Project Management

2UCC701

August 2021- November 2021

Module 5 : Managing People in Project

- ● Managing Contracts
- ● The Oldham-Hackman job Characteristics Model
- ● Working in Groups
- ● Working in team
- ● Stress, Health and Safety

Managing Contracts

- 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

Managing Contracts

- Types of Contracts:
- fixed price contracts
- time and materials contracts
- fixed price per delivered unit

Note difference between goods and services
Often license to use software is bought rather than the software itself.
  - Office 365 v/s perpetual software
  - Software as Service (SAS)

Managing Contracts

- **Fixed Price Contract:**

- Advantages to the customer:
  - known expenditure
  - supplier motivated to be cost-effective

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

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Managing Contracts

- Time & Material:
- Advantages to the 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

Managing Contracts

- Fixed price per unit delivered:
- Advantages to the customer:
  - easy to change requirements
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- Disadvantages
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Managing Contracts

- ## Fixed price per unit delivered:

FP count	Design cost per FP	Development cost per FP	Total Cost per FP
Up to 2000	242	725	967
Next 500	255	764	1019
Next 500	265	793	1058
Next 500	274	820	1094
Next 500	284	850	1134

Estimate the cost of if the system size is 2600
Cost = first 2000 @ 967 + next 500@ 1019 + next 100 @ 1058 = 2549300

What will be the cost if size increases to 3200 ?
Cost = first 2000 @ 967 + next 500@ 1019 + next 500 @1058 +next 200 @ 1094 = 3191300

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Managing Contracts

- Fixed price per unit delivered:

- Advantages to the 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?

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Managing Contracts

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 laws
- 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

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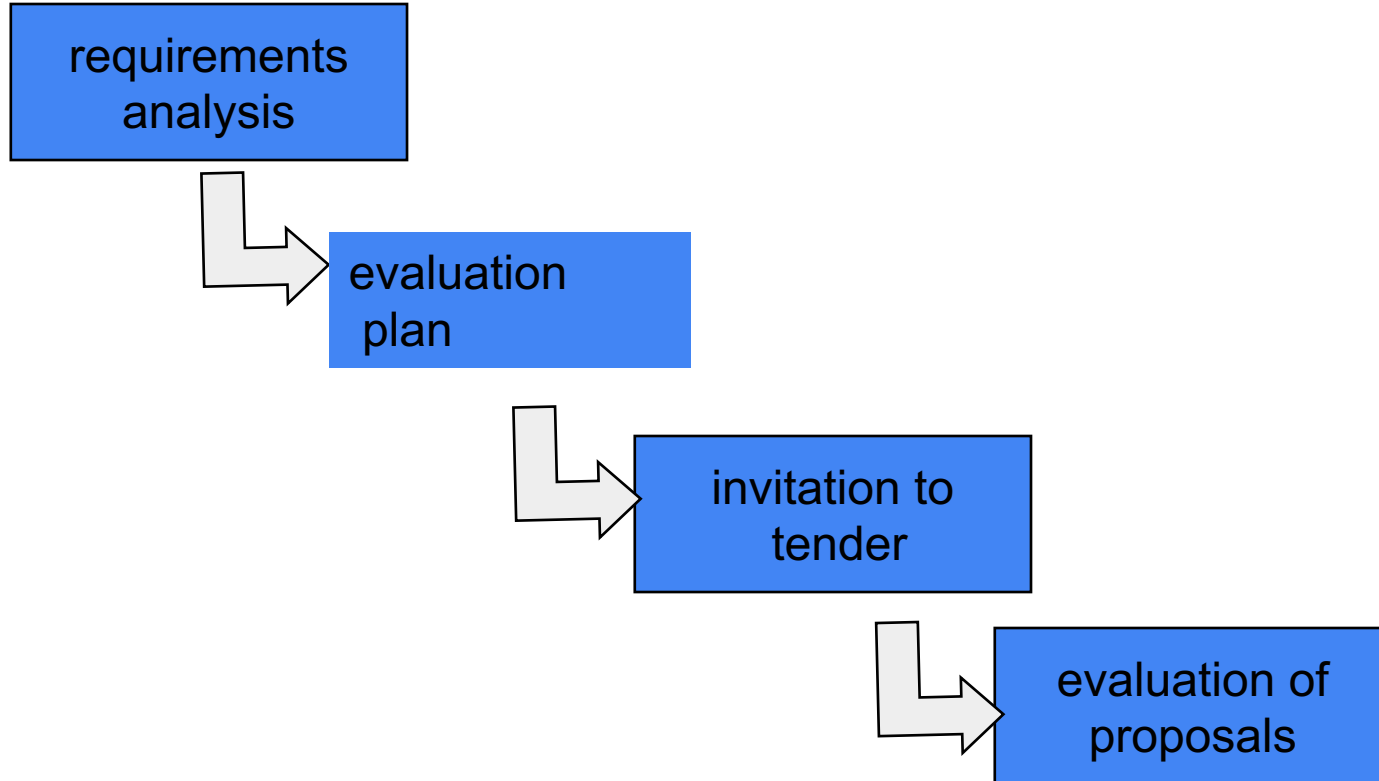
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Requirement Analysis:

