Software Project Management

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I. Project Evaluation and Project Planning :-

because when ever we talk about s/w, there are, you can say, a lot of challenges and complexities come that I will tell you one by one

What is SPM :- Software project Management is an art and science of planning and leading software projects. It is a part of project Management in which software projects are planned, implemented, monitored, and controlled. I mean to say that

in project mgmt we talk about how to plan the entire project and then executed. How to give the entire system successfully to the client. The whole thing comes under planning. SPM is a big term itself

Main Goal is to enable a group of developers to work effectively towards successful completion of project.

why this s/w mgmt topic has come up? It's main goal is how to build such a team, having such skilled people who can make my project successfully and deliver to the client. If the planning of all these thing, have to be done

If all these will properly be planned only then the execution will be done, coz there are so many projects

Project Manager is an administrative leader of the team - so the team we are talking about who has to work on the project and deliver it successfully - the one who will lead - that person is called the Project Manager. Now here, whenever we talk about projects, here we are talking about software. By the way, there can be many projects. There can be automobile projects and civil projects. There can be a lot of challenges in all those projects. But the s/w itself has a lot of challenges and due to this it becomes quite complicated. Some challenges

Various factors make this job very complex (e.g. Changeability, complexity, Uniqueness, possibility of multiple solutions etc.).

changeability in technology because technology is changing rapidly. So because of that, let's say you started working on a project. You want that project to come out in two or 3 months But let's say you take an extra month. Maybe after 2-3 months the technology has completely changed, and your project has become vain, which means it is of no use. So this is also a possibility. This I give you a simple real life example

Job responsibilities of Project Manager - (What is mgmt)

This involves the following activies.

- **Planning** - It is very important initially to plan all the things properly
- **Organizing** - - that arrange everything, whenever you talk about staff, resources, cost
- **Staffing** - what type of staff it is, technical staff, Non-technical staff or administrative staff, H - to deal with them
- **Directing** - You have to give proper instructions, proper direction to them, so that you keep walking on the right path.
- **Monitoring** - Proper monitoring, there is progress or not. It is very important to monitor - that thing properly.
- **Controlling** - somewhere b/w the project a lot of small failures can also come. Setbacks may have come, leaps may have come, How do you deal with them & control them
- **Innovating** - Bringing a new thing it should not be that you are working on an old thing and you have developed the old thing. There will be no benefit. Now it is important
- **Representing** - You are properly representing the things to the client or the users - that how will our project work and what actually you will deliver them.

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Skills required for Project Manager:

- Managerial skills
- Technical skills
- Problem Solving skills
- Coping skills
- Conceptual skills
- Leadership skills
- Communication skills

Project planning:

- Estimation (cost, Duration, Effort)
- Staffing (staff organization, staff plans)
- Scheduling manpower & other resources
- Risk management
- Miscellaneous Plans (quality assurance plan, Configuration, Installation plans)

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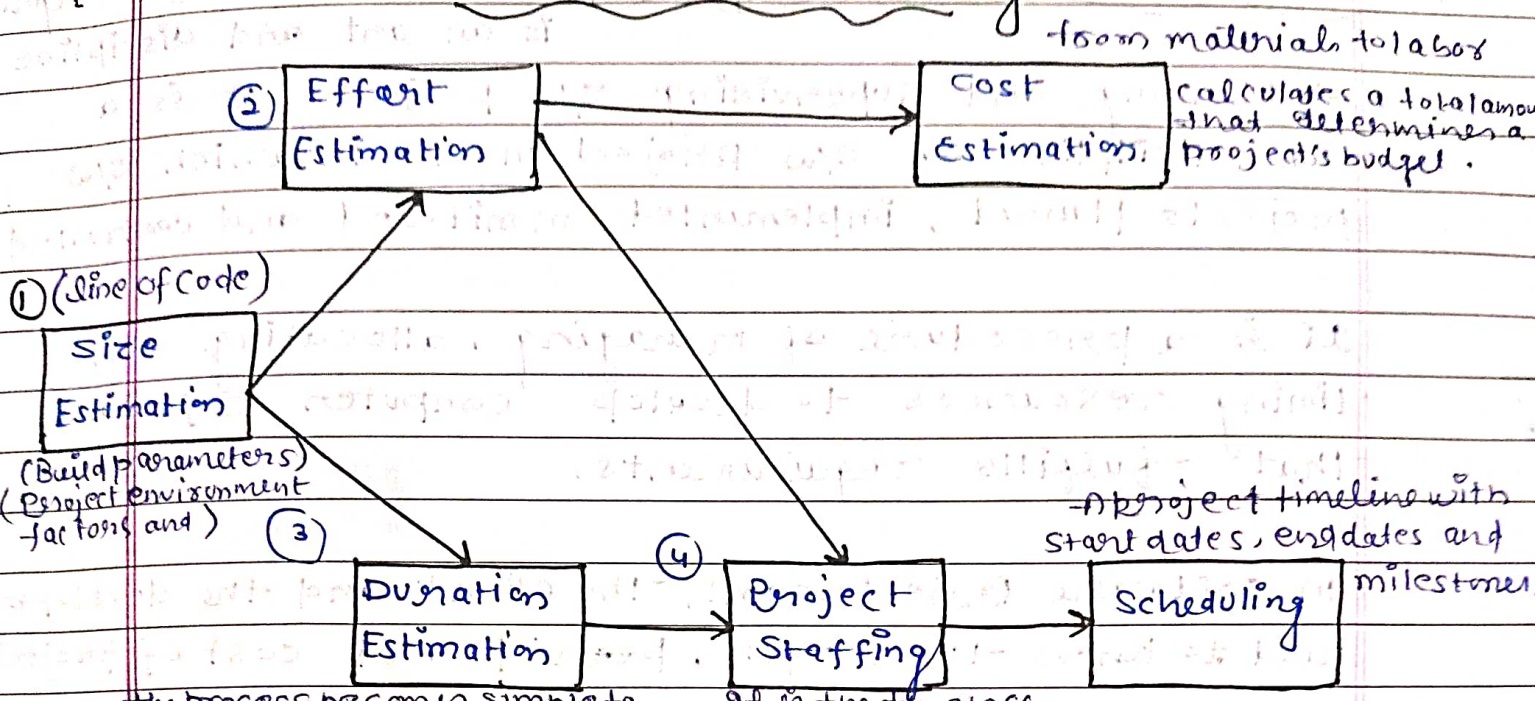
Precedence Ordering



