CSE4708: Software Project Management

Unit I : Introduction to Software Project Management (SPM)

Topic : Categorizing SPs,
Introduction, selecting a project, identifying project scope and objectives, identifying project infrastructure, analyzing project characteristics, identifying project products and activities, estimate efforts each activity, identifying activity risk, allocate resources, review/ publicize plan.

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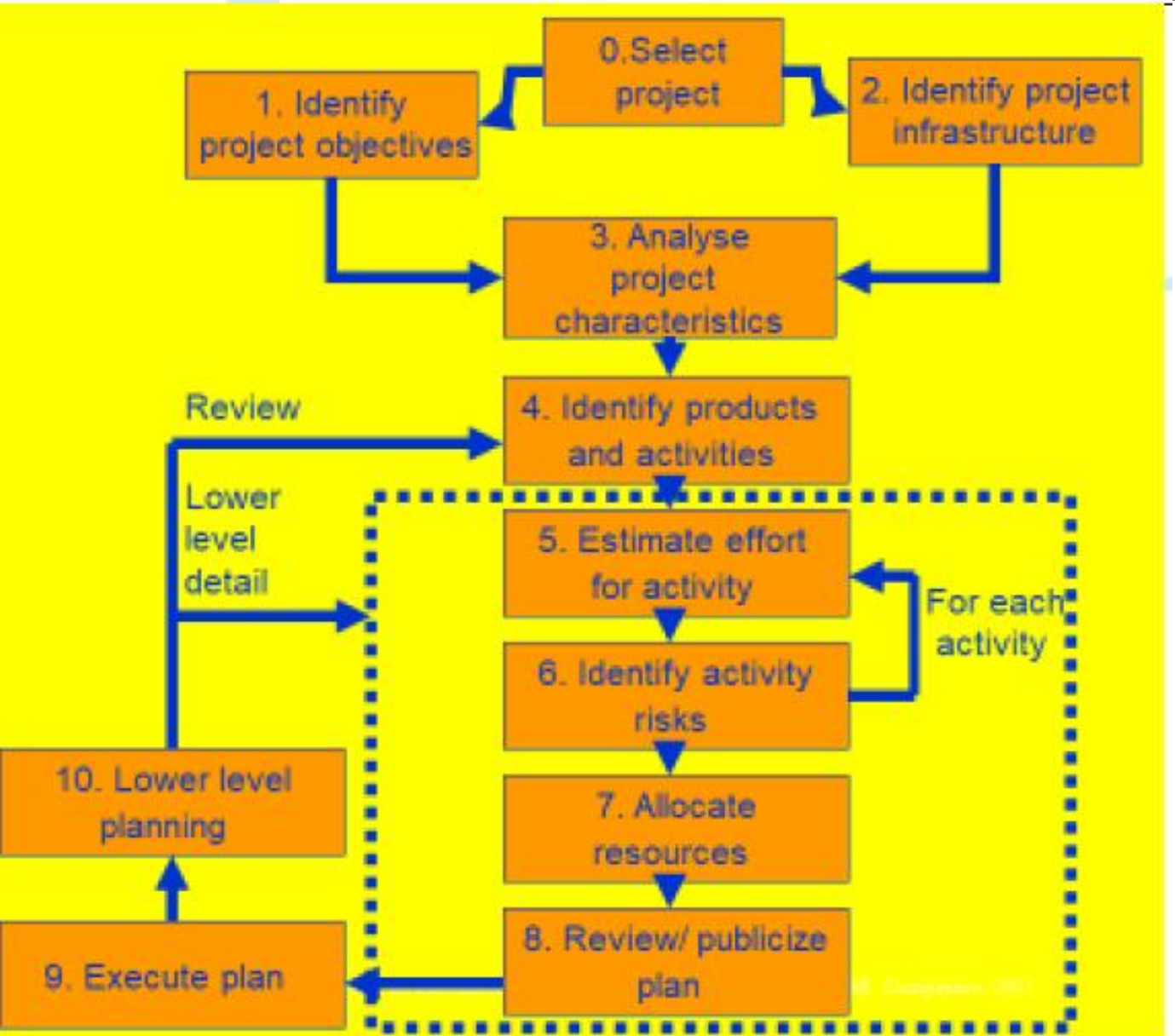
Categorizing Software Projects

- Compulsory Vs. Voluntary Projects
- Information Systems Vs. Embedded Systems Projects
- Outsourced Projects
- Objective Driven Projects

Software Projects – Stepwise execution



Software Projects – Stepwise execution

This is an overview of the main steps:

- **0. Select project :** There must be some process by which the project to be executed is to be selected. Deciding whether the project can be taken up or not .Technical, Organizational and Financial Feasibility is considered.

