

Chapter 10 Managing contracts

Further exercises and pointers

1. At IOE, the management are considering 'out-sourcing' the maintenance accounting system i.e. getting an outside specialist organization to take over the operation, maintenance, and support activities associated with the system. Write a short memorandum to management outlining the advantages and disadvantages of such a re-organization.

We won't actually use a memorandum format for these pointers!

The arguments in favour of outsourcing include the following.

- It would allow IOE management and staff to concentrate their efforts on providing their clients with a good service rather than being pre-occupied with the 'house-keeping' and 'admin' involved with looking after the accounting system
- This improved focus on the IOE customer lets IOE compete more effectively with its rivals.
- The people to whom the responsibility for the accounting has been transferred will be experts in this field and be able to do things more efficiently and effectively than internal IOE staff.
- IOE can get a very good deal financially by putting this work out to tender because competition between prospective suppliers tends to drive prices down.

There are some arguments against outsourcing which include the following.

- Once you have signed a contract, with a service company it is difficult to terminate the contract if the company does not provide an adequate service.
- Everything that the service company is to do has to be defined in the contract: if IOE have unforeseen additional requirements (or even simply overlook an existing need) separate charges will be made.
- If improved technologies and business solutions come onto the market, IOE might not be able to exploit them because they are stuck with the facilities specified in the contract.
- Dispensing with their internal staff makes it difficult to revert to in-house operation if outsourcing was not as successful as was hoped.

2. Further exercise 4 at the end of Chapter 1 concerned a software house that needed a training course developed to introduce new users to an order processing application that they had developed. Assume that you are an independent training consultant who has been approached by the software house to develop the training package. You have agreed in principle and now a contract is being negotiated for the work.

a) List the points that you would want clarified and included in the contract.

Note that in this scenario, there are now three major parties, the software supplier, the client for the software (and supporting training) and the ICT training consultant.

The consultant would probably want to clarify the following.

- With whom will the contract be? The software supplier or the client?
- The exact scope of the work to be e.g. what training materials are to be produced? Does the work include delivery of the courses by the consultant? (Below we assume that delivery is included.)
- The requirements for the training course, e.g. what functionality is to be covered?
- Financial arrangements, including fees, method and timing of payments, the treatment of expenses.
- Quality control e.g. approval of materials to be used
- Timing, dates of courses, number of delegates.
- Location, equipment to be supplied.

The software house might not be as concerned about some of the detail above (e.g. equipment to be supplied) as the consultant as they might regard these as matters that need to be arranged directly with ICT support staff.

b) Having produced the list of points requiring clarification, examine it from the point of view of the software house. Are there any additional points that they would want clarified?

The software house might be particularly interested in the intellectual property rights relating to the course. They might want to be able to re-use it with other clients, perhaps using different presenters. They might also be concerned that the ICT consultant did not start delivering training to other clients without the software house as a go-between.

3. In each of the following cases discuss whether the type of application package to be adopted would be most likely to be bespoke, off-the-shelf or COTS.

a) A college requires a student fees application. It is suggested that the processes required in the application are similar to those of any billing system with some requirements that are peculiar to the administration of higher education.

Note that each of the pointers here is speculative. In the case of the student fees application, it might be possible to take a standard billing system and then modify it to deal with student fees – one of the authors has had personal experience of this approach. This would be a classic customized off-the-shelf (COTS) solution. Arguments against this approach here might include that the need integrate this with other student record applications might require a more ‘bespoke’ approach. As there are many institutions with similar needs, a bespoke or COTS solution could evolve into a classic OTS if it is marketed more widely.

b) A computer-based application is needed at IOE to hold personnel details of staff employed.

Every substantial organization will have some kind of Personnel or HR function and off-the-shelf solutions in this area are plentiful.

c) A system is required by a national government that calculates, records and notifies individual tax-payers about income tax charges.

This application (which is for a sovereign government which will have its own tax rules) could well be unique and is likely to be custom-built.

d) A expert system for use in a hospital to diagnose the causes of eye complaints.

It would depend a lot on the hospital! Given the very specialist nature of the application, it would probably need to be created with eye specialists being the driving force who would then use the application and critically evaluate its output in a clinical setting. Once the system has been reasonably developed, other eye specialists might want to evaluate its use and even suggest extensions or modifications to the application to deal with problems in their own area of expertise. This suggests that at least initially there would be a more in-house approach with co-operative development with early adopters.

4. The schedule of charges per function point shown in Table 10.1 has higher rates for larger systems. Give arguments explaining why this might be justified and also arguments against.

The argument for higher unit charges for larger scale projects centres on the idea of 'diseconomies of scale' which has been discussed in Chapter 5 on estimating. The idea is that bigger projects are disproportionately more costly because of demands for greater management and co-ordination.

There could, however, be an argument that there would be economies of scale. For example, certain start-up costs tend to be relatively fixed and with larger projects these costs can be spread over more delivered software functionality. Inefficiencies related to 'learning curves', for example, developers getting used to a specific development environment or application domain, should be reduced with larger projects.

Another objection is that the pricing structure would encourage the breaking down of larger systems into a series of sub-systems, each one of which could be developed independently. While generally, this might be welcomed – see the discussion of incremental delivery in Chapter 4 – it would incur additional start-up costs for each increment, plus the costs of modifying existing increments to deal with 'software breakage'.

5. The Table in 10.2 has a charge of 25% and 50% of the normal rate for deleting transactions from an application. This may seem to be rather high for simply removing code. What work would be involved in deleting functionality that could justify this cost?

In order to delete the functionality related to the transaction, the developer would have to examine the code very carefully to identify that belonging to the transaction. A careful inspection would be needed to ensure that none of the code used by the transaction was used by other transactions which were not being deleted. Once the code had been modified to remove the redundant code, regression testing would be needed to make sure that the remaining functionality still worked correctly.

Well-structured code would make these tasks a lot easier. The discussion might be widened to consider the advantages and disadvantages of not deleting the code, but simply putting a block on the use of the transaction in question.

6. Assume that IOE has decided on a COTS solution that will replace the whole of the existing maintenance accounting system rather than simply plugging in additional modules to deal with annual accounts. Write a memorandum that Amanda could send to IOE's legal department outlining the important provisions that a contract to supply this system should have.

This is designed to motivate students to review Section 10.4 *Typical terms of a contract*. The key aspect of the question is the modification of an existing software application to take account the specific needs of IOE.

Among the issues to be considered would be:

- Ownership of the software: for example, could the supplier subsequently sell the modified software to one of IOE's competitors?
- Maintenance and enhancement: what arrangements would be in place if the requirements later have to be changed?
- What happens to the source code if the supplier ceases to trade?
- Specification of the modifications to be made;
- Other goods and services to be supplied e.g. training?
- Customer commitments – what commitments do we need to make, for example, about access to the application in order to made changes;
- Acceptance criteria for the application – we could probably want to carry out an acceptance test
- Warranty period – how long do we have to identify faults and get them corrected?
- Payments – how much these be, and when will they be paid?
- Dispute resolution