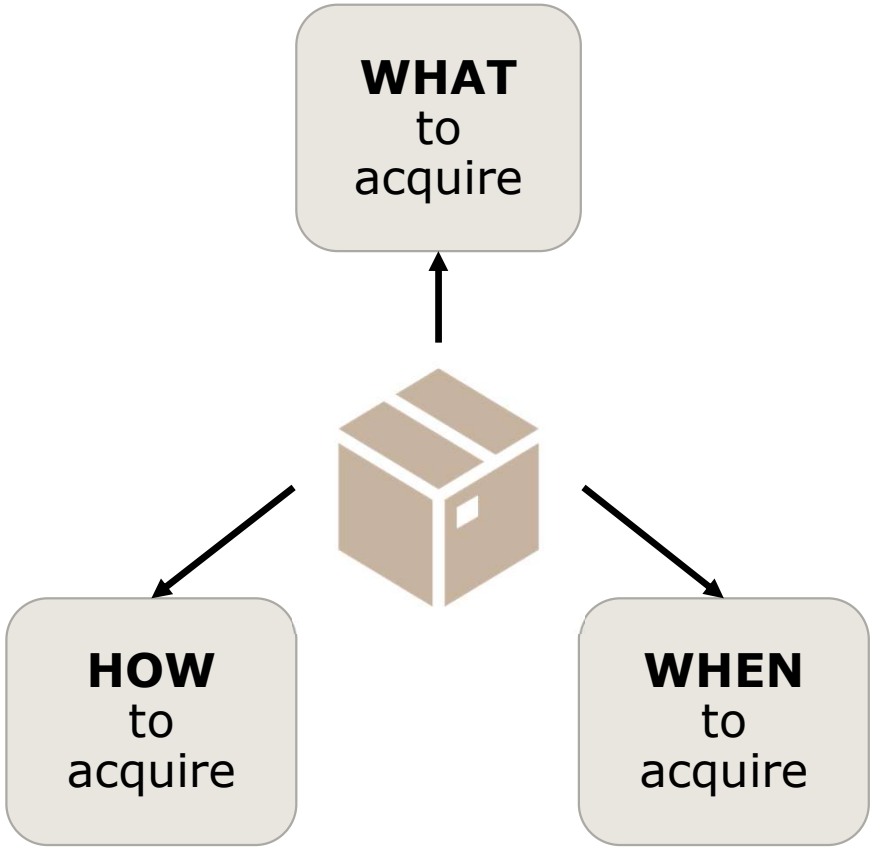
1. Procurement Planning

— Identify a need to purchase a product or service; the idea originates outside the procurement department → the procurement department's function is to buy on behalf of the rest of the organization

— Define procurement register, prepare a procurement manual, procedures, templates

— Define project requirements, terms & conditions and project specifications

— Identify procurement milestones & prepare a procurement time schedule



Procurement Schedule Examples

Original project procurement schedule:

Package Name	ITT №	Sourcing Responsible	Technical Responsible	Start	Finish
Overhead Cranes	**M023**	**Anna**	**Jukka**		
ITT Preparation				1.8.2022	15.8.2022
Tendering Time				16.8.2022	13.9.2022
Tender Comparison				14.9.2022	5.10.2022
Negotiations				6.10.2022	27.10.2022
Contract Day				27.10.2022	27.10.2022
Site Need Date				30.6.2023	30.6.2023

Follow-up of procurement activities:

ITT №	Package Name	ITT out PLANNED	ITT out ACTUAL	ITT out Δ	Tenders Received PLANNED	Tenders Received ACTUAL	Tenders Received Δ	Tender Comparison PLANNED	Tender Comparison ACTUAL	Tender Comparison Δ	Contract Day PLANNED	Contract Day ACTUAL	Contract Day Δ
M023	Overhead Cranes	16.8.2022	19.8.2022	3	13.9.2022	23.9.2022	10	5.10.2022	19.10.2022	14	27.10.2022	11.11.2022	15

Unresolved technical issues, uclear scope of supply, etc.

High workload of suppliers, holidays, sick leaves, etc.

