Software Project Management

Lecture 1

Introduction to Software Project Management

Outline of talk

In this introduction the main questions to be addressed will be:

- What is software project management? Is it really different from 'ordinary' project management?
- How do you know when a project has been successful? For example, do the expectations of the customer/client match those of the developers?

What is a project?

Some dictionary definitions:

"A specific plan or design"

"A planned undertaking"

"A large undertaking e.g. a public works scheme"

Longmans dictionary

Key points above are ***planning*** and ***size*** of task

Jobs versus projects

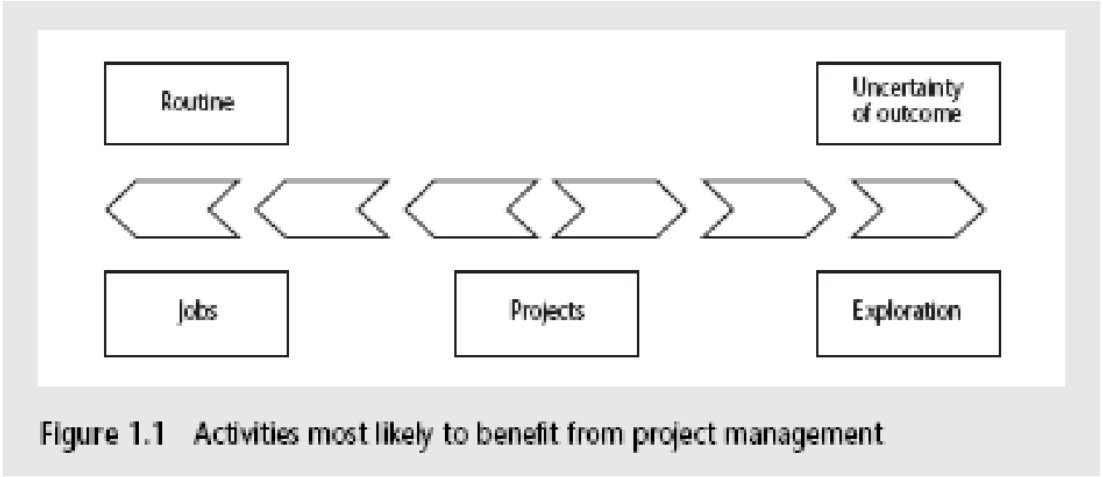

Figure 1.1 Activities most likely to benefit from project management

'Jobs' – repetition of very well-defined and well understood tasks with very little uncertainty

'Exploration' – e.g. finding a cure for cancer: the outcome is very uncertain

'Projects' – in the middle!

Characteristics of projects

A task is more 'project-like' if it is:

- Non-routine
- Planned
- Aiming at a specific target
- Work carried out for a customer
- Involving several specialisms
- Made up of several different phases
- Constrained by time and resources
- Large and/or complex

Are *software* projects really different from other projects?

Not really! …but…

- Invisibility
- Complexity
- Conformity
- Flexibility

make software more problematic to build than other engineered artefacts.

Activities covered by project management

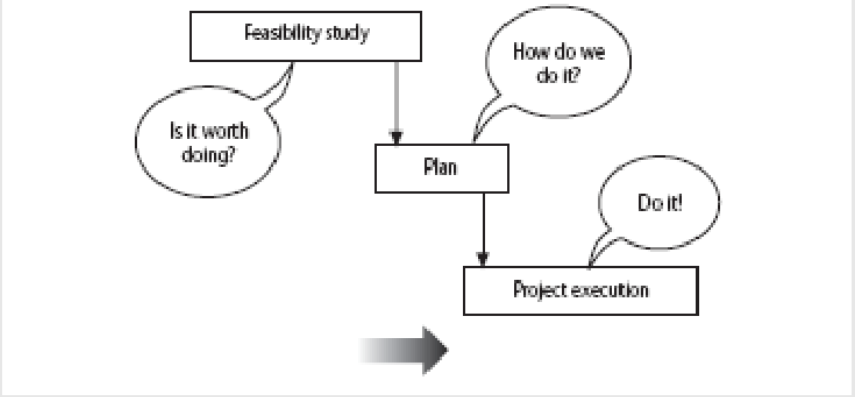

Figure 1.2 The feasibility study/plan/execution cycle

Feasibility study

Is project technically feasible and worthwhile from a business point of view?

