# CSE 4016 Software Project Management

**Managing Contract** 

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## Contract Management

Definition: Contract management or contract administration is the management of contracts made with customers, vendors, partners, or employees.

#### Types of contract

Acquiring software from external supplier could be done via: (one way of classification)

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

## Types of contract (based on payment)

- Fixed price contracts
- Time and materials contracts

□ Fixed price per delivered unit

- □ 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

#### 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

FP count	Design cost/FP	implement- ation cost/FP	total cost/FP
Upto 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

Fixed price/unit

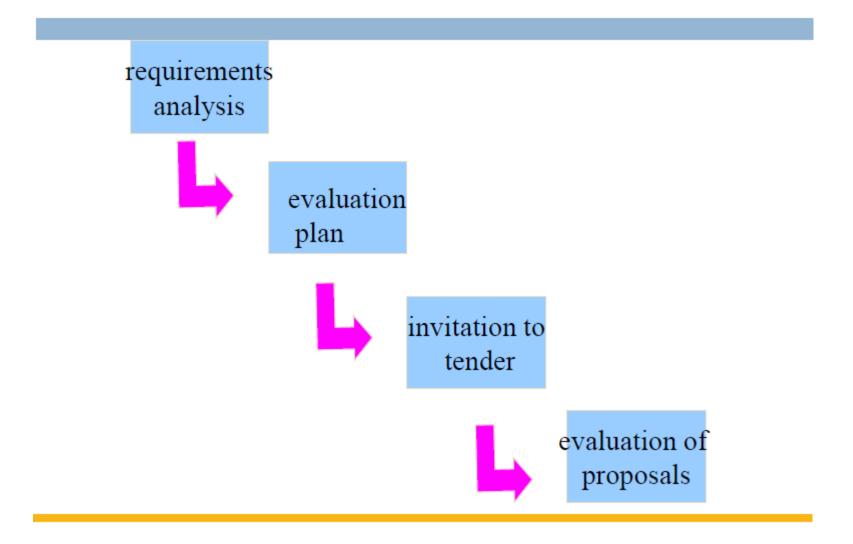
#### Disadvantages

- 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
- □ 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



## Requirements document

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- Introduction
- Description of existing system and current environment
- Future strategy or plans
- System requirements mandatory/desirable features
- 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
- Additional information required from bidders

## Evaluation plan

- How are proposals to be evaluated?
- □ Methods could include:
  - **reading** proposals
  - **□**interviews
  - demonstrations
  - □site visits
  - practical tests

## Invitation to tender (ITT)

- □ 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

- Check the document that it contains all requirements
- □ Interviewing suppliers
- Demonstrations
- □ Site visits
- □ Practical tests

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- □ Definition-Form of agreement-lease, license, Sale
- Goods and services to be supplied
- Ownership of software
- Environment
- Acceptance Standards
- □ Time table
- Price and payment method
- □ Legal requirements

## Acceptance

- When the work is completed, customer needs to tack action to carry out acceptance testing.
- □ The contract may put a time limit on how long acceptance testing can take.