Chapter 1 : Introduction to software project management

A feasibility study aims to objectively and rationally **uncover the strengths and weaknesses** of an existing business or proposed venture, opportunities and threats present in the natural environment, **the resources required to carry through**, and ultimately the prospects for success.

Software Project vs Other Types of Project

Many techniques of general project management also apply to Software Project Management. Fred Brooks identified some characteristics of software projects which make them particularly difficult.

- Invisibility
- Complexity
- Comformity
- Flexibility

Questions 1 :List the problems you experienced when you carried out a recent ICI-related assignment. Try to put these problems into some order of magnitude.

Answer:

- Problem understanding
- Domain knowledge
- **Lack of clear requirements:** This can lead to misunderstandings and miscommunication between team members, leading to rework and delays. Better planning and requirements gathering can help prevent this.
- **Quality issues**: Poorly designed or tested software can lead to quality issues, such as bugs or security vulnerabilities. Better quality assurance and testing processes can help prevent this
- **Schedule overruns:** Software development projects often experience schedule overruns due to unanticipated problems, such as changes in requirements, technical challenges, or resource constraints. **Better project management and scheduling can help prevent this.**
- **Budget constrain** : Similar to schedule overruns, cost overruns can occur due to unanticipated problems and changes in the project. Better budget planning and financial management can help prevent this.

For each problem consider whether there was some way in which the problem could have been reduced by better organization and planning by you.

These are just some of the problems that can occur during software development projects, and the severity of each problem can vary depending on the size and complexity of the project. However, better planning and organization can greatly r**educe the risk and impact of these problems.**

Question 2 : Identify the main types of personnel employed in an information systems department. For each stage of a typical IS development project, list the types of personnel who are likely to be involved.

Answer :

The main types of personnel employed in an Information Systems (IS) department include:

- **Project Managers:** responsible for leading and coordinating software development projects, including setting goals, schedules, and budgets.
- **Systems Analysts:** responsible for defining and analyzing the requirements for software systems.
- **Business Analysts:** responsible for understanding the organization's business processes and identifying opportunities for using technology to improve them.
- **Developers:** responsible for designing, coding, and testing software systems.
- **Database Administrators:** responsible for managing and maintaining databases and ensuring their performance and security.
- **Network Administrators:** responsible for managing and maintaining the organization's computer networks and ensuring their performance and security.

For each stage of a typical IS development project, the following personnel are likely to be involved:

- **Requirements Gathering:** Systems Analysts, Business Analysts, Project Managers, and stakeholders.
- **Design:** Systems Analysts, Developers, Database Administrators, and Project Managers.
- **Development:** Developers, Database Administrators, Network Administrators, and Project Managers.
- **Testing:** Developers, Systems Analysts, and Quality Assurance personnel.
- **Deployment:** Developers, Network Administrators, and Project Managers.

- **Maintenance:** Developers, Systems Analysts, and Project Managers.

The exact personnel involved in each stage of an IS development project will vary depending on the size and complexity of the project, as well as the organization's specific IS department structure.

Question 3 : A public library is considering the implementation of a computer-based system to help administer book loans at libraries. Identify the stakeholder in such a project. What might be the objectives of such a project and how might the success of the project be measured in practical terms?

Answer :

Stakeholders in a computer-based library loan administration system project can include:

- **Library staff:** who will be using the system on a daily basis and will need it to be user-friendly and efficient.
- **Library patrons:** who will be borrowing books and using the system to check the availability of books and reserve loans.
- **Library management:** who will be responsible for implementing and maintaining the system and ensuring that it meets the needs of the library and its patrons.
- **Library board of directors:** who will be responsible for making decisions about the budget and funding for the project.
- **IT department:** who will be responsible for the technical aspects of the project, including installation, configuration, and maintenance of the system.

The objectives of a computer-based library loan administration system can include:

- **Improving the efficiency of the loan process:** by automating the loan and return process, reducing the time and effort required for staff and patrons.
- **Increasing the accuracy of loan information:** by providing a centralized database for tracking loans and ensuring that loan information is accurate and up-to-date.
- **Improving patron access to library materials**: by allowing patrons to check the availability of books and reserve loans online, making it easier for them to find and borrow materials.
- **Improve the scalability of patrons**
- **Providing better data management and analysis**: by collecting and storing data about loans, the system can provide valuable insights into library usage and help library management make informed decisions.

The success of the project can be measured in practical terms by:

- **Time savings:** for both staff and patrons, as the loan process becomes more efficient.
- **User or patron satisfaction**
- Accuracy of data
- Adoption rate
- Review Internal Growth and Team Satisfaction
- Analyze the project budget
- Review the project scope.
- Evaluate the project Specification.

