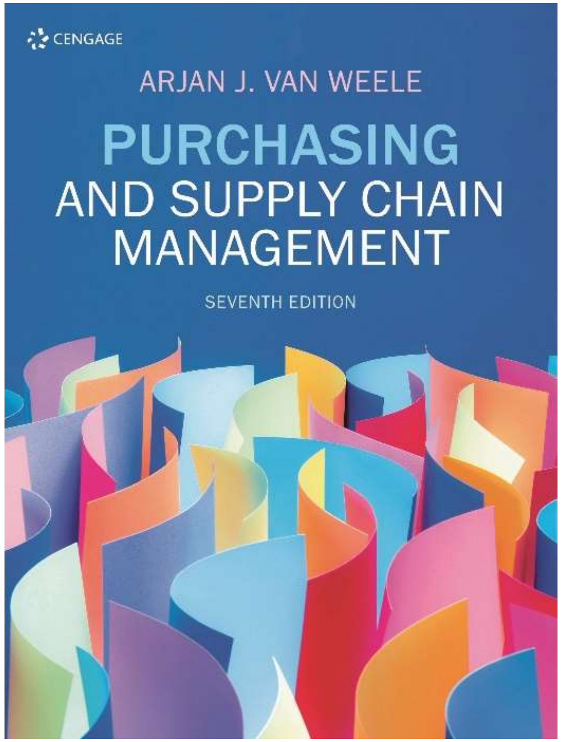


MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

Procurement & Supply Chain
Prof. Corrado Cerruti

Chapter 5

Contract management for complex projects

CENGAGE Learning

Learning objectives

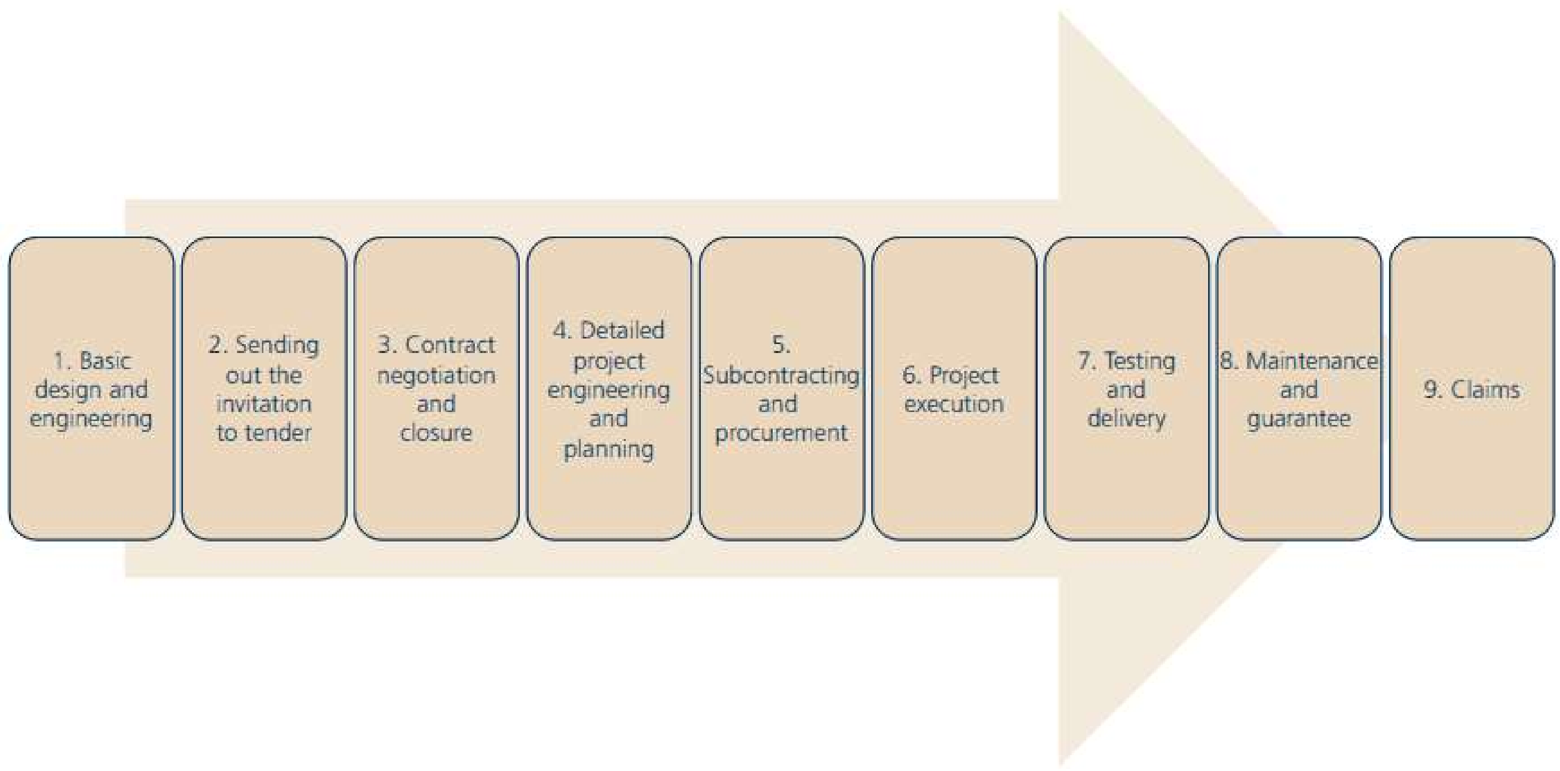
- The perspectives that can be used to manage contracts in complex project settings.
- The different elements of the contracting process.
- How to identify and overcome opportunism in contractual relationships.
- What contract models exist and when to apply them.
- How to decide about different pricing and payment mechanisms for contracts.

