Module 4:

Change Control & Contract management

Change Control

- Change control is a systematic approach to managing all changes made to a product or system.
- The purpose is to ensure that no unnecessary changes are made, that all changes are documented, that services are not unnecessarily disrupted and that resources are used efficiently.
- Within information technology (IT), change control is a component of change management.

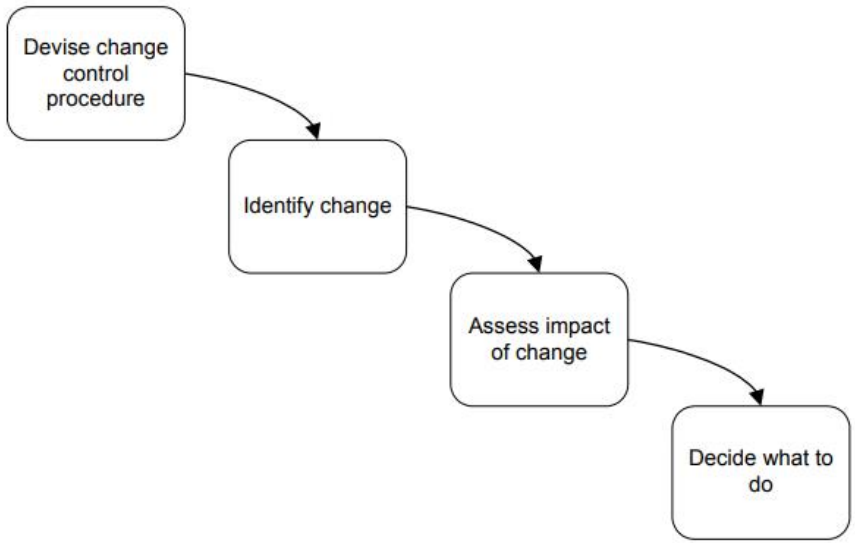
Change Control Procedures

1. One or more users might perceive the need for a change.
2. User management decide that the change is valid and worthwhile and pass it to development management.
3. A developer is assigned to assess the practicality and cost of making the change.
4. Development management report back to user management on the cost of the change; user management decide whether to go ahead.

Cont..

5. One or more developers are authorized to make copies of components to be modified
6. Copies modified.
7. After initial testing, a test version might be released to users for acceptance testing
8. When users are satisfied then operational release authorized – master configuration items updated

Change Control



Managing Contract

- Successful contract management covers the period from the beginning of a procurement until after a contract ends. The receipt of goods and services at the right price, quality, and on time as well as proper compensation of the contractor is the goal of a successful procurement.
- However, poor contract management often results in end-user frustration, reluctance to use new vendors, agency acceptance of poor quality service or goods, increased costs due to lack of quality or overpayment to contractors, lack of contractor accountability, and generally poor contractor performance.
- A good contract is a means to an end. Simply enforcing the contract, however, does not necessarily result in a successful relationship with the contractor. Success should instead be measured by the effectiveness of the program that the contract supports.

Type of contracts

Acquiring software from external supplier could be:

1. a bespoke system – a system that is created from scratch specially for one customer
2. Commercial off-the-shelf (COTS) - bought 'as is' – sometimes referred as shrink wrapped software. Ready made software product that you purchase as opposed to custom made software that is designed for a specific purpose
3. customized off-the-shelf - a basic core system which is customized to meet needs of a particular customer

Commercial off-the-shelf

- Software or hardware products that are ready-made and available for sale to the general public.
- For example, Microsoft Office is a COTS product that is a packaged software solution for businesses.
- COTS products are designed to be implemented easily into existing systems without the need for customization.

Selecting & Acquiring the best Commercial Off The Shelf (COTS) software product

Phase	Step
Prepare	1. Initiate a transparent and controlled process
	2. Establish the normative element
	3. Get the priorities straight
	4. Identify vendors/products
Conduct	5. Vendor/product questionnaire
	6. Conference Room Pilots (CRP's)
	7. Final evaluation
Report	8. Prepare the report
	9. Getting close with the selected vendor(s)
	10. Extend experiences into subsequent phases

Figure 1: Overview of the recommended phases and steps

Selecting & Acquiring..

Initiate a transparent and controlled process:

- It is important to acknowledge that the process of selecting a COTS software product must be transparent and controlled. This means that adequate time must be set aside, a relevant assessment method must be established and agreed upon, and key stakeholders must have adequate time for involvement.