Importance of SPM:- SPM is a sub-discipline of Project mgmt in which S/w projects are planned, implemented, monitored and controlled.

⊙ Project mgmt:- It is the practice of initiating, planning, executing, controlling and closing the work of a team to achieve specific goals and meet specific success criteria at the specific time.

⊙ The primary challenge of project mgmt is to achieve all of the project goals within the given constraints.

Why is it important to become familier with project mgmt

→ First there is a question of money. A lot of money is at stak with ICT projects.

→ Secondly, there the projects are not always successful. Studi show that only one-third of S/w projects were proved to be successful.

⊙ The reason of these project shortcomings is most of te the mgmt of S/w projects.

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Software Project Management:- Software project mgmt is an art and discipline of planning and supervising s/w projects. It is a sub-discipline of s/w project mgmt in which s/w projects planned, implemented, monitored and controlled.

It is a procedure of managing, allocating and timing resources to develop computer software that fulfills requirements.

In software Project mgmt, the client and the developer need to know the length, peeriod and cost of project.

Project:- A project is a group of tasks that need to complete to reach a clear results. A project also defines as a set of inputs and outputs which are require to achieve a goal. Projects can vary from simple to difficult and can be operated by one person or a hundred.

Prerequisite of s/w project mgmt:- There are 3 needs for s/w project management. These are:

1. Time
2. Cost
3. Quality

It is an essential part of Software organization to deliver a quality product, keeping the cost within the client?

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Project Manager :- A project manager is a character who has the overall responsibility for the planning, design, execution, monitoring, controlling and closure of a project. A project manager represents an essential role in the achievment of the projects.

A project manager is a character who is responsible for giving decisions both large and small projects. The project manager is used to manage the risk and minimize uncertainty. Every decision the project manager makes must directly profit their project.

Role of Project Manager:-

(1) **Leader :-** A project manager must lead his team and should provide them direction to make them understand what is expected from all of them.

(2) **Medium :-** The project manager is a medium between his clients and his team.

(3) **Mentor :-** He should be there to guide his team at each step and make sure that the team has an attachment. He provides a recommendation to his team and points them in the right direction.

Responsibilities of a Project Manager :-

(1) Managing risks and issues.
(2) Create the project team and assigns tasks to several team members.

③ Activity planning and sequencing.
④ Monitoring and reporting progress.
⑤ Modifies the project plan to deal with the situation.

Importance of Software Project Management:-

① Collaboration:- When managing a large project, each member is assigned an individual task in the team.

② Schedulling and planning:- Without a system in place, it can be difficult for your team to stay within schedule bcoz of the lack of a set guideline on what should be accomplished by who and when.

③ Resource Management:

④ Budget Management:

⑤ Documentation:-

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Activities: SPM consists of many activities, that includes planning of the project, deciding the scope of product, estimation of cost in different terms, scheduling of tasks etc.

The list of activities are as follows:

1. **Project Planning and Tracking:** It is a set of multiple processes, or we can say that it a task that performed before the construction of the product starts.

2. **Scope Management:** It describes the scope of the project. Scope mgmt is important because it clearly defines what would not. SM create the project to contain restricted and quantitative tasks.
   - Define the scope
   - Decide its verification and control
   - verify the scope
   - Control the scope by incorporating changes to the scope.

3. **Estimation Mgmt:** This is not only about cost estimation because whenever we start to develop S/w, but we also figure out their size (line of code) effort, time as well as cost.

- Size:
- Effort:-
- Time:-
- ~~Size of Software~~ Cost: Estimation:
  - Size of S/w, Quality, Hardware, Communication
  - Trainning, Additional S/w and tools, Skilled manpower

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(4) Scheduling Mgmt:- Scheduling mgmt is s/w refers to all the activities to complete in the specified order and within time slotted to each activity.

- Find out multiple tasks and correlate them.
- Divide time into units.
- Assign the respective no. of work-units for every job.
- Calculate the total time from start to finish.
- Breakdown the project into modules.

(5) Project Resource Mgmt:- All the elements are referred to as resources for the projects. It can be a human resource, productive tools, and libraries.

