Managing Contracts

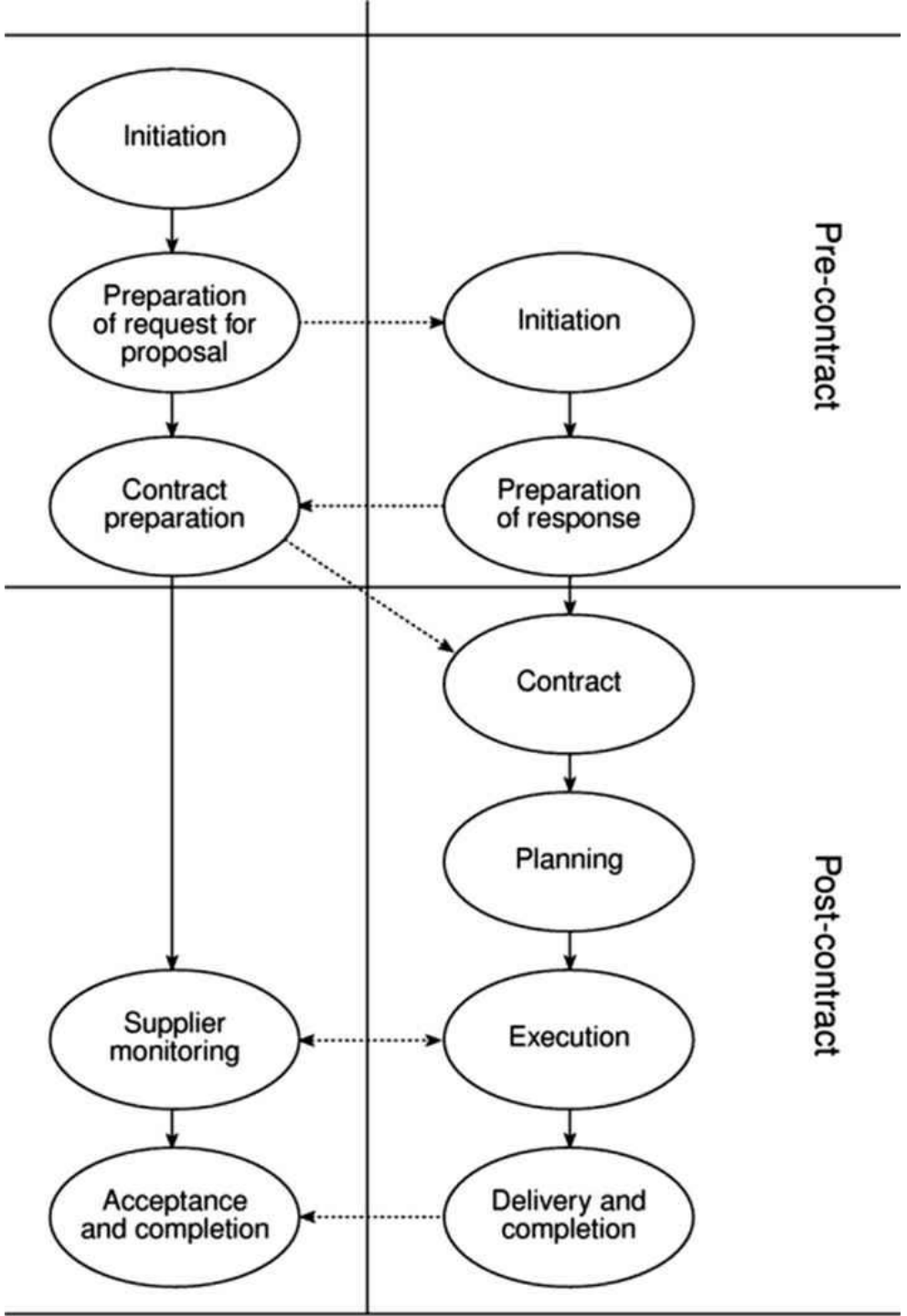
Module4-part-3

Acquiring software from external supplier

This could be:

- a bespoke system - created specially for the customer
- off-the-shelf - bought ‘as is’
- customized off-the-shelf (COTS) - a core system is customized to meet needs of a particular customer

- ISO 12207 acquisition and supply process



Types of contract

- Fixed price contracts
- Time and materials contracts
- Fixed price per delivered unit

Fixed Price Contracts

- With fixed price contracts, also known as lump sum contracts, the buyer and service provider agree on a fixed price for the services in question.
- This type of contract is low-risk for the buyer, but high-risk for the seller since the time and costs of the project could exceed the fixed price.
- For this reason, a fixed price contract should include a detailed scope of work that clearly outlines what the buyer can expect for the agreed-upon price.
- When the contract is signed, the seller must complete the task or deliver the goods as agreed or risk being in breach of contract.

Advantages to customer:

- known expenditure
- supplier motivated to be cost-effective

Disadvantages:

- supplier will increase price to meet contingencies
- difficult to modify requirements
- upward pressure on the cost of changes
- threat to system quality

Time and materials

- This contract is used when labor is the main deliverable and typically provides the seller an hourly rate.
- This is one of the most beautiful engagements that can get into by two or more parties. This engagement type is the most risk-free type where the time and material used for the project are priced.
- The contractor only requires knowing the time and material for the project in order to make the payments. This type of contract has short delivery cycles, and for each cycle, separate estimates are sent of the contractor.
- Once the contractor signs off the estimate and Statement of Work (SOW), the service provider can start work.
- Unlike most of the other contract types, retainer contracts are mostly used for long-term business engagements.

Advantages to customer:

- easy to change requirements
- lack of price pressure can assist product quality

Disadvantages:

- Customer liability - the customer absorbs all the risk associated with poorly defined or changing requirements
- Lack of incentive for supplier to be cost-effective

Fixed price per unit delivered contracts

FP count	*Design cost/FP*	*implement-ation cost/FP*	*total cost/FP*
to 2,000	$242	$725	$967
2,001-2,500	$255	$764	$1,019
2,501-3,000	$265	$793	$1,058
3,001-3,500	$274	$820	$1,094
3,501-4,000	$284	$850	$1,134

Fixed price/unit example

- Estimated system size 2,600 FPs
- Price
  - 2000 FPs x $967 *plus*
  - 500 FPs x $1,019 *plus*
  - 100 FPs x $1,058
  - i.e. $2,549,300
- What would be charge for 3,200 FPs?

Advantages for customer

- customer understanding of how price is calculated
- comparability between different pricing schedules
- emerging functionality can be accounted for
- supplier incentive to be cost-effective

Disadvantages

- difficulties with software size measurement - may need independent FP counter
- changing (as opposed to new) requirements: how do you charge?

