

# Faculty of Engineering and Mathematical Sciences

Project Management & Engineering Practice  
(GENG 5505)

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# Project Management & Engineering Practice (GENG5505)

Procurement management: Embedding value into the project  
(Ch 11)

(Week 6b) - Lecture twelve, 11<sup>th</sup> April 2024

# Overview

- Planning procurement management
- Separating the scope of work from the specification
- Selecting potential suppliers
- Contractual considerations
- Conducting procurement activities
- Controlling procurement activities
- Closing out procurement activities

# Planning procurement activities

- Processes necessary to purchase or acquire products, services or results needed from outside the project team;
- Process-based function driven by a particular department or local division seeking to get possession of something that solves an operational issue;
- Value-adding function that focuses on the efficient attainment of goods, services, or results that deliver a number of very specific and measured benefits to the project;
- Make the best possible use of supplier's products & or services while supporting the changing scope, goals & objectives of the project itself (if/when necessary);
- TBL and life cycle thinking as the core of Procurement.

# Procurement drivers

- Supply the project with goods & services as specified & as required;
- Improved relationships with key suppliers;
- Balance output with both value & quality;
- Increase accountability in the supply chain;
- Encourage greater access to innovative technology, premium materials, workplace competencies & expertise;
- TBL and life cycle thinking as the project core;
- ...

# Typical procurement planning questions

- What is required?
- How much will it cost?
- From where will it be sourced?
- When will it be needed?
- Who will be involved?
- How will it be managed?
- Why is it the best option?
- Will contracts be required?
- ...

# The 8 Rs of procurement

- Right materials (consider disposal issues)
- Right price
- Right quantity
- Right quality
- Right source
- Right reasons
- Right time
- Right return

# Procurement planning decisions

## Make decision (in-house)

- Currency of skills
- Known availability
- Cost effective resource allocation
- Excess capacity
- Unknown supplier base
- Existing management protocols
- Limited access to the market
- Poor history of procuring
- Time available to develop solutions
- Opportunity to up skill in-house resources
- ...

## Buy decision (out-house)

- Insufficient capability
- Conflicting operational & project priorities
- Enhance project scope
- Access to existing solutions
- Statutory and compliance requirement
- Partnering opportunities
- Mitigate risk exposure
- Enhance existing relationships
- Access to independent advice
- Need for a contractual arrangement
- ...



# Differentiating between Scope of work and a specification

Scope of work (SOW)—defines the component of work that will be included in the project; in other words, what the project organisation wants. Put simply, a statement of work identifies *what* is required (without specifying how).

Specification—defines the technical detail of the work to be performed. Put simply, the specification identifies *how* it must behaviour or function.

# Suggestions for improving specifications

- Clear understanding of the project scope & agreed specification;
- Clear, complete, & user-friendly solicitation documents;
- Express the contract clauses & conditions clearly & unambiguously;
- Include a comprehensive glossary of terms;
- State the evaluation criteria for assessing responses;
- Include response templates where possible;
- Use a third party to review the documents;
- Include a copy of the proposed contract that will be used to administer the agreement;
- Encourage alternative and/or innovative responses consistent with TBL and life cycle approach;
- ...

# Selecting potential suppliers

Clear, complete, accurate, applicable and user-friendly solicitation documents (and nominated response templates) will ensure suppliers can address all the criteria required in their proposals.

- Understanding of the requirement
- Technical capability
- Management capability
- Financial capability
- Resource capability
- Price
- Past performance
- Warranty
- Legislation compliance
- References
- TBL & LCT
- Is a legal document necessary?



