

CSE 4016 Software Project Management

Managing Contract

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Contract Management

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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
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Types of contract (based on payment)

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

Fixed price contracts

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- ❑ **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
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Time and materials

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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

<i>FP count</i>	<i>Design cost/FP</i>	<i>implementation cost/FP</i>	<i>total cost/FP</i>
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?

Fixed price/unit

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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

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- 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
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Stages in contract placement

requirements
analysis



evaluation
plan



invitation to
tender



evaluation of
proposals

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
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Evaluation plan

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

Invitation to tender (ITT)

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- 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

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

Typical terms of a contract

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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
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Acceptance

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