It includes :-

- Create a project team and assign responsibilities to every team members
- Developing a resource plan is derived from the project plan.
- Adjustment of resources.

(6) Project Risk Management:- It consists of all the activities like identification, analyzing and preparing the plan for predictable and unpredictable risk in the project.

- The experienced team leaves the project, and the new team joins it.
- Changes in requirement
- change in technologies and the environment.
- Market competition.

(7) Project Communication Mgmt:- Communication is an essential factor in the success of the project. It is a bridge b/w client, organization, team members and as well as other stakeholders of.

the project such as hardware supplies. from the plannings to closure communication plays a vital role. on all the phases, communication must be clear and understood. miscommunication can create a big blunder in the project.

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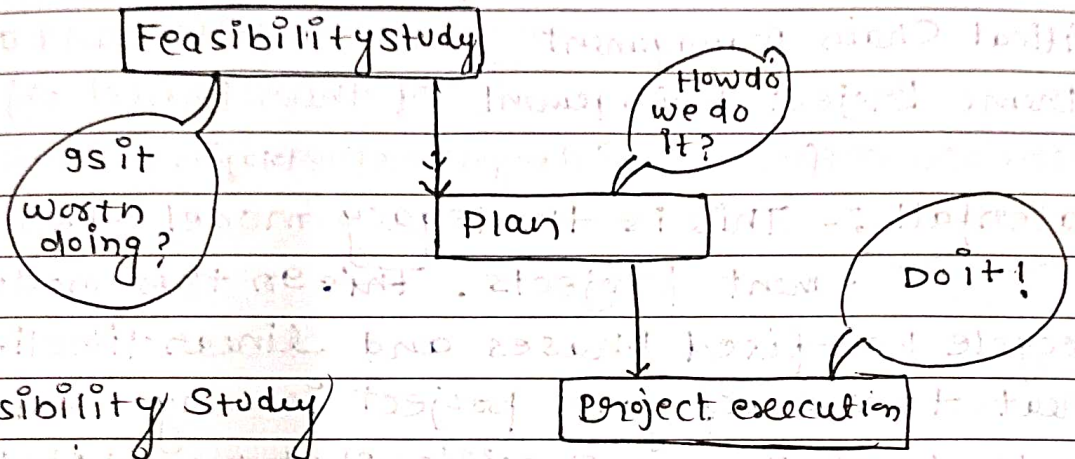
Activities covered by SPM:



1. Feasibility Study
2. Planning
3. Project execution

Methodologies:

1. Adoptive Project framework.
2. Agile S/w development
3. Crystal methods
4. Dynamic Systems development Model (DSDM)
5. Extreme Programing (XP)
6. Feature Driven Development (FDD)
7. IT Infrastructure Library (ITIL)
8. Joint Application Development (JAD)
9. Lean Development (LD)
10. PRINCE2
11. Rapid Application Development (RAD)
12. Rational Unified Process (RUP)
13. Scrum
14. Spiral
15. System development life cycle (SDLC)
16. waterfall (Traditional)

"Method refers to a single action, tool, technique, process, or way of doing something."

Methodologies:- A methodologies is a body of methods, rules, and postulates employed by a discipline; a particular procedure or set of procedures."

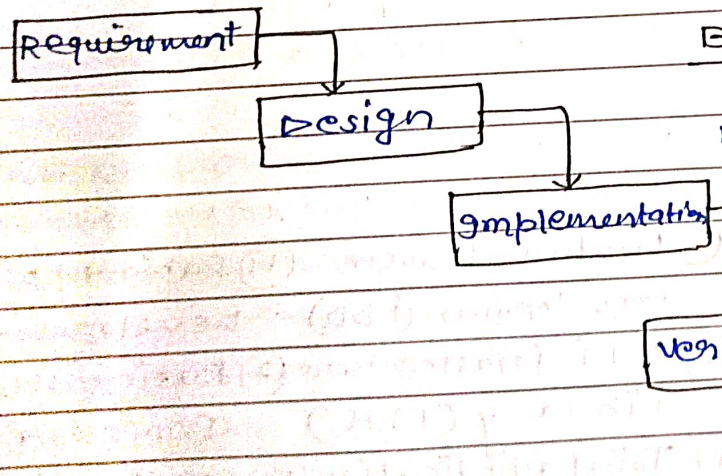
"A methodology is a model which project managers employ for the design, planning, implementation and achievment of their project objectives."

There are different Project mgmt methodologies to benefit different Project

1. Waterfall
2. Agile
3. Prince2
4. Hybrid Project Management
5. Critical Path
6. Critical Chain Management
7. Extreme Project Management

(1) **Waterfall**:- This is the legacy model for S/w development projects. This on this model, development lifecycle has fixed phases and linear timelines. It's great to use if your project is very complicated or needs to follow a specific step by step process. On the negative side, it can be a very rigid methodologies and in all honesty it's not really suitable for fast moving or iterative projects.

(2)



Best for:. Construction, Manufacturing, and media production.

Resources:- Understanding the pros and cons of the waterfall model of S/w development

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② Agile:- Agile is the antithesis of waterfall methodology. Agile S/w development methodology is for a project that needs extreme agility in requirements. The key features of agile are its short-termed delivery cycles (sprints), agile requirements, dynamic team culture, less restrictive project control and emphasis on real-time communication.