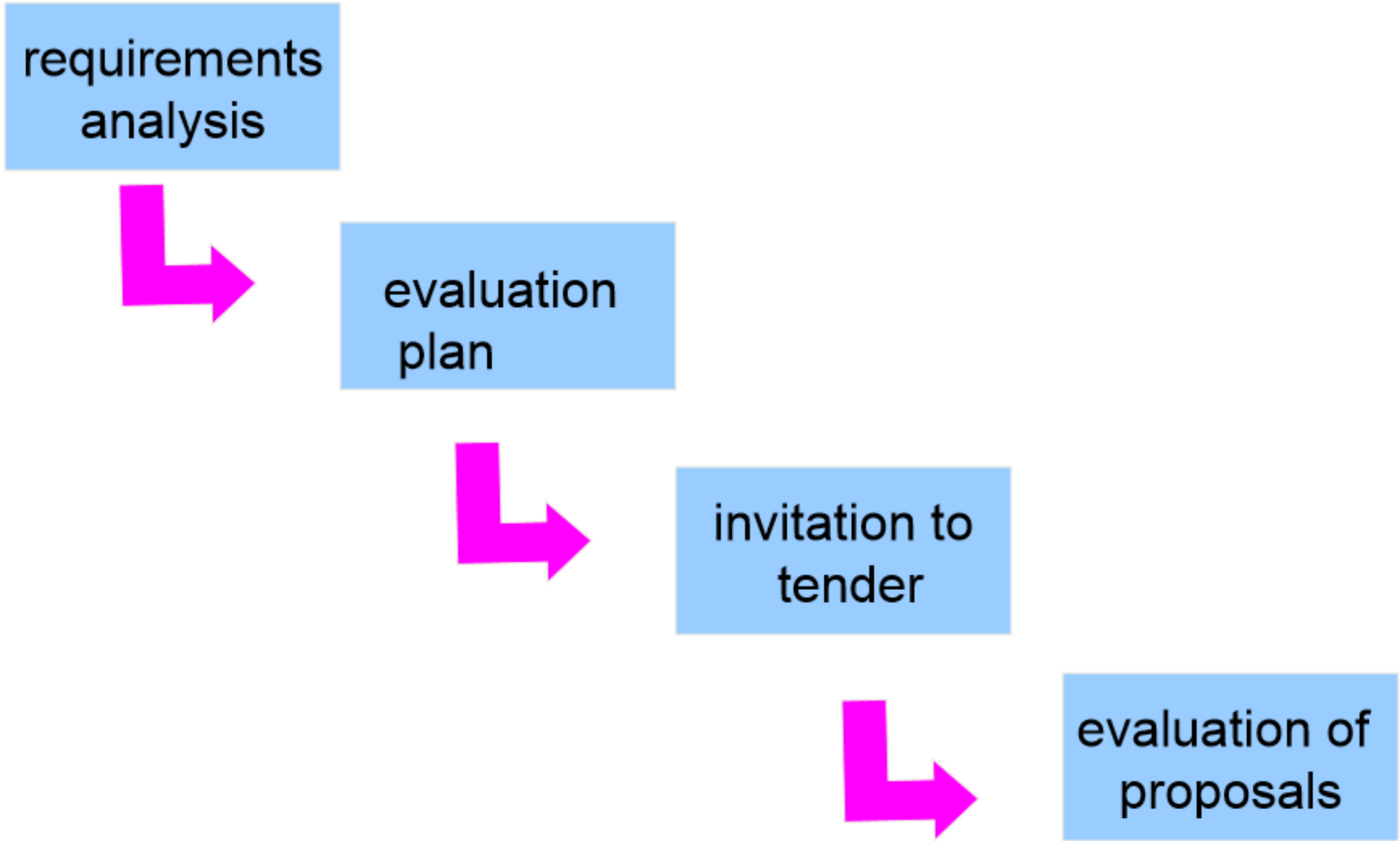
The tendering process

- Open tendering
  - any supplier can bid in response to the *invitation to tender*
  - all tenders must be evaluated in the same way
  - government bodies may have to do this by local/international law

The tendering process

- Restricted tendering process
  - bids only from those specifically invited
  - can reduce suppliers being considered at any stage
- Negotiated procedure
  - negotiate with one supplier e.g. for extensions to software already supplied

Stages in contract placement



Stages in contract placement

- **Requirements analysis**
- Before potential supplier can be approached, you need to have a clear set of requirements.
- Two points need to be emphasized here.
- The first is that it is easy for this step to be skimped where the user has many day-to-day pressures and not much time to think about future developments. In this situation, it can be useful to bring in an external consultant to draw up a requirements document. Even here, users and their managers need to look carefully at the resulting requirements document to ensure that it accurately reflect their needs.