Establish the normative element:

- Without a clear understanding of what the product must support in terms of business processes and regulations, it is impossible to carry out a vendor and product evaluation that is aligned with business goals.

Selecting & Acquiring..

Get your priorities straight:

- When planning vendor and product assessments, it is important to understand the priorities. Consider grouping measurement-points into priority-groups, such as business imperatives, financials, industry focus, support for regulatory compliance, reputation/ awareness, business process support and technical architecture.

Identify vendors/products:

- List the potential candidates. Discuss with key stakeholders and with your team. To identify potential candidates, use your network in other organisations to learn about the type of software they use, search for information on the internet, and consider purchasing reports from analyst companies – they might save you a lot of time.

Selecting & Acquiring..

Vendor/product questionnaire

- Based on the priorities, prepare an initial vendor/ product questionnaire to gain a first impression of the vendor's behaviour and the product's capabilities.

Conference Room Pilots

- Once you've evaluated the questionnaires, you should be in a position to invite qualified vendors to attend a Conference Room Pilot (CRP). Allocate a few days for this process, and make sure that the product presentations are relatively close together. This will make it easier to remember product details and make comparisons.

Selecting & Acquiring..

Final evaluation:

- Consider developing a spreadsheet-based tool to capture the final vendor and product assessments.

Preparing the report:

- Although spreadsheets can be very useful, management will typically require a Word or PowerPoint based report.

Get close to a few vendors – or even just one:

- Once the initial screening is complete, you should have a few – or perhaps only one – vendor to continue working with.

Let the evaluation method inspire the contract, user requirements specification and project follow-up:

- Eventually – but not always – the product assessment ends in concrete negotiations with a selected vendor about a particular product.

Type of Contract

- Another way of classification based on the way of payment to supplier:
  1. fixed price contracts
  2. time and materials contracts
  3. fixed price per delivered unit
  - Note difference between goods and services.
  - Often license to use software is bought rather than the software itself.

Fixed price contracts

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

- The customer is charged at a fixed rate per unit of effort. Ex: per staff-hour.

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

- This is often associated with function point(FP) counting.
- The size of the system to be delivered might be estimated in lines of code, but FP's can be more easily and reliably derived from requirement specifications.

Ex:

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

Ex:

- 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

Disadvantages

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

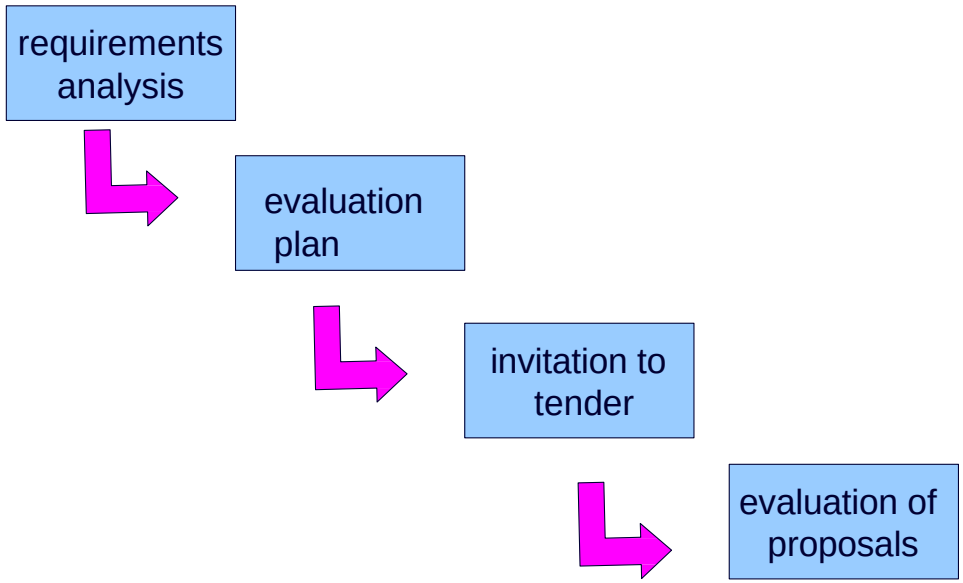
The tendering process

- 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



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

Requirement

- 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

- Need to assess value for money for each desirable feature
- Example:
  - feeder file saves data input
  - 4 hours a month saved
  - cost of inputter £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

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