Best for → S/w development

Tools to use → jira, Agile manager, Planning Poker

Resources → Scaled Agile framework, Manifesto for Agile development, Agile Glossary.

③ Prince2 :- Prince2 takes a process-based approach to project management. This methodology is based on eight-high level processes.

Prince2 is a project mgmt that enforces the need to split project accountability b/w a board and a project manager.

PRINCE2 :- Stands for Projects in Controlled Environments 2 and it's a structured Project Management methodology.

It came out of the UK government and has spread around the world. It consists of 6 tolerances, 7 principles, 7 themes and 7 processes. It also prescribed 26 mgmt products that should be created.

It's used extensively in public sector projects, it's advised not to use it on smaller projects and it's very prescriptive nature means it's unlikely to work well in fast moving project environments.

Best for → construction and architecture, maketing. but works for other industries too.

Tools to use :. Microsoft Project, in STEP BLUE, P2ware

Resources :. PRINCE 2 certification information

Key Benefits of PRINCE 2

Managing successful projects with PRINCE 2

(4) Hybrid Project Management :. A combination of methodologies. It means you get the best of both worlds without the downside of either. If the team is unfamiliar with one or other of the methodologies being hybridised. Of course using more than one methodology at the same time is risky so it is advised to use it with caution.

Chain Mgmt :-

(5) Critical Path :. Focuses on the resources that you'll need to complete a project. It encompasses equipment, people and space. The aim is to keep everything balanced and be flexible with start dates, it builds buffer time around those activities and it's been created with delivering projects 10-50% faster than traditional methods. Best for → Manufacturing, construction Tools to use → Aurora CCPM, A-data, Prochain

Resource Critical Chain mgmt Theory and Practice, by Roystrat

(6) CPM : As it's a less technical methodology it can be used pretty much anywhere that runs projects. The CPM can be used to establish the priority of a project's activities, reassign team roles, evaluate risks, and distribute resources accordingly.

Critical Path mgmt :

- A list of the tasks that need to be completed.
- The duration of each task.
- The dependencies b/w activities.
- The endpoint of a task.

A critical path refers to a sequence of critical activities (dependent or floating) in a project that determines the longest succession of tasks that have to be completed on time in order for the project to meet the dealine.

Best for → Manufacturing, Science, Construction and architecture, engineering, but can be adopted to other industries as w

Tools to use → Lucid chart, Microsoft Project, Smartsheet

Resources → what is a Critical Path in Project Mgmt

Critical Path method (CPM) ⇒ Instructional vide

(7) Extreme Project Mgmt:- It's related to Extreme Programming and is used on Projects where there is a high level of unpredic-tability, where there needs to be huge amounts of flexibility or when a lot of stakeholder engag-ment is required.

Says Doug Decarlo, Author of extreme Project mgmt;- Using Leadership, Principles and tools to deliver value in the face of volatility. Doug also states that, "It is applied in complex project environments such

- Failure is not an option
- Speed, innovation, and profitability count
- Quality of life is important

Best for → Software development

Resources → extreme Project Management;- Using Leadership, Principles, and Tools to deliver value in the face of volatility, by Douglas Decarlo

XPM - from Idea to realization.

Conclusion: Seleting the most suitable project mgmt methodology could be a tricky task. Each project mgmt methodology carries it own strengths and weaknesses. Therefore, there is no good or bad methodology and what you should follow is the most suitable one for your project mgmt requirement.

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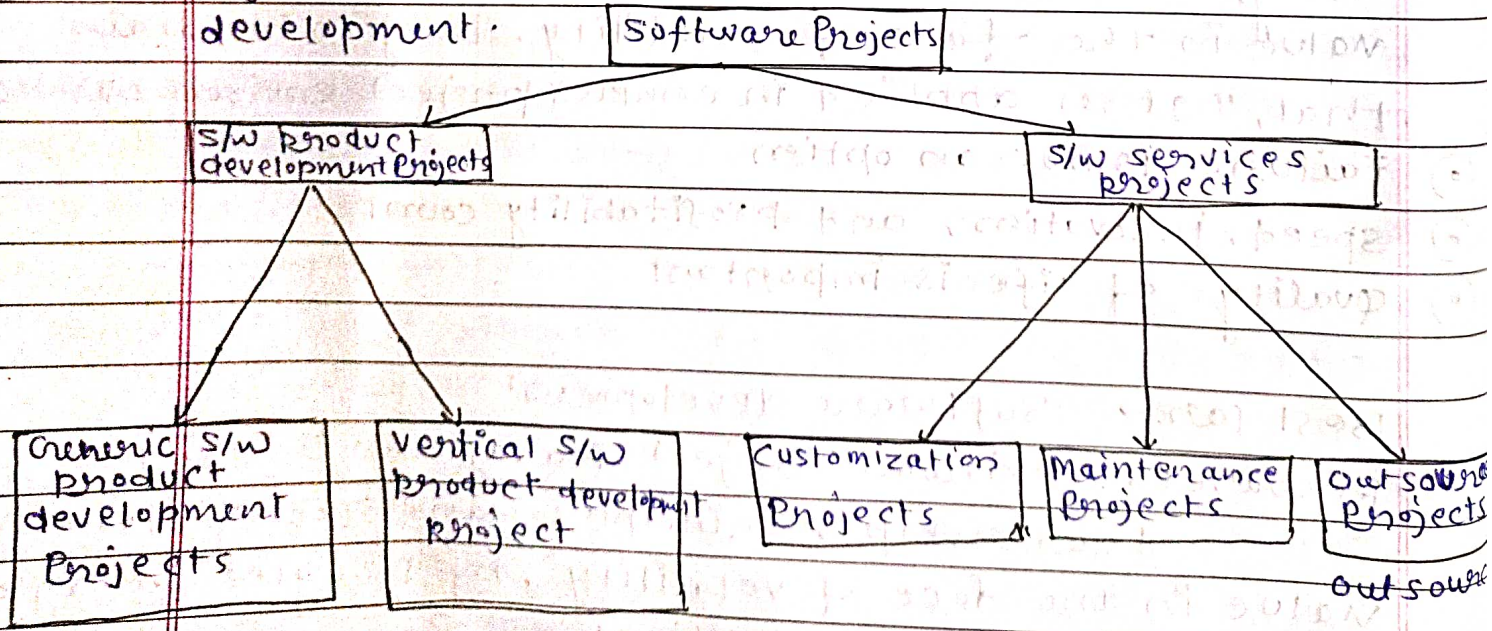
Catogerization of Software Projects:-