Contract management

- Contract management the process that ensures all parties to a contract fully meet their obligations.
- Contracting for projects is different from buying goods and services, since projects, by definition, are unique.
- Buyers and contract managers need to go through all the different steps of the purchasing process model (Chapter 2).
- But contract management in sectors such as construction has developed into a specialist area.

Contract stages

FIGURE 5.1 The contracting process: key elements



The Contracting Process

- Pre-contractual stage:
  - Basic design and engineering
  - Tendering
- Contractual stage:
  - Contract negotiation and closure
- Contract execution:
  - Detailed project engineering and planning
  - Subcontracting and procurement
  - Project execution
  - Testing and delivery
  - Maintenance and guarantee period
- Post-contractual stage:
  - Claims

Basic Design and Engineering – Activities needed to develop technical specification of the work.

Tendering – Activities needed to select contractor for the work based upon competitive bids.

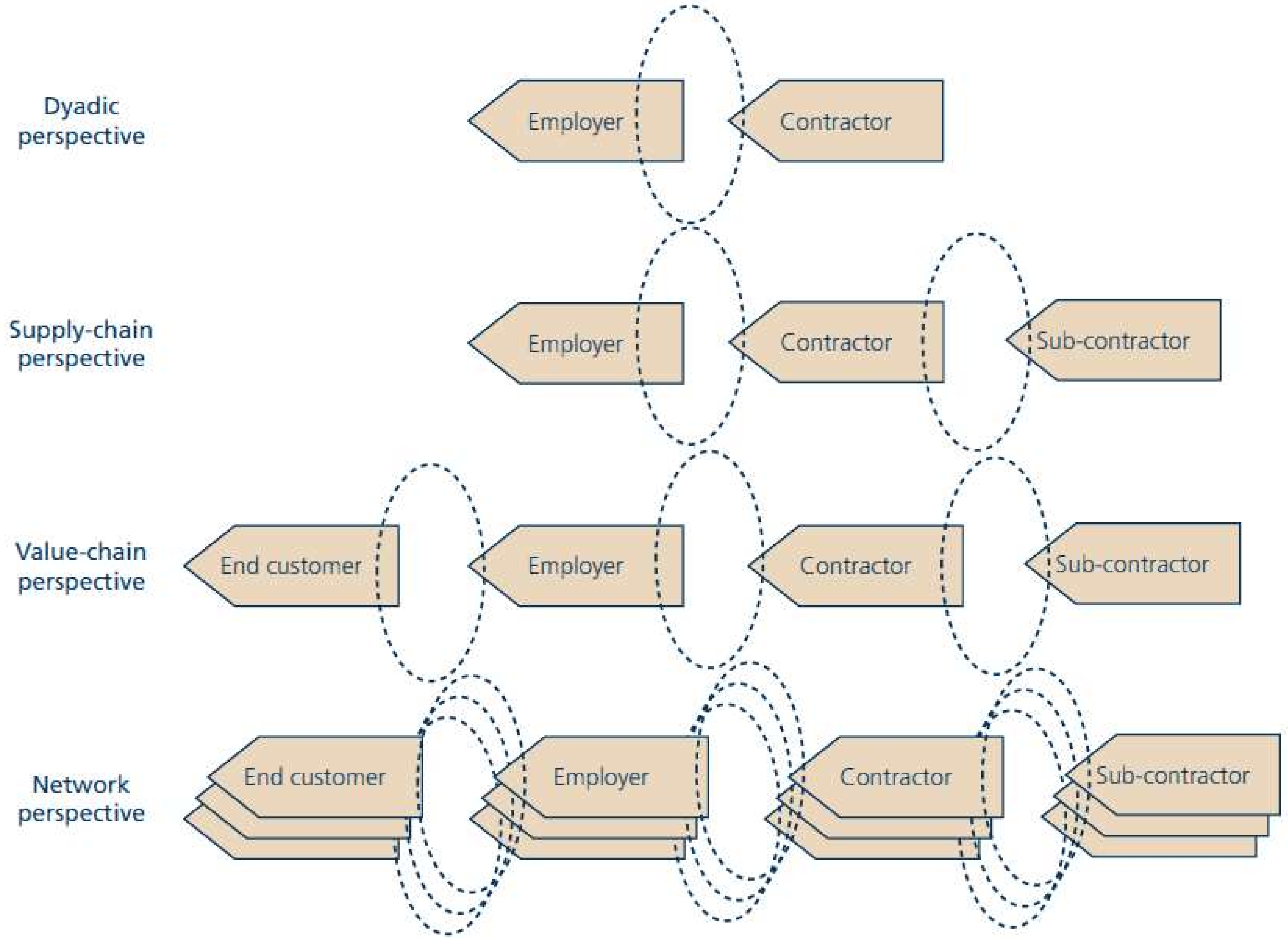
Problems in contract management

- Misalignment of objectives between client and supplier.
- The buyer is lacking sufficient knowledge and expertise.
- Active involvement of engineering and other consultants.
- Contract management expertise/efficiency
- Inefficient decision-making.
- Frequent scope and planning changes.
- Misunderstanding of what has been agreed.
- Payment problems.
- Local political pressure.

Perspectives on contract management

- Dyadic perspective
  - Contracts are closed based upon interests of buyer and seller only.
- Supply chain perspective
  - Contracts are closed based upon recognizing interests of key supply chain partners.
- Value-chain perspective
  - Contracts are closed based upon client's key interests and requirements.
- Network perspective
  - Contracts are closed recognizing value network interdependencies.

FIGURE 5.2 Different perspectives on contractual relationships



Contract models

- Construction-only contract
  - Contractor constructs the project in accordance with the design provided by the client
- Design and construct (D&C)
  - Contractor designs and provides, in accordance with the client's requirements, plant and/or other works.
- Contract for engineer-procure-construct(EPC)