Requirement Document Section:

- introduction
- description of existing system and current environment
- future strategy or plans
- system requirements -
  - mandatory/desirable features
- deadlines
- additional information required from bidders

Managing Contracts

Requirement Analysis:

Requirements 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
- additional information required from bidders

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Evaluation Plan

- Methods could include:
  - reading proposals
  - interviews
  - demonstrations
  - site visits
  - practical tests
- Need to assess value for money (VFM) for each desirable feature
- VFM approach an improvement on previous emphasis on accepting lowest bid
  - Such as saving per usage, number of years of using the system etc.

Managing Contracts

Invitation To Tender

- 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

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Evaluation of Proposals

- Cost benefit analysis
- Credentials of bidder

Managing Contracts

Memorandum 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

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Managing Contracts

Contacts:

- 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
- 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
- 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

Managing Contracts

Contact 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
- 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*

The Oldham-Hackman job Characteristics Model

- Focus:
  - To select the best people for the job;
  - To instruct them in the best methods;
  - To give financial incentives in the form of piece work
- Distinguishes between **eligible** (having the right qualifications) and **suitable** candidates (can do the job).
- The danger is employ someone who is eligible but not suitable
- The best situation is to employ someone who is suitable but not eligible! For example, these are likely to be cheaper and to stay in the job.

The Oldham-Hackman job Characteristics Model

- Selection Process:
  - **Create a job specification**.
  - Content includes types of task to be carried out.
  - **Create a job holder profile**
  - Describes the characteristics of the person who could do the job
  - **Obtain applicants**
  - Identify the media that potential job holders are likely to consult. Elicit CVs
  - **Select potential candidates from CVs.**
  - Do not waste everybody's time interviewing people whose CV clearly indicates are unsuitable.
  - **Further selection, including interview**
  - Selection processes could include aptitude tests, examination of work portfolios. Make sure selection processes map to the job holder profile
  - **Other procedures**.
  - e.g. taking up references, medicals etc

The Oldham-Hackman job Characteristics Model

- Motivation:
  - Motivation and application can often make up for shortfalls in innate skills
  - financial incentives
  - motivations vary from individual to individual
  - hierarchy of needs – as lower ones fulfilled, higher ones emerge
    - Lowest level – food, shelter
    - Highest level – self-actualization
  - Three influences on motivation
    - *Expectancy* – the belief that working harder leads to better performance
    - *Instrumentality* – the belief that better performance will be rewarded
    - *Perceived value* of the reward

- Factors affected job satisfaction
  - *Hygiene* or *maintenance factors* – make you dissatisfied if they are not right e.g. pay, working conditions
  - *Motivators* – make you feel the job is worthwhile e.g. a sense of achievement

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The Oldham-Hackman job Characteristics Model

- Identified the following characteristics of a job which make it more 'meaningful'
- **Skill variety:** number of different skills the job holder has the opportunity to exercise
- **Task identity:** the degree to which your work and its results are associated with you
- **Task significance:** the degree to which your job has an influence on others
- Two other factors contributed to satisfaction:
- **Autonomy:** the freedom that you have about the way that you do the job;
- **Feedback:** the information you get back about the results of your work.