⊙ Different characteristics of a project could affect the way in which it should be planned and managed.

Some of the thesis are:-

→ Compulsory vs volantary users
→ Information systems vs embedded systems.
→ Software products vs Software services.
→ Objectives driven development vs product driven development.



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(1) Software Product Development:- The primary role of the software development life cycle is to deliver a high quality and functional product that meets s/w quality standards and your unique business goals. The process of creating a s/w product helps build quality s/w and track progress at every short iteration.

"SPD is a repetitive logical process that aims to builds a prgramned s/w product to make a unique personal or business goal, process, or objectives. It is mostly a planned strategy that comprises various stages or steps that result in the creation of an operational s/w product.

(a) Generic s/w product development Projects:- Generic s/w development is a process executed by the developers that develope the s/w projects. The type of project under this development are product s/w projects. Usually, this product is made for all types of business needs which has a positive demand in the market over a duration of time. s/w development companies develop generic s/w on their own and handled it to a group of costemers having a similar needs.

(b) Vertical s/w product development Projects:- In the vertical development approach, you look at the user stories and implement the minimum necessary in each one of the layers and components to achieve the goal.

Most popular PM apps currently on the market include.

- Trello
- Asana
- Clickup
- Wrike
- Paymo
- JIRA
- Basecamp
- Teamwork PM.

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UI 30%
Application 25%
Domain 15%
Infrastructure 10%

X Setting Objectives :- Effective objectives in project management are specific. A specific objective increases the chances of leading to a specific outcome.

(2) Software Service projects :- A S/w project is the complete procedure of S/w development from requirement gathering to testing and maintenance, carried out according to the execution methodologies, in a specified period of time to achieve intended S/w product.

(a) Customized projects :- Project customization is the process of tailoring the overall project delivery process to meet the requirements of a capital project based on its specific scope and complexity.

(b) Maintenance Projects :- S/w maintenance refers to the process of modifying and updating a S/w system after it has been delivered to the customer. This can include fixing bugs, adding new features, improving performance, or updating the software to work with new h/w or S/w system.

The goal of S/w maintenance is to keep the S/w system working correctly, efficiently, and securely and to ensure that it continues to meet the needs of the users.

There are several key aspects of S/w maintenance, including:-

1. Bug fixing
2. Performance optimizations
3. Enhancements
4. Porting and migration
5. Re-engineering
6. Documentation.

(c) Outsourced project:- An outsourced project is a "goal oriented undertaking of multiple tasks, often interdependent in nature, increasingly involving multiple parties, including customer, principle supplier, supply-chain partners (subcontractors) and other third parties to develop or provide, products, services or solutions within a given period of time. An outscored project is typically made up of 3 main "ingredients".

- The client
- The contracter
- The contract

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Setting objective:- Effective objectives in project mgmt are specific. A specific objective increases the chances of leading to a specific outcome. Therefore, objectives shouldn't be vague, such as "to improve customer relations." because they are not measurable.

Objective should show how successful a project has been.

while there may be one major project objective, in pursuing it there may be interim project objectives. In lots of instance, project teams are tasked with achieving a series of objectives. If there were to proceed in any other manner, they may not be able to develop the skills or insights along the way that will enable them to progress in a productive manner.

Objectives can often be set under three headings:-

(1) Performance and Quality:- The end result of a project must fit the purpose for which it was intended. At one time, quality was seen as the responsibility of the quality control department. In more recent years the concept of TQM has come to the fore, with responsibility for quality shared by all staff from top management downwards.

(2) Budget:- The project must be completed without exceeding the authorised expenditure. Financial sources are not always inexhaustible and a project might be abandoned together if funds run out before completion. If that was to happen, the money and effort invested in the project would be forfeited and written off. In extreme cases the project contractor could face ruin. There are so many projects contractor could face ruin. There are many

projects where there is no direct profit motive, however it is still important to pay proper attention to cost budgets, and financial mgmt remains essential.

