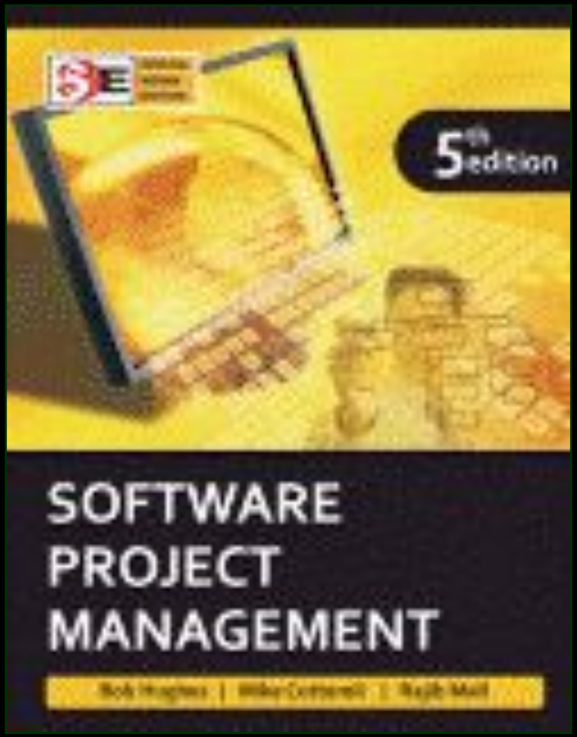
Software Project Management
Fifth Edition



Chapter 10

Contract management

Acquiring software from external supplier

This could be:

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

Types of contract

- fixed price contracts
- time and materials contracts
- fixed price per delivered unit

Note difference between goods and services

Often licence to use software is bought rather than the software itself

Fixed price contracts

Advantages to customer

- known expenditure
- supplier motivated to be cost-effective

Fixed price contracts

Disadvantages

- supplier will increase price to meet contingencies
- difficult to modify requirements
- cost of changes likely to be higher
- threat to system quality

Time and materials

Advantages to customer

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

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Time and materials

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
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?

Fixed price/unit

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 (including EU and WTO, World Trade Organization, requirements

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

requirements analysis

→ evaluation plan

→ invitation to tender

→ evaluation of proposals

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Requirements document: sections

introduction

description of existing system and current environment

future strategy or plans

system requirements -

mandatory/desirable features

deadlines

additional information required from bidders

Requirements

These will include

- 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

Evaluation plan

How are proposals to be evaluated?

Methods could include:

- reading proposals
- interviews
- demonstrations
- site visits
- practical tests

Evaluation plan -contd.

Need to assess value for money (VFM) for each desirable feature

VFM approach an improvement on previous emphasis on accepting lowest bid

Example:

- feeder file saves data input
- 4 hours work a month saved at £20 an hour
- system to be used for 4 years
- if cost of feature £1000, would it be worth it?

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

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 customer

Contracts

A project manager cannot be expected to be a legal expert – needs advice

BUT must ensure contract reflect true requirements and expectations of supplier and client

Contract checklist

Definitions – what words mean precisely e.g. ‘supplier’, ‘user’, ‘application’

Form of agreement. For example, is this a contract for a sale or a lease, or a license to use a software application? Can the license be transferred?

Goods and services to be supplied – this could include lengthy specifications

Timetable of activities

Payment arrangements – payments may be tied to completion of specific tasks

Contract checklist - continued

Ownership of software

- Can client sell software to others?
- Can supplier sell software to others? Could specify that customer has ‘exclusive use’
- Does supplier retain the copyright?
- Where supplier retains source code, may be a problem if supplier goes out of business; to circumvent a copy of code could be deposited with an **escrow** service

Contract checklist - continued

Environment – for example, where equipment is to be installed, who is responsible for various aspects of site preparation e.g. electricity supply?

Customer commitments – for example providing access, supplying information

Standards to be met

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Contract management

Some terms of contract will relate to management of contract, for example,

Progress reporting

Decision points – could be linked to release of payments to the contractor

Variations to the contract, i.e. how are changes to requirements dealt with?

Acceptance criteria

How would you evaluate the following?

usability of an existing package

usability of an application yet to be built

maintenance costs of hardware

time taken to respond to requests for software support

training

Contract management

Contracts should include agreement about how customer/supplier relationship is to be managed e.g.

decision points - could be linked to payment

quality reviews

changes to requirements