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The Oldham-Hackman job Characteristics Model

- Methods to improve job satisfaction:
- Set specific goals
- Provide feedback on the progress towards meeting those goals
- Consider job redesign
  - Job enlargement
  - Job enrichment

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Stress, Health and Safety

- Stress: Pressure due to many reasons:
  - Project is unique , complex, uncertain, different skillset, different team members, race against time, constraints such as cost
- Stress can be reduced by:
  - Good project management should lead to:
    - Reasonable estimates of effort
    - Good project control leading fewer unexpected crises
    - Making clear what is expected of each team member – reduces role ambiguity
    - Reduced role conflict where a person is torn between conflicting responsibilities
  - Bullying tactics are a symptom of incompetent project management.

Stress, Health and Safety

- **Health & Safety:**
- should have a written safety policy
- Management of safety should be embedded in project management.
- Top management must be committed to health and safety (H&S) policy
- Delegation of responsibilities relating to H&S should be clear
- Job descriptions should include H&S related responsibilities
- Need to ensure those given H&S responsibilities should understand and accept them
- There should be a designated safety officer
- Staff, particularly knowledgeable technical specialists, should consulted about safety
- There should be an adequate H&S budget
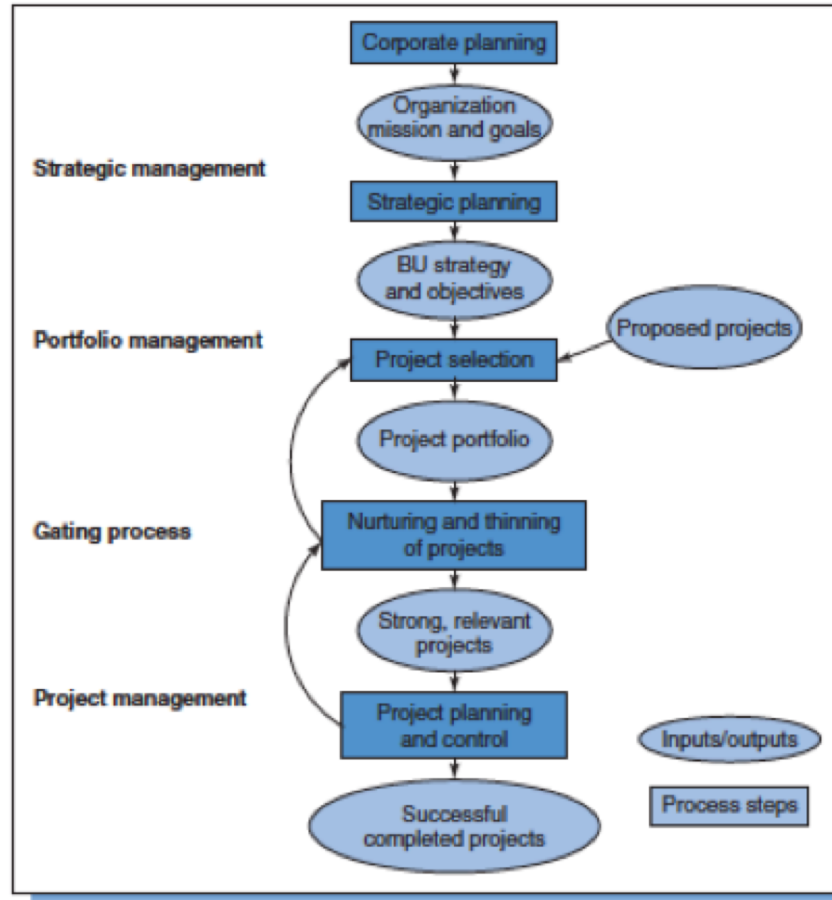
Portfolio Management