Questions 4: A software house has developed a customized order processing system for a client.You are an employee of the software house that has been asked to organize a training course for the end-users of the system. At present, a user handbook has been produced,but no specific training material. A plan is now needed for the project which will setup the delivery of the training courses. The project can be assumed to have been completed when the first training course starts. Among the things that will neecl to be considered are the following:

1. training materials will need to be designed and created;

2. a timetable will need to be drafted and agreed;

3. date(s) for the course will need to be arranged;

4. the people attending the course will need to be identified and notified;

5. rooms and computer facilities for the course will need to be provided.

Question:

A. Identify the main stackholders for this project.

B. Draw up objectives for this project.

C. For the objectives, identify the measures of effectiveness.

D. For each objective, write down sub-objectives or goals and the stackholclers who will be responsible for their achievement.

Answer :

A. Main stakeholders for this project:

- The software house: who will be responsible for delivering the training and ensuring that it meets the needs of the client.
- The end-users of the system: who will be attending the training and will benefit from the knowledge gained during the course.
- The client: who has commissioned the development of the order processing system and will expect the training to be of a high quality and to meet their needs.

B. Objectives for this project:

- To design and create training materials that are effective and relevant to the end-users of the system.
- To schedule and deliver a training course that meets the needs of the end-users.

- To ensure that the training is well attended and that the end-users have a positive experience.

C. Measures of effectiveness for the objectives:

- Feedback from the end-users about the quality and relevance of the training materials.
- Attendance at the training course.
- Feedback from the end-users about the quality and effectiveness of the training.

D. Sub-objectives or goals and stakeholders responsible for their achievement:

- To design and create training materials: This goal is the responsibility of the software house.
- To draft and agree on a timetable: This goal is the responsibility of the software house in collaboration with the end-users and the client.
- To arrange the date(s) for the course: This goal is the responsibility of the software house in collaboration with the end-users and the client.
- To identify and notify the people attending the course: This goal is the responsibility of the software house in collaboration with the end-users and the client.
- To provide rooms and computer facilities for the course: This goal is the responsibility of the software house in collaboration with the end-users and the client.

Questions 5: ***A manager is in charge of a sub-project of a larger project. The sub-project requires the transfer of paper documents into a computer-based document retrieval system and their subsequent indexing so that they can be accessed via keywords. Optical character readers are to be used for the initial transfer but the text then needs to be clerically checked and corrected by staff. The project is currently scheduled to take 12 months using permanent staff. A small budget is available to hire temporary staff in the case of staff absences through holidays, sickness, or temporary transfer to other, more urgent, jobs. Discuss the control system that will need to be in place to control that sub-project.***

Answer:

To control the sub-project, the following control system should be in place:

- **Schedule control:** A detailed project schedule should be developed with milestones and deadlines, and a method to track progress against the schedule should be established.
- **Resource control:** The availability of permanent staff and budget for temporary staff should be monitored to ensure sufficient resources are available to complete the project on time.
- **Quality control:** A process for verifying the accuracy of the data transfer and indexing should be established and staff training should be provided to ensure quality control.
- **Change control:** A process for managing changes to the scope, schedule, and resources of the project should be established to minimize the impact on the project timeline.
- **Risk management:** A risk management plan should be developed to identify and mitigate potential risks that may impact the project timeline, quality, and budget.
- **Performance measurement:** Key performance indicators (KPIs) should be established to monitor the progress of the project and measure the effectiveness of the control system.

The main stakeholders for the control system are the project manager, the sub-project team, and the client. The project manager is responsible for implementing the control system and ensuring that the sub-project is completed on time, within budget, and to the required quality. The sub-project team is responsible for executing the work and following the control system procedures. The client is responsible for providing feedback and accepting the deliverables.

Questions 6: The idea behind the project is that students should be able to access details of available placements via an intranet. When there is a placement opportunity for which they wish to be considered, they would be able to apply for it electronically, This would cause a copy of their CV, which would also be held online, to be sent to the potential employer. Details of interviews and placement offers would all be sent by e-mail. While some human intervention would be needed, the process would be automated as far as possible. You are required to produce a business case report for such an application, which justifies the potential development by showing that the value of its potential benefits outweighs its development and operational costs. Create lists of the main benefits and costs for the project. Youdo not have to specify actual figures, just the headings under which they would appear.

Benefits:

- Increased efficiency and convenience in placement application process for students.
- Accessibility of placement information and CV to potential employers 24/7.
- Reduction in paper-based documentation and manual data entry.
- Improved communication and organization in the placement process through electronic notifications and updates.
- Increased transparency and accountability in the placement process.
- Potential for cost savings in terms of printing, postage and administrative time.

Costs:

- Initial development costs for the application and its infrastructure.
- Ongoing operational costs for maintenance and updates.
- Training costs for students and staff to effectively use the application.
- Potential additional hardware and software expenses.
- Potential costs for data security measures to protect sensitive information.
- Potential costs for integration with existing systems and processes.