# Essential contract elements

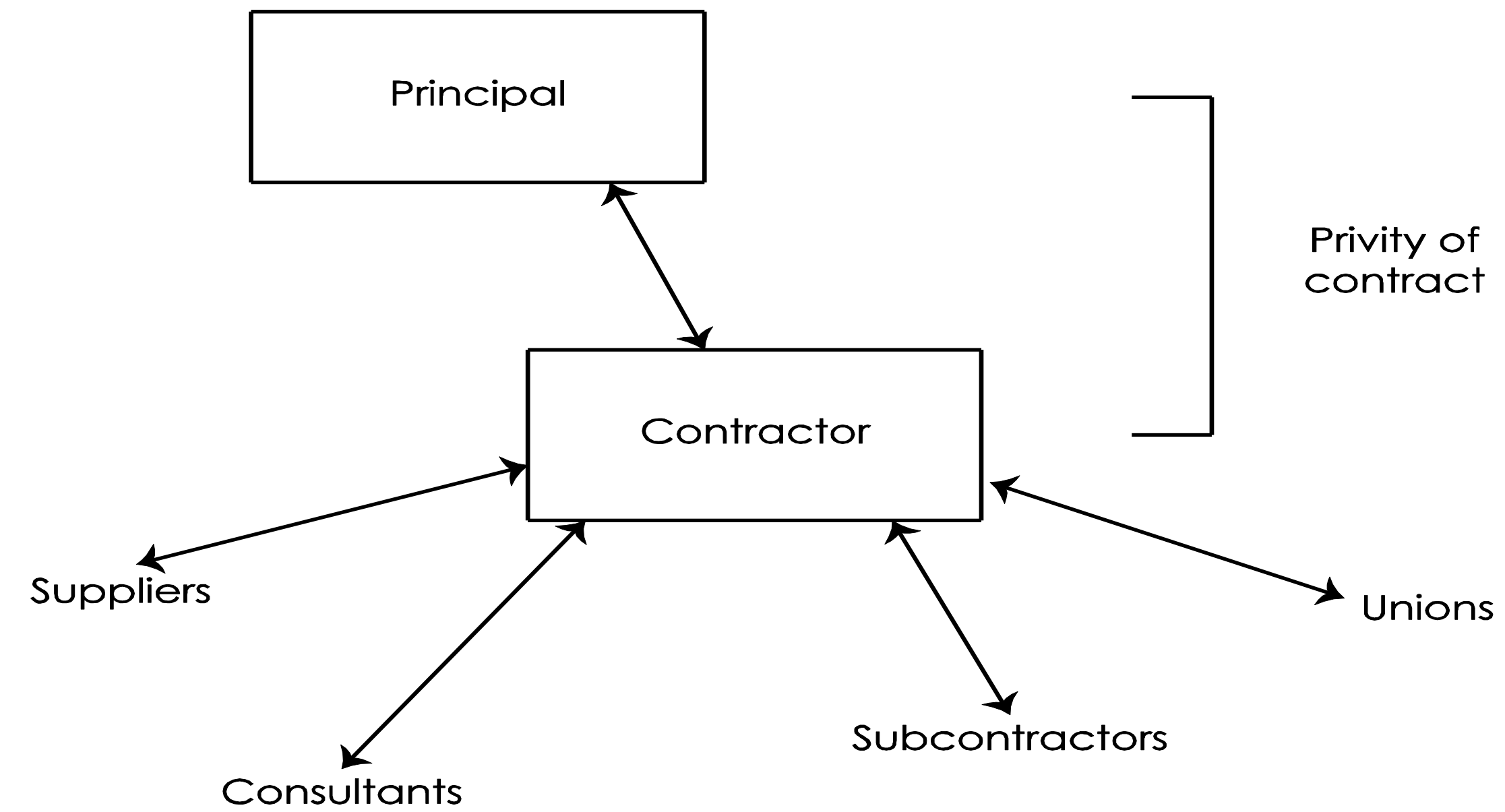
A contract is a legally binding agreement between two or more parties to act, or refrain from acting, in a particular way. i.e. Creating legal rights & obligations that are enforceable in law.

With the intent of protecting the interests of both parties, the contract should contain (as a minimum) the following key elements:

1. An offer (capable of being accepted);
2. Acceptance (capable of being communicated);
3. Intention/consent of each party to be legally bound (freely given);
4. Consideration ( something is given back for the promise) – e.g. money;
5. Mutuality (neither party is disadvantaged);
6. Capacity (both parties are not under any duress); and
7. Legality (it is not an illegal activity).

- Inclusion of both express & implied terms, conditions & warranties.
- Provision for breach, remedy & other non-performance redress.