Software Projects – Stepwise execution

- **1. Identify project scope and objectives** It is important that at the outset the main stakeholders are all aware of the precise objectives of the project.
  - Step 1.1 Identify objectives and practical measures of the effectiveness in meeting those objectives
  - Step 1.2 Establish a project authority . To ensure the unity of purpose among all persons concerned .
  - Step 1.3 Identify all stakeholders in the project and their interests
  - Step 1.4 Modify objectives in the light of stakeholder analysis
  - Step 1.5 Establish methods of communication between all parties

Software Projects – Stepwise execution

- **2. Identify project infrastructure** This may not be a significant step when working on an in-house project in a very familiar environment. However, where the project is being carried out for external clients then you may need to investigate the characteristics of the environment in which the project is to be carried out.
  - Step 2.1 Identify relationship between the project and strategic planning
  - To determine the order of related projects (in the organization) being carried out .
  - To establish a framework within which the system fits .
  - To ensure the hardware and software standards are followed .
  - Step 2.2 Identify installation standards and procedures
  - more appropriate name: “Identify standards and procedures related to the software project”
  - Step 2.3 Identify project team organization

Software Projects – Stepwise execution

- **3. Analyse project characteristics** Different types of project will need different technical and management approaches. For example, a project to implement control software embedded in industrial equipment will need a different set of methods than a project to implement a business information system. A multimedia application would again need a different set of activities. (This is not to say that there could not be considerable overlaps in the approaches).
  - Step 3.1 Distinguish the project as either objective-driven or product-driven
  - Step 3.2 Analyse other project characteristics
  - Step 3.3 Identify high level project risks
  - Step 3.4 Take into account user requirements concerning implementation.
  - Step 3.5 Select general lifecycle approach in the light of the above

Software Projects – Stepwise execution

- Step 3.6 Review overall resource estimates Up to this stage,
- the major risks of the project are identified
- the overall approach of the project is decided

- **4. Identify products and activities** With software projects, it is best to start by listing the products, both deliverable and intermediate, to be created. The activities needed to create the products can then be identified
  - Step 4.1 Identify and describe project products
  - Identify all the products related to the project
  - Account for the required activities
  - Step 4.2 Document generic product flows

Software Projects – Stepwise execution

- To document the relative order of the products
- Step 4.3 Recognize product instances
- Step 4.4 Produce an ideal activity network
- Activity network shows the tasks that have to be carried out as well as their sequence of execution for the creation of a product from another
- Step 4.5 Modify the ideal to take into account need for stages and checkpoints
- To check compatibility of products of previous activities

Software Projects – Stepwise execution

- **5. Estimate effort for activity**.
- **6. Identify activity risks** Having assessed the amount of effort and the elapsed time for a project, the reasons why these might be vary during the actual execution of the project need to be considered. Where there is a very high risk of additional effort/time being needed then actions to reduce this risk may be formulated.
- **7. Allocate resources** With software projects, these resources will mainly be staff, but could be equipment etc.

Software Projects – Stepwise execution

- **8. Review/publicize** It is no good having a plan if no one knows about it
- **9. Execute Plan**
- **10. Lower level planning** Not all of a project, especially when it is large, can be planned in detail at the outset. Not all the information needed to plan the later stages will be available at the beginning: for example software development cannot be broken down into precise sub-tasks with realistic target times until more is known about what the overall design of the system is known

References

- Bob Hughes and Mike Cotterell, “Software Project Management ”, Tata McGraw Hill, 4th edition, 2006 .
- Software Project Management, Tutorialspoint. https://www.tutorialspoint.com/software_engineering/software_project_management.htm (accessed on 18th July 2020).