Planning

Only done if project is feasible

Execution

Implement plan, but plan may be changed as we go along

The software development life-cycle (ISO 12207)

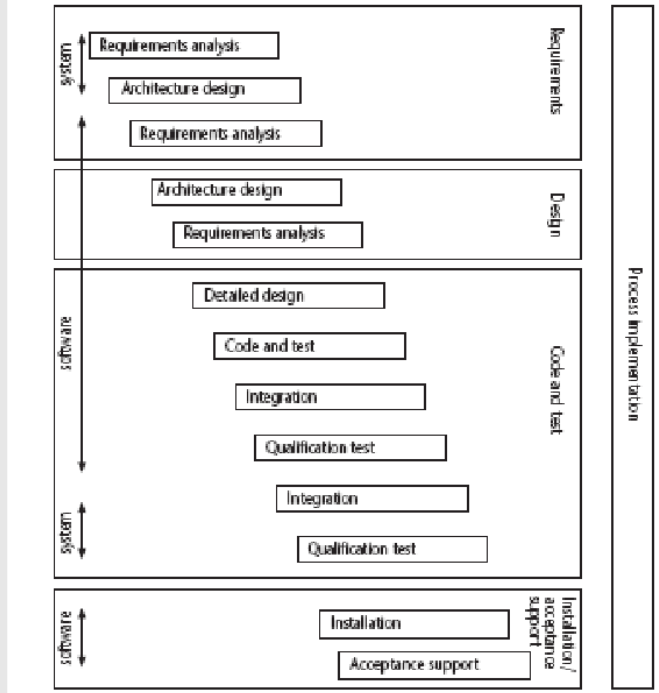

Figure 1.3 The ISO 12207 software development life cycle

ISO 12207 life-cycle

Requirements analysis

- Requirements elicitation: what does the client need?
- Analysis: converting 'customer-facing' requirements into equivalents that developers can understand
- Requirements will cover
  - Functions
  - Quality
  - Resource constraints i.e. costs

ISO 12207 life-cycle

- Architecture design
  - Based on *system requirements*
  - Defines components of system: hardware, software, organizational
  - *Software requirements* will come out of this
- Code and test
  - Of individual components
- Integration
  - Putting the components together

ISO12207 continued

- Qualification testing
  - Testing the *system* (not just the *software*)
- Installation
  - The process of making the system operational
  - Includes setting up standing data, setting system parameters, installing on operational hardware platforms, user training etc
- Acceptance support
  - Including maintenance and enhancement

Some ways of categorizing projects

Distinguishing different types of project is important as different types of task need different project approaches e.g.

- Information systems versus embedded systems
- Objective-based versus product-based

Applications

- ProjectPier is a free, open source, self-hosted PHP application for managing tasks, projects and teams through an intuitive web interface. ProjectPier will help your organization communicate, collaborate and get things done. It functions similar to commercial groupware/project management products, but allows for the freedom and scalability of self-hosting. Even better, it will always be free. I have this installed on my server and it's very similar to Basecamp, which is one of the most popular project management apps out there.
- Collabtive is a simple to use CMS to help you manage your projects, milestones, task-lists, tasks. It also supports Basecamp integration, time tracking and multiple languages.

Scope of Research

Checklist – Research Project Management: Principles

- When managing research projects, the following principles should be observed in both the research proposal and in the final report:

Website link :

http://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/published_docs/brochures_and_info_sheets/Training_Research_Checklist.pdf