# PRIVITY OF CONTRACT



# Types of contracts

1. Fixed-price contract
2. Cost-reimbursable contract
3. Times and material contract

➤ **Fixed-price contract:** i.e. The delivery of a well-defined product (goods or service) for a fixed price

➤ Customer risks

➤ At the mercy of a sole source contractor

➤ Incomplete specifications (due to project change) leading to potential contract changes

➤ Tendency of the contractor to use cheaper materials

➤ Contractor risks

➤ Requires careful cost estimation

➤ Requires careful schedule estimation

➤ Cost growth can lead to unprofitable projects



# Types of contracts continues...

## ➤ Cost-reimbursable contract: i.e.

The seller is paid for the actual costs incurred plus a fee representing the seller's profit

### Customer risks

- Final cost unknown
- Sole source contractor
- Poor specification leads to more costs
- Poor specification leads to contract changes

### Contractor risks

- Fee percentage declines as costs rise
- Rising costs can damage the relationship with the customer

## ➤ Time & materials contract: i.e. This type of contract contains features of both fixed fee & cost plus contracts

### Customer risks

- No specification
- Open-ended
- Sole source contractor

### Contractor risks

- Fixed rates
- No defined tasks

\*\* Please refer to pp. 374 - 375 of textbook for additional contract comparisons

# Project management practices impacting project performance overseas – Yean Yng Ling et al, 2007

- Quality of contract
- Quality of response to perceived variations & extent of changes to the contract
- Cultural & language barriers
- Relationship building
- Public image & public relations

# Conducting procurement activities

- Obtaining seller responses, selecting a seller and awarding a contract;
- How? i.e. Request for proposal, request for quotation, invitation for bid, expression of interest, invitation to tender;
- Evaluating responses;
- Additional negotiations (where required);
- Awarding the contract;
- A mutually binding agreement between two or more parties;
- Triggers contract administration phase;
- ....



# Example of Evaluating potential suppliers

		Supplier 1		Supplier 2	
Criteria	Weight	Score	Total	Score	Total
Quality / TBL	4	2	8	5	20
Technical capability	4	4	16	3	12
Past performance	4	3	12	5	20
Price	3	3	9	3	9
Timely supply	5	5	25	5	25
			70		86

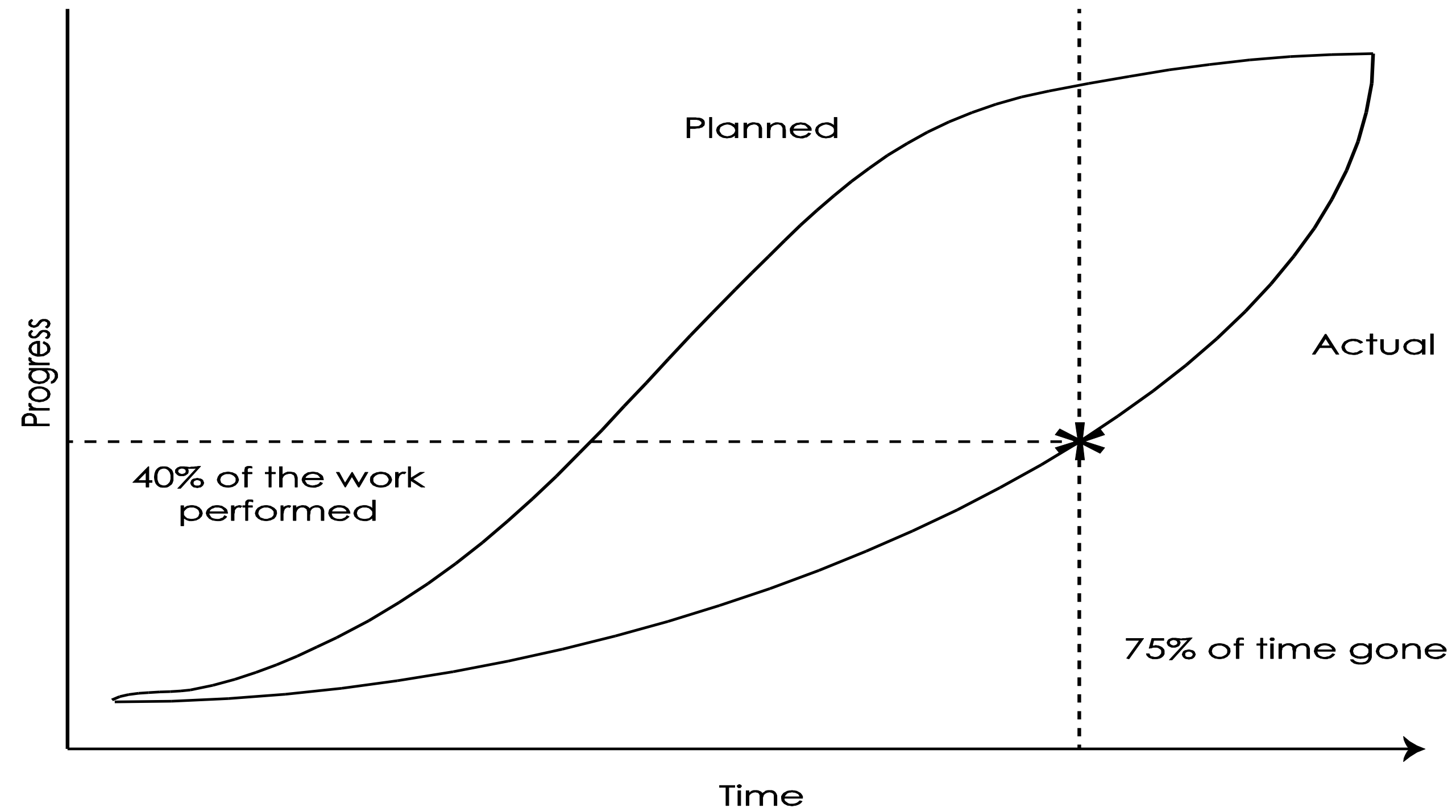
Weight: 1 (low) 5 (high)    Score: 1 (low) 5 (high)