Delayed offers + incomplete offers with unclear points

Delayed preceding phases + schedule difficulties in arranging negotiations

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2. Supplier Selection

- Identification of Suppliers
  - Prepare a list of potential suppliers
  - Maintain supplier register (database)
  - Supplier pre-qualification (HSE, Ethics, Capacity/Resources, Financial condition, References, etc.)
- Requesting Offers
  - Issue requests for bids with all required documentation & track the bidding process
  - Receive and archive offers
- Evaluation of Received Offers
  - Technical and commercial clarifications
  - Technical evaluation
  - Commercial evaluation
  - Recommendation to the Client for negotiations

Example of Price Information in Offers

			CRANES SUPPLIER OY
Tender submission date			23.9.2022
Tender validity until			23.11.2022
Tender currency			EUR
MAIN SCOPE			**580,000.00 €**
M023 Overhead Cranes:	**Units**	**Unit Price**	**Total Price**
Overhead cranes 5t	5	35,000.00	175,000.00
Overhead cranes 10t	3	60,000.00	180,000.00
Overhead cranes 40t	2	100,000.00	200,000.00
Freight (including packaging):			
DDP, Incoterms 2020			25,000.00
SITE SERVICES			**88,000.00 €**
Installation:			
Overhead cranes 5t	5	7,000.00	35,000.00
Overhead cranes 10t	3	8,500.00	25,500.00
Overhead cranes 40t	2	10,000.00	20,000.00
Supervision and Start-up, 2 days	including all travel expenses		5,000.00
Training, 1 day	including all travel expenses		2,500.00
SPARE PARTS			**75,000.00 €**
Spares for 2 years			75,000.00
OPTIONS			
Maintenance Agreement, per year			7,000.00
Other Colour, per crane	basic colour included in the price		750.00
Coating System C5, per crane	C4 included in the price		2,350.00

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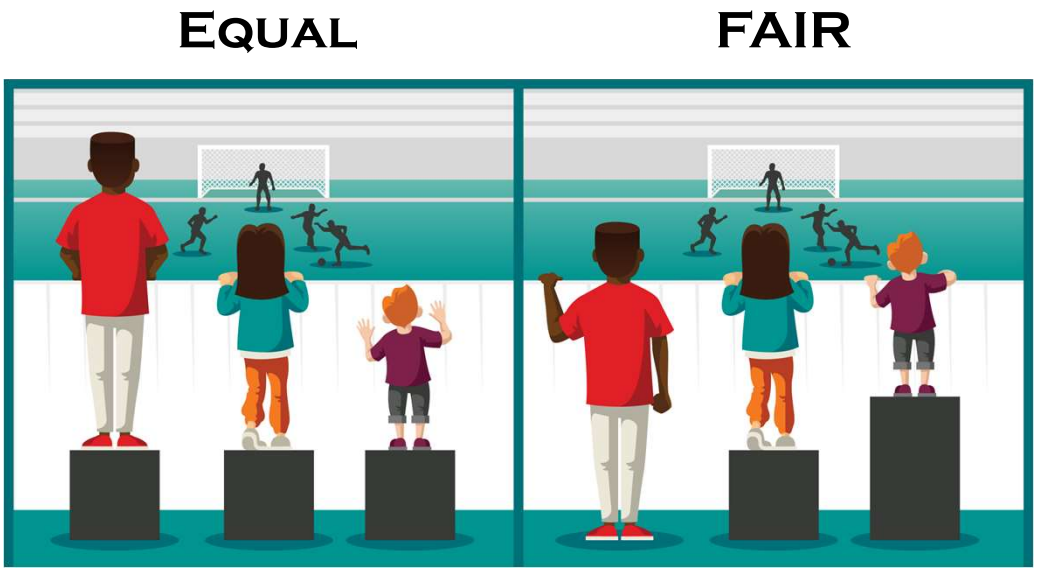
Examples of Selection Criteria among Industrial Clients

Treating Tender Participants Equally or Fairly?



All tender participants must be treated equally and fairly.

However, equal is not always fair.

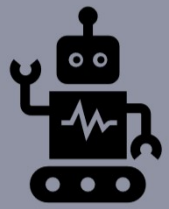
3. Contracts

- Contract Documentation
  - Contracting models: Supply Contract, Installation Contract, Frame Agreements, Engineering Contract, EPC, EPS, etc.
- Negotiations
  - Coordinate participation in negotiations among the engineering and site management, Client and selected suppliers
- Contract Awarding
  - Prepare technical and commercial documentation for contracts , signatures according to the authority matrix
- Purchase Orders (POs)
  - Create purchase requisitions and POs in the Client’s ERP system
  - Receive order confirmation
  - Inform all unsuccessful bidders

Contract Content

Legal-Economic Part

- Legal stipulations
- Prices
- Payment terms and milestones
- Bank guarantees
- Liquidated damages
- Delivery schedule



Technical Part

- Warranties (performance, mechanical, availability)
- Technical specification & datasheets
- Technical standards
- Project specific specifications
- Safety requirements
- Quality assurance inspections, acceptance tests procedures

Main Points to Remember in Contracts

There is no one-size-fits-all approach in contracts. You have to tailor contracts to suit your needs.

Deliverables should be as clear as possible to avoid misunderstandings and dissappointing results.