A project portfolio is a group of projects or programs in an organization or business unit that aim at strategic objectives, share resources, and must compete for funding

- **Project portfolio management refers to a formal process wherein:**
    - Project proposals are assessed for costs, risks, benefits, and contributions to objectives.
    - Decisions are made conscientiously to authorize certain projects, retain some on hold and dispose of those with limited potential.
    - Available limited resources are allocated effectively so as to insure that approved, priority projects get adequate funding and support.
    - Projects as a whole are " balanced " in terms of high versus low risk, large versus small size, long-term versus short-term focus, etc.—whatever balance the company deems best.
    - Projects are continually tracked, compared, and managed collectively; decisions about each project are based upon benefits and required resources compared to other projects.

Module 4: Project Management in corporate context

Portfolio Management

- **Framework for project selection & portfolio management**
  - Successful projects depend upon two things:
    - Doing the right projects and
    - Doing those projects right.

  - **Strategic management: focus the organization.**
    - Top management articulates the vision and mission of the organization, defines organization objectives and strategic initiatives, decides on the total budget, and allocates resources to business units.
    - Common themes for strategic initiatives are to be the low-cost leader or technology
  - **Portfolio management: select the right projects .**
    - Business unit managers develop goals, strategies, and initiatives that are consistent with corporate objectives and initiatives.
    - These become specific criteria for selecting projects from proposal that are generated internally, requested by customers, or resulting from ad hoc problems or obligations.
  - **Gating methodology nurture or get rid of projects:**
    - Managers assess each project as it moves through gates.
    - They compare project performance to gating criteria and make decisions: important but struggling projects are allocated more resources; poorly performing or mediocre projects are put on hold or canceled.
  - **Project management: manage the projects right.**
    - Projects are managed using sound principles and practices of project management.

Module 4: Project Management in corporate context

Management of projects

Portfolio Management

- **Framework for project selection & portfolio management**
    - When an organization has excess capacity it readily takes on all the projects it can get.
    - But when it does not—when it has insufficient resources (talented people, finances, technological capacity) to support every proposed project that comes along—then logically it pursues only those that contribute the most to its objectives and initiatives.
    - Organizations in which most projects are generated internally rely on the portfolio management process to evaluate proposals and approve projects; those where projects are generated externally rely on the process to determine to which RFPs they should respond.
    - Since projects differ with regard to resource requirements, risk, cost, and strategic value, choosing the right projects for the portfolio can be a complex problem.
    - Projects are in fact investments, and many of the methods used in project portfolio management derive from general principles of investment management.
    - a project portfolio might reduce risk by spreading projects across more than one business sector
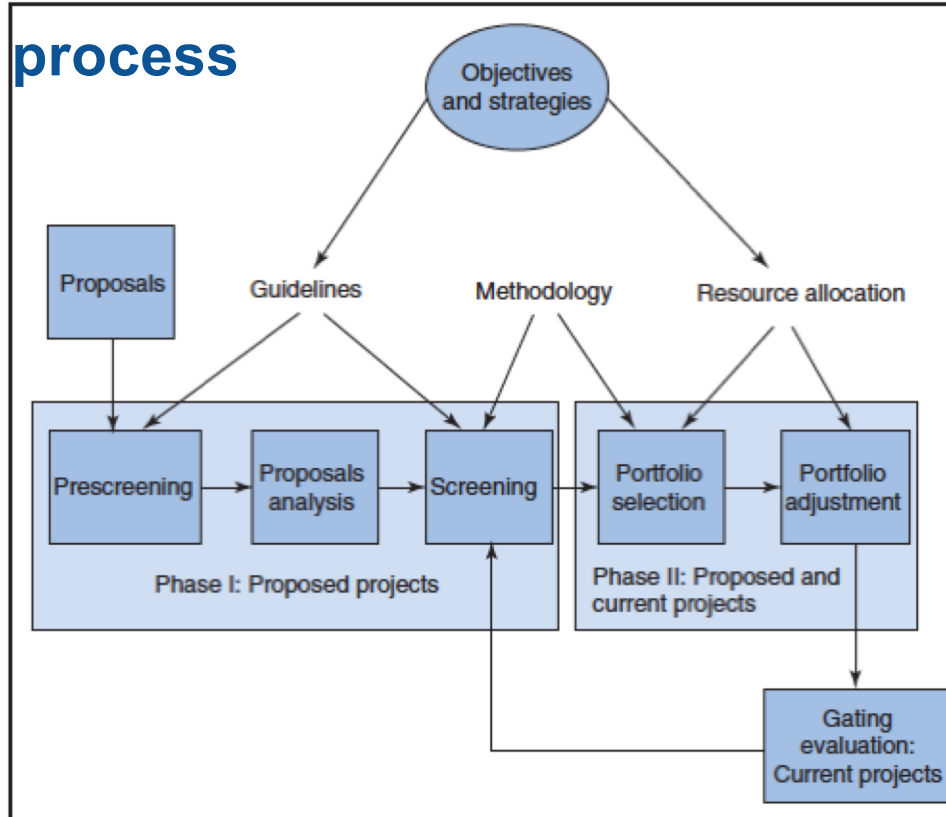
Portfolio Management