(3) Time to completion:- Actual progress has to match or beat planned progress. All significant stages of the project must take place no later than their specified dates, to result in total completion on or before the planned finish date. The time scale objective is extremely important because late completion of a project is not very likely to please the project purchaser or the sensors.

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Management Principles:-

(1) Vision and Mission:- Every project or initiative should begin with the end in mind.
Creating ~~a vision~~ vision and mission for the project helps clarify the expected outcome, or desired state, and how it will be accomplished.

(2) Business objectives:- The next step is to establish two or three goals or objectives for the project. Is it being implemented to increase sales and profit, customer loyality, employee productivity and morale, or product/

service quality? Also, it's important to specifically quantify the amount of improvement that is expected, instead of being vague.

(3) **Standard of Engagement:** This means putting in place the rules to be followed during the project implementation. for ex:- who are the members of the project team? what will be the frequency of meeting? who is the project owner? what are the meeting ground rules? This goes alone with any other meeting protocol that needs to be clarified.

(4) **Intervention and Execution Strategy:** Once the best possible intervention has been identified to resolve the issue then we must map out our execution strategy for implementing the intervention. This includes identifying who will do what, when, how and why? There are many quality mgmt concepts that can be applied ranging from a comprehensive "root cause analysis to simply "asking why five times."

(5) **Organisational Alignment:-** To achieve organisational alignment (or buy-in), going communication must be employed in person during team meetings, electronically via email and e-learning (if applicable), and through trainning.

(6) **Measurement and Accountability:** And last, how will we determine success? well, a simple project scorecard that is

visually interesting is a great way to keep everyone updated and engaged. A scorecard is an excellent resource for holding employees, teams, and leaders accountable for the implementation, refinement and sustainability of the new initiative or project.

Accountability means that consistently, top performers will be rewarded and recognised.

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Project portfolio Management:-

Project portfolio Management (PPM) is a mgmt process with the help of methods aimed at helping the organization to acquire information and sort out projects according to a set of criteria. This helps the organization to categorize the projects and align the projects with their organizational goals.

~~Why~~→ How do you→ A portfolio is a collection of projects, programs and processes that are managed together and optimized for the financial and strategic goals of an organization. A portfolio can be managed at either the functional or the organizational level.

Why→ PPM provides high levels of visibility both from a strategic and a tactical perspective. It provides insights into past project metrices such as project costs, profitability, duration, quality and resource usage.

Main 3 features of PPM:→

1. Project selection
2. Project Resources

(3) Project information

Objectives :- The need to create a descriptive document, which contains vital info. such as name of project, estimated timeframe, cost and business objectives.
Evaluation of the project on a regular basis to ensure that the project is meeting its target and stays in its course.
Selection of the team players, who will work towards achieving the project's objectives.
Method involved in PPM.

Advantages :- ⊙ Helps to concentrate on the strategies, which will help to achieve the targets rather than focusing on the project itself.

⊙ The responsibilities of IT are focused on part of the business rather than scattering across several.

⊙ Greater adaptability towards change.

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Estimation for a Better project :- There are different areas of a project that benefit from the use of project estimating.

(1) **cost :-** Cost is one of the 3 main constraints in project mgmt. If you don't have enough

money to complete the project, it will fail. Project cost management is process of estimating, budgeting and controlling costs throughout the project life cycle, with the objective of keeping expenditures within the approved budget. For a project to be considered a success, it's necessary that it delivers on the requirements and scope.

(2) Time :- Time is another of the 3 main project constrain Being able to estimate both the overall project duration and when individual tasks will take place is vital to project planning.

(3) Scope :- It is the third key project constraint. Project scope is all the work that must be done to finish the project or delivers a product. By estimating how much work is involved and exactly what tasks needs to occur, you can ensure that you have the right materials and expertise on the project.

(4) By estimating what risks could impact your project and how they will affect it. you are better able to plan for potential issues and create risk mgm plans.

(5) Resource mgmt helps you ensure you have all the resources you needs and are using them as efficiently as possible.

(6) Products that have to meet demanding quality

regulations, such as environmental restrictions, may require more money, time, and other resources than a product with lower-level requirements.

Cost-benefit evaluation technology:-

- It is one of the important and common ways of carrying out an "economic assessment" of a proposed information system.
- This is done by comparing the expected costs of development and operation of the system with its benefits.
- So it takes an account:
  - Expected cost of development of system
  - Expected cost of operation of system
  - Benefits obtained.
- Assessment is based on: whether the estimated costs are executed by the estimated income. And by other benefits.
- For achieving benefits where there are scarce resources, projects will be prioritized and resources are allocated effectively.
- The standard way of evaluating economic benefits of any project is done by **Cost Benefit Analysis.**

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- It comprises of two steps:-
  - ✓ Identifying and estimating all of the costs and benefits of carrying out the project.
  - ✓ Expressing these costs and benefits in common units.

- It includes :-
  - ✓ Development cost of the system.
  - ✓ operating cost of system.
  - ✓ Benefits obtained by system.

- When new system is developed by the proposed system, then new system should reflect the above three as same as proposed system.

- Examples :- Sales Order processing system which gives benefits due to use of new systems

Technologies involved are :-

- Net Profit :- The net profit of a project is the difference b/w the total costs and the total income over the life of the project. Having to wait for a return has the disadvantage that the investment must be funded for longer. Add to that the fact that, other things being equal, estimates in the more distant future are less reliable that short-term estimates and we can see that the 2 projects are not equally preferable.