If it's not part of the contract, it's not part of the deal!

Project team should make sure that purchasing meets the project needs.

Ask your legal team to review all contracts to ensure they follow legal requirements & protect you in case of disagreements.

Clarity in contract content!

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4. Contract Management

- Contract Administration
  - Ensure that responsibilities and milestones are being met and the value of the contract is not increasing throughout unmanaged growth of scope
  - Progress reports
- Invoice Control
  - Checking invoices againts contract and payment milestones
- Expediting
  - Follow-up of document deliveries
  - Monitoring fabrication and inspection activities
- Change Management
  - Management of change orders and additrional works

Expediting


DESK EXPEDITING
•Kick-off & monthly meetings with selected suppliers
•Supplier document follow-up
•Progress follow-up & reporting
FIELD EXPEDITING
•Planning expediting visits according to the expediting categories and ITP
•Conducting expediting visits → output: expediting reports
SHIPPING
•Cargo readiness / checking of shipping documents
•Shipping and customs clearance
•Unsatisfactory, Overage, Shortage and Damage (UOSD) inspection report

Expediting Categories

- **CATEGORY A:**
  - Deliveries are on the critical path (large packages, use of new suppliers or unknown sub-suppliers, etc.)
  - Any delay or quality issue will impact the project schedule and/or return on investment (ROI)
  - Doubt or lack of experience of the supplier or their sub-supplier
- **CATEGORY B:**
  - No direct impact on the execution of the project, if delivered slightly delayed to site, but where the documentation is essential to proceed with the detailed engineering
  - Items on sub-critical path and are getting critical when delayed by 2 weeks
  - Items which will have an operational impact because of its role into the process (compressor package, process cooling unit, etc.)
- **CATEGORY C:**
  - Delivery time is well sufficient for manufacturing and shipment, but which can result in significant additional activities if delayed
  - Hand valves, standard items, which may be limited as stock items
- **CATEGORY D:**
  - Not critical items at all and do not require any specific expediting actions
  - Bulk material deliveries

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Progress Report Example

Description	Weighted Factor	PROGRESS															
		Sep	2019	Oct	2019	Nov	2019	Dec	2019	Jan	2020	Feb	2020	Mar	2020	Apr	2020
		Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %
Engineering	30	10 %	8 %	60 %	70 %	80 %		100 %		100 %		100 %		100 %		100 %	
Procurement	25	0 %	0 %	40 %	40 %	90 %		100 %		100 %		100 %		100 %		100 %	
Manufacturing	25	0 %	0 %	30 %	30 %	40 %		70 %		100 %		100 %		100 %		100 %	
Inspection & Testing	10	0 %	0 %	30 %	10 %	30 %		30 %		70 %		100 %		100 %		100 %	
Delivery	10	0 %	0 %	0 %	0 %	0 %		0 %		50 %		100 %		100 %		100 %	
TOTAL	100	3	2	39	40	60	0	76	0	92	0	100	0	100	0	100	0
MAIN EVENTS:	Engineering	**Please briefly write here what has been done during the reported month.**															
	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																
CONCERNS AND	Engineering	**Please briefly mention challenges you face, if any, & ways you are planning to overcome them.**															
MITIGATION PLAN:	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																
	Mitigation Plan																
TARGETS FOR	Engineering	**Please briefly write here your main activites in the next month.**															
NEXT PERIOD:	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																

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5. Evaluation

- Generally, supplier performance is evaluated with regard to:
  - Quality
  - Delivery time / schedule
  - HSE
- Not all suppliers need to be evaluated in the same way
- Supplier records with past performance serve as a reliable guide for upcoming purchases
- Benefits of a supplier database:
  - Significantly reduces the time and effort required either to source or to renew contracts
  - More choices of competent suppliers & increased responsiveness
  - Increased possibility to get reliable suppliers
  - Enhanced availability of goods

5. Closure

— A complete set of indexed contract documentation, including the closed contract, is prepared for inclusion with the final project files.

— The buyer provides the seller with formal written notice that the deliverables have been accepted.

— Lessons learned, what has been experienced and process improvement recommendations should be developed for the project file to impove future procurements.

— No project is complete until all contracts are closed out, invoices are paid, and lessons learned are documented.

III. Sustainable Procurement

Why Sustainable Procurement?

Procurement Strategy should incorporate the sustainability aspects that should be met through the equipment/service life cycle/duration. Sustainable Procurement integrates requirements, specifications and criteria according to the Client's and regulatory requirements for goods and services in a manner that covers the entire life-cycle. This in turn benefits not only the purchasing organization but also the society at large, while minimizing damage to the environment.

Lowest environmental impact

Most positive social results

Questions?

Please contact me by email aaron.horvath@afry.com


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