- **Selection process**
    - Prescribed means for assessing and comparing projects
    - A set of measurable criteria that reflects its strategic goals and initiatives, as well as a process for evaluating projects in terms of those criteria.

    - The selection process and its relation to other aspects of portfolio management are shown in the two phases

Portfolio Management

- **Selection process**

Module 4: Project Management in corporate context

Portfolio Management

- **Selection process**

Phase I:

Prescreen stage:to eliminate early on project proposals that clearly deficient, to pass this stage must justify in terms of either **survival** (projects are necessary for the health and continued viability of the organization or preventing organization from failing)or **growth** (may offer organization opportunity to prosperity or expansion). The project must pass feasibility study, document expected benefits. Projects with insufficient information or lacking justification are eliminated. PAssed projects are analysed quantitatively and qualitatively and score models.

Portfolio Management

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Portfolio Management

The concerns of project portfolio management include:

- Evaluating proposals for projects
- Assessing the risk involved with projects
- Deciding how to share resources between projects
- Taking account of dependencies between projects
- Removing duplication between projects
- Checking for gaps

Portfolio Management

There are three elements to PPM:

1. Project portfolio definition
   - Create a central record of all projects within an organization
   - Must decide whether to have ALL projects in the repository or, say, only ICT projects
   - Note difference between new product development (NPD) projects and renewal projects e.g. for process improvement

2. Project portfolio management
   - Actual costing and performance of projects can be recorded and assessed

3. Project portfolio optimization
   - Information gathered above can be used achieve better balance of projects e.g. some that are risky but potentially very valuable balanced by less risky but less valuable projects

Module 4: Project Management in corporate context

Portfolio Management

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Selection Process

- Phase I: each project is independently evaluated and screened:
  - prescreening stage to eliminate early on project proposals that are clearly deficient.
  - project to pass this stage it must be justified in terms of either survival or growth.
  - project justification (survival or growth) in a feasibility study, a project champion and sponsor who supports the project, and documented expected benefits.
  - analysis using some combination of quantitative and qualitative models and scoring methods.
  - The analysis might rate or value the proposal using diverse criteria such as " link to strategic objectives, " " financial value " (rate of return, cost/benefit), or " compliance to constraints " (e.g., financial, human resources, or technology/ architecture).

- Phase II, all projects are considered together and only a subset is approved.

Adapted from N. Archer and F. Ghasemzadeh, "An integrated Framework for Project Portfolio Selection," *International Journal of Project Management* 17, no. 4: 207–216, Elsevier Science.