  - Contractor delivers project or work turnkey.
- Design-build-finance-maintain (DBFM) contract
  - Contractor completes work at own risk and gets paid on long-term payments after delivery.
- Design-build-finance-maintain-operate (DBFM-plus)
  - Contractor completes and operates work at own risk and gets paid based upon actual performance.

Contract model responsibilities

- In construct contracts the risk and liability for design and engineering lies with the client or the client's engineer. The contractor is liable to the degree to which their work meets the client's specifications.
- Where an EPC contract applies the contractor is responsible for securing that the work delivered meets the customer's functional design, which beforehand was checked and accepted by the contractor and as such became part of the contractor's responsibility.

Contractor building blocks: pricing and payments

- Fixed-price contract
  - the client orders the contractor to perform the required activities at a fixed price, and to have the work completed by a predetermined date.
- Cost-reimbursable basis
  - The client orders the contractor to perform the required activities and/or to provide equipment at a predetermined hourly rate, in combination with a prearranged percentage to cover the overhead costs. Next, a profit percentage is agreed. All materials for the project are paid for by the client.
- Unit-rate contract/charter contract.
  - Unit-rate contracts are used for activities which are common, repetitive and/or standardized but which are difficult to estimate in terms of volume and time.

Cost reimbursable contracts

FIGURE 5.3 Elements of cost reimbursable contracts

- Wages and salaries of key managers and workers.
- Percentage for general overhead and profit.
- Reporting procedures for hours worked, and consumption of materials.
- Cost of tooling and special equipment.
- Hiring of subcontractors and allowance for procurement activities.
- Costs related to coordinating the work of subcontractors.
- Approvals on cost estimates for extra work.
- Approvals for materials to be delivered by client.
- Agreement on what facilities will be provided by client.
- Resumes of key personnel to be assigned by contractor.
- Arrangement of the required licenses and permits from local authorities.
- Approval for selection of subsuppliers of contractors.

Deciding on fixed or reimbursable contracts?