- Main sections in a requirements document
  1 Introduction
  2 A description of any existing systems and the current environment
  3 The customer's future strategy or plans
  4 System requirements-mandatory/desirable features
  5 Deadlines- functions in software, with necessary inputs and outputs – standards to be adhered to – other applications with which software is to be compatible – quality requirements e.g. response times
  6 Additional information required from potential suppliers
- The requirements define carefully the functions that need to be carried out by the new application and all the necessary inputs and outputs for these functions. The requirements should also state any standards with which there should be compliance, and the existing systems with which the new system needs to be compatible.

- **Invitation to tender (ITT)**
- Having produced the requirements and the evaluation plan, it is now possible to issue the invitation to tender to prospective suppliers.
- Essentially, this will be the requirement document with a supporting letter, which may have additional information about how responses to the invitation are to be lodged.
- A deadline will be specified and it is hoped that by then a number of proposals with price quotations will have been received.
- In English law, for a contract to exist there must be an offer on one side that must be accepted by the other side. The invitation to tender is not an offer itself but an invitation for prospective suppliers to make an offer.
- Note that bidder is making an offer in response to ITT
  - acceptance of offer creates a contract
  - Customer may need further information
  - Problem of different technical solutions to the same problem

Evaluation of proposals

- This needs to be done in a methodical and planned manner. An evaluation plan, which will describe how each proposal will be checked to see if it meets each requirement. This reduces risks of requirements being missed and ensures that all proposals are treated consistently.
- Otherwise, there is a risk that a proposal might be unfairly favoured because of the presence of a feature that was not requested in the original requirement.
- It will be recalled that an application could be either bespoke, off-the-shelf, or customized. In the case of off-the-shelf packages, it would be the software itself that would be evaluated and it might be possible to combine some of the evaluation with acceptance testing.

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- How are proposals to be evaluated?
- Methods could include:
  - –reading proposals
  - –interviews
  - –demonstrations
  - –site visits
  - –practical tests
- Need to assess value for money for each desirable feature
- Example:
  - – feeder file saves data input
  - – 4 hours a month saved
  - – cost of data entry at RM20 an hour
  - – system to be used for 4 years
  - – if cost of feature RM1000, would it be worth it?

Memoranda of agreement (MoA)

- Customer asks for technical proposals
- Technical proposals are examined and discussed
- Agreed technical solution in MoA
- Tenders are then requested from suppliers based in MoA
- Tenders judged on price
- Fee could be paid for technical proposals by

How would you evaluate the following?

- **Usability of existing package**
  Could try out a demo or ask existing users
- **Usability of application to be built**
  You would have to make stipulation about the process e.g. on the development of interface prototypes; you could also specify performance requirements
- **Maintenance costs of hardware**
  this could be incorporated in a maintenance agreement and you could compare the terms offered by different potential suppliers; another approach is ask to current users of the hardware about their experience of it.

How would you evaluate the following? con't

- **Time taken to respond to support requests**
  this could once again be made a contractual matter and the terms offered by different suppliers could be compared; suppliers could be asked to supply evidence of their past performance (but they might refuse, or not tell the truth); you could ask for references from current customers of the supplier;
- **Training**
  once again references could be taken up; you could ask for the CV of the trainer; you could even get them to give a short presentation

Typical terms of a contract

The terminology used in the contract document may need to be defined, for example, who is meant by the words 'client' and 'supplier'.

Form of agreement

- For example, is it a contact of sale, a lease, or a licence? Also, can the subject of the contract, such as a licence to use a software application, be transferred to another party?

Goods and services to be supplied

- Equipment and software to be supplied This includes an actual list of the individual pieces of equipment to be delivered, complete with the specific model numbers.

Services to be provided- This covers such things as:

- documentation;
- installation;
- conversion of existing files;
- maintenance agreements;
- transitional insurance arrangements.

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- **Ownership of the software**
- Who has ownership of the software? There are two key issues here: firstly, whether the customer can sell the software to others and, secondly, whether the supplier can sell the software to others.
- Where off-the-shelf software is concerned, the supplier often simply grants a license for you to use the software.
- Where the software is being written specially for a customer, then that customer will normally wish to ensure exclusive use of the software - they may object to software which they hoped would give them a competitive edge being sold to their rivals.