## Controlling procurement activities

The contract manager, administrator, superintendent or project manager is responsible for contractual relationships and integrating project management processes throughout the project lifecycle –

- Directing and managing authorised work;
- Inspecting and verifying completed work prior to payment;
- Ensuring all variations are properly assessed and approved;
- Confirming rectification of all corrective work;
- Maintaining accurate historical records.

# PERFORMANCE BELOW THE LINE





# Closing out procurement activities

- Reviewing all the procurement documentation;
- Updating and archiving all appropriate records;
- Financial reconciliations;
- Analysing all requested and approved contract changes;
- Completion of the agreed inspection and testing procedures;
- Reporting and rectification of any defects and/or damages;
- Auditing the entire procurement process;
- Written confirmation that the project (or at least the supplier's involvement) has been completed.

# Common procurement issues

- Types of contracts;
- Documentation;
- Transparency;
- Performance metrics;
- Managing multiple (external) providers and potential issue escalation;
- Constraints, risk, assumptions;
- Objective evaluations;
- ...

## Negotiation – Getting to yes (Fisher & Ury, 1991)

- Separate the people from the problem
- Focus on interests, not position
- Invent options for mutual gain
- Insist on using objective criteria

## Preparation for negotiation

- Get the facts right – e.g. who does what;
- Consider: “negotiation power”, “importance of relationship”, “cultural, language, & saving face” issues;
- Know what can be compromised (“*Gottas vs Wannas*”);
- Set the negotiation tone;
- Develop your BATNA & be patient as negotiations are full of ups & downs;
- Remember: Negotiations are: 50% psychology & 50% sales!!

## Readings week 6

Jaafari A., 2001, Management of risks, uncertainties and opportunities on projects: Time for a fundamental shift, *International Journal of Project Management*, pp 89 – 101

Yen Yng Ling F. and Hoi L., 2006, Risks faced by Singapore firms when undertaking construction projects in India, *International Journal of Project Management*, pp 261 – 270

Yean Yng Ling F., Pheng Low S., Wang S. Q., Lim H. H., 2007, Key project management practices affecting Singaporean firms' project performance in China, *International Journal of Project Management*, pp 59 – 71

Sebenius J., 2002, The hidden challenge of Cross-Border Negotiations, *Harvard Business Review*, pp 76 – 85