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Return on investment:- The return on investment (ROI), also known as the accounting rate of return (ARR) provides a way of comparing the net profitability to the investment required.

There are some variations on the formula used to calculate the return on investment but a straight-forward common version is the main difficulty with NPV for deciding b/w projects is selecting an appropriate discount rate.

Internal rate of return:- one disadvantage of NPV as a measure of profitability is that, although it may be used to compare projects, it might not be directly comparable with earnings from other investments or the costs of borrowing capital. Such costs are usually quoted.

Risk evaluation:- Risk evaluation is meant to decide whether to proceed with the project or not, and whether the project is meeting its objectives.

Risk occurs:- when the project exceeds its original specification Deviations from achieving its objectives and so on.

Risk identification and ranking Risk and Net Present value for riskier projects could use

higher discount rates.
Ex: can add 2% for a safe project or 5% for a fairly risky one.

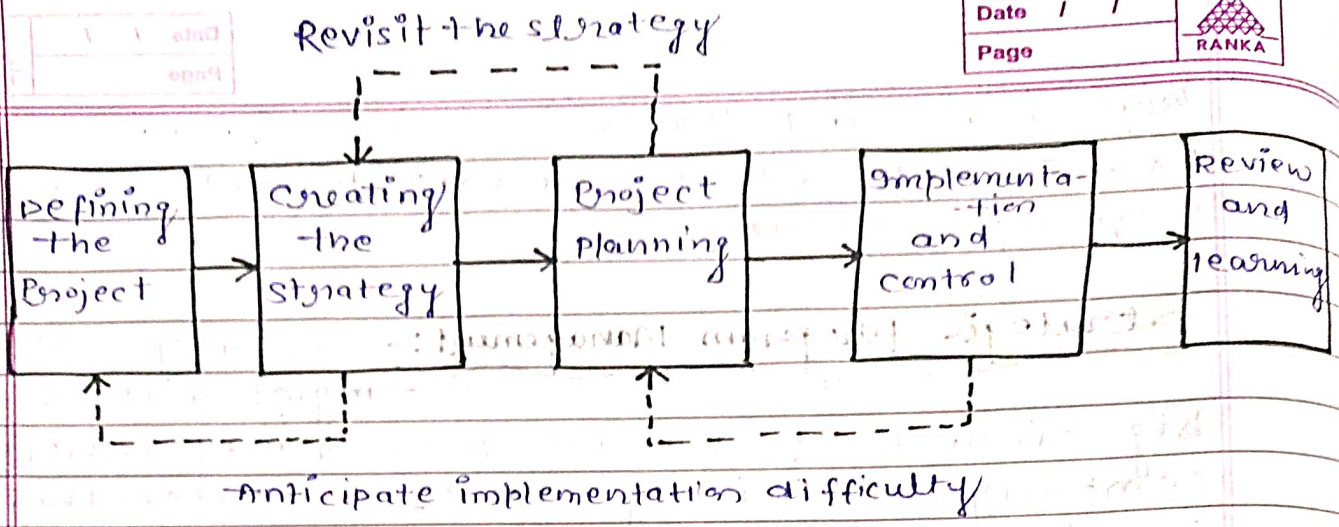
Strategic program Management:- Strategic project mgmt defines the big picture of how the project may benefit the company's efficiency and as a whole. This process combines business strategy and project mgmt methodologies and techniques to deliver organization breakthroughs.

Program mgmt is the centralized coordinated mgmt of a program to achieve the program's strategic benefits and objectives. This strengthens the alignment to organizational strategy and ensures better control and focus on benefits realization.

Project management involves the initiation planning and control of a range of tasks required to deliver the end product (which could be a physical product it could be new S/w, or just a new way of working.

These are 5 essential tasks of strategic Management.

They include developing a strategic vision and mission, setting objectives, crafting tactics to achieve those objectives, implementing and executing the tactics, and evaluating and measuring performance.



3 Roles of Strategic Management :- Existing functional departments retain prime responsibility for 3 other key processes necessary for successful strategy implementation:

1. Planning and budgeting
2. Human resource alignment
3. Knowledge Management

functions of Strategic Management : Strategic mgmt is the process of :- setting goals, procedures, and objectives in order to make a company or organization more competitive. Typically, strategic mgmt looks at effectively deploying staff and resources to achieve these goals.

Main Concept of strategic mgmt :- SM involves seeking and identifying opportunities and threats in the market and industry as well as the outside world in general. SM is based on the premise that "all businesses are not the same." SM involves assessing the strengths and weaknesses of your business.