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Environment-

- Where physical equipment is to be installed, the demarcation line between the supplier's and customer's responsibilities with regard to such matters as accommodation and electrical supply needs to be specified. Where software is being supplied, the compatibility of the software with the existing hardware and operating system platforms would need to be confirmed.

Customer commitments

- Even when work is carried out by external contractors, a development project still needs the participation of the customer. The customer will have to provide accommodation for the suppliers and perhaps other facilities such as telephone lines.

Acceptance procedures

- Good practice would be to accept a delivered system only after it has undergone user acceptance tests.

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Standards

- This covers the standards with which the goods and services should comply. For example, a customer can require the supplier to conform to the ISO 12207 standard relating to the software life cycle and its documentation.

Project and quality management

- The arrangements for the management of the project must be agreed. Among these would be frequency and nature of progress meetings and the progress information to be supplied to the customer. The contract could require that appropriate ISO 9000-series standards be followed.

Timetable

- This provides a schedule of when the key parts of the project should be completed. This timetable will commit both the supplier and the customer.

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- **Price and payment method**
- Obviously the price is very important! What also needs to be agreed is when the payments are to be made. The supplier's desire to be able to meet costs as they are incurred needs to be balanced by the customer's requirement to ensure that goods and services are satisfactory before parting with their money.
- **Miscellaneous legal requirements**
- This is the legal small print. Contracts often have clauses that deal with such matters the legal jurisdiction that will apply to the contract, what conditions would apply to the sub-contracting of the work, liability for damage to third parties, and liquidated damages. Liquidated damages are estimates of the financial losses that the customer would suffer if the supplier were to fall short of their obligations.

Contract management

- We need to consider the communications between the supplier and the customer while the work contracted for is being carried out. It would probably suit all concerned if the contractor could be left to get on with the work undisturbed.
- However, at certain decision points, the customer needs to examine work already done and make decisions about the future direction of the project. The project will require representatives of the supplier and customer to interact at many points in the development cycle - for example, users need to be available to provide information needed to carry out effective detailed interface design.
- This interaction, or other external factors, often leads to changes being needed, which effectively vary the terms of the contract and so a careful change control procedure is needed. Each of these topics will now be tackled in a little more detail.

- When a the contract is being negotiated, certain key points in the project can be identified where customer approval is needed before the project can proceed. For incremental delivery, example, a project to develop a large system can be divided into increments. For each increment there could be an interface design phase, and the customer needs to approve the designs before the increment is built. There could also be a decision point between increments.
- For each decision point, the deliverables to be presented by the suppliers, the decisions to be made by the customer and the outputs from the decision point all need to be defined. These decision points have added significance if payments to the supplier are based on them. Not only the supplier but also the customer has responsibilities with respect to these decision points - for example, the supplier should not be unnecessarily delayed while awaiting customer approval of some interim deliverable.
- Where work is contracted out there will be a general concern about the quality of that work.

Acceptance

- When the work has been completed, the customer needs to take action to carry out acceptance testing. The contract might put a time limit on how long acceptance testing can take, so the customer must be organized to carry out this testing before the time limit for requesting corrections expires.
- We have already noted that some software houses are rather cursory with their pre-acceptance testing: the implication seeming to be that they would rather the users spent their time on testing than they themselves. This imposition can be reduced by asking to approve the supplier's internal test plans.
- Part or all of the payment to the supplier will depend on this acceptance testing. Sometimes part of the final payment will be retained for a period of operational running and is eventually paid over if the levels of reliability are as contracted for.

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- There is usually a period of warranty during which the supplier should fix any errors found for no charge.
- The supplier might suggest a very short warranty period of say 30 days. It is in the customer's interests to negotiate a more realistic period of say at least 120 days.