The decision for fixed-price or cost-reimbursable contracts concerns the following factors:

- **Comprehensiveness of the specification,** absence of specifications makes a fair comparison impossible.
- **Available time,** is there enough time for a tender procedure and price negotiations?
- **Technical expertise,** when specialized knowledge and skills are required a cost-reimbursable contracts is often preferred.
- Degree of **knowledge of the industry,** about methods and price arrangements

Additional contracting arrangements
Payment terms

- Milestone payments
  - Payments are made based upon deliveries made for each project planning stage.
- Bank guarantee
  - Guarantee issued by the bank of the supplier that supplier will meet its obligations.
- Concern guarantee
  - Holding company secures payment for agree sum in case business unit may fail in making payments.
- Performance bond
  - Written guarantee form a third party guarantor.

Additional contracting arrangements

Penalty clauses, liquidated damages and warranty conditions

- Legal system
  - The applicable law in a specific country or region.
- Performance guarantee
  - The contractor guarantees the actual output or outcome of the work to be delivered.
- Liquidated damages
  - Sum that will be paid in case the contractor fails to deliver works according to the client's specifications.
- Penalty clause
  - Payment by the contractor in case of partial failure in delivery of works.

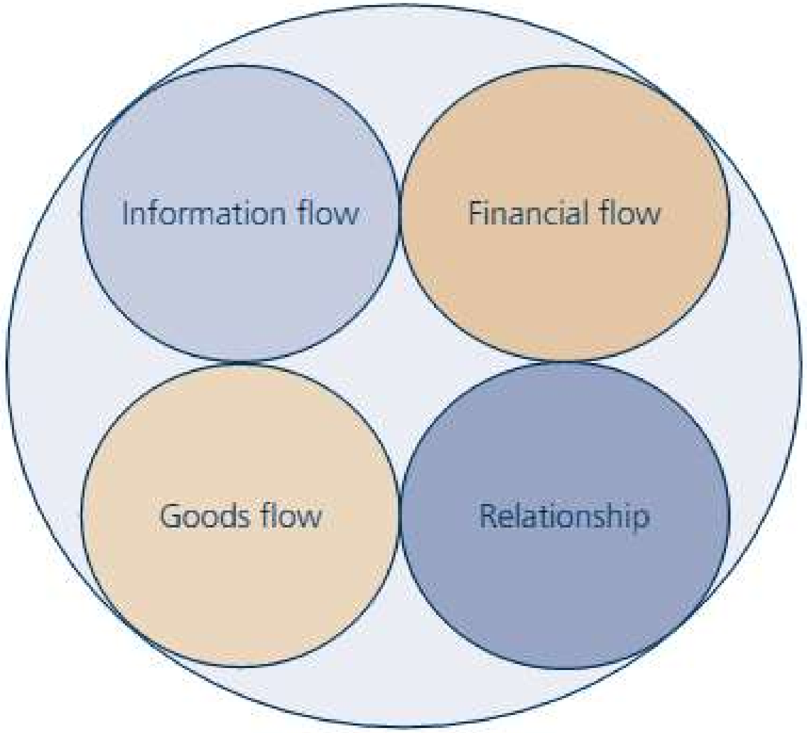
Subcontracting and project execution

- Subcontractors and materials suppliers make up 50–70 per cent of the contract price.
- The procurement organization often has a tense relationship with its supply partners, who use every opportunity to cut costs, give in on quality and delivery, and charge heavily for extra work.

- **'Dyadic perspective':**
  - a 'win–lose' attitude of contract partners.
  - A major disadvantage of this is that parties will pursue only their own self-interest to the detriment of the client's interest.
  - This traditional approach towards subcontracting and procurement should therefore only apply for non-strategic, low-volume subcontractors and suppliers.
- **Back-to-back agreements:**
  - Key subcontractor contracts reflect all conditions of the main contract.

Contract governance

FIGURE 5.4 Contract management: four dimensions need to be managed in parallel



Summary

- Contract management is defined as 'the process which ensures that all parties to a contract fully meet their obligations, in order to satisfy the operational objectives of the contracts and the strategic business goals of the customer'.
- Contract management puts demands on the governance structure; the way communication and information is exchange among parties.
- To resolve operational problems, contract managers have different perspectives; dyadic, the supply chain, the value-chain and the network perspectives.
- Contract parties may have different attitudes towards contracting. When disputes arise each party will seek for power strategies to outsmart the other party.
- A collaborative view towards contracting helps avoid misunderstandings in the pre-contractual stage, the contractual stage and the post-contractual stages.