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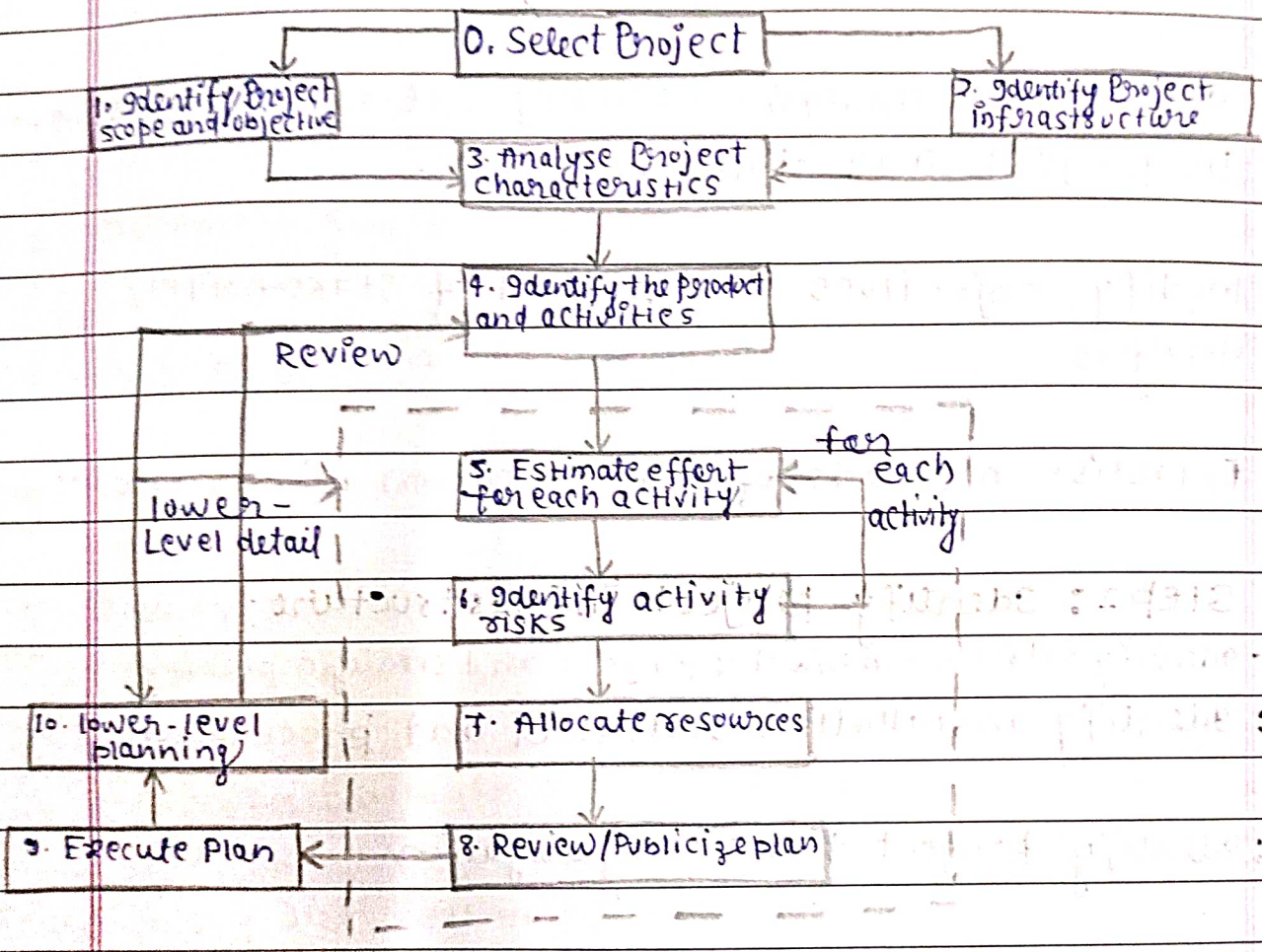
Stepwise Project Planning:

Planning is the most difficult process in project management. The framework described is called the stepwise method to help to distinguish it from other methods.



Steps in Project Planning:

- Step 0: Select project.
- Step 1: Identify project scope and objectives.
- Step 2: Identify project infrastructure.
- Step 3: Analyze project characteristics.
- Step 4: Identify project products and activities.
- Step 5: Estimate effort for each activity.
- Step 6: Identify activity risks.
- ~~Step 7:~~

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Step 0: Select Project

Step 1: Identify project scope and objectives

Step 1.1: Identify objectives and practical measures of the effectiveness in meeting those objectives

Step 1.2: Establish a project authority

Step 1.3: Stackholder analysis – Identify all stakeholders in the project and their interests.

Step 1.4: Modify objectives in the light of stake-holder analysis.

Step 1.5: Establish methods of communication with all parties

Step 2: Identify project infrastructure:

Step 2.1: Identify relationship b/w the project and strategic planning

Step 2.2: Identify installation standard and procedures.

Step 2.3: Identify project team organization.

Step 3: Analyse project characteristics

Step 3.1: Distinguish the project as either objective-or product-driven.

Step 3.2: Analyze other project characteristics (including quality-based ones)

Step 3.3: Identify high-level project risks.

Step 3.4: Take into account user requirements concerning implementation.

3.5:- select development methodology and life-cycle approach.

3.6:- Review overall resource estimates.

Step 4:- Identify Project Products & Activities

4.1:- Identify and describe project products (or deliverables)

4.2 Document generic product flows

4.3 Recognize product instances

4.4 Produce ideal activity network.

4.5 Modify the ideal to take into account need for stages and checkpoints.

Step 5:- Estimate effort for each activity

5.1 Carry out bottom-up estimates.
- distinguish carefully b/w effort and elapsed time.

Revise plan to create controllable activities
- breakup very long activities into a series of smaller ones.
- bundle up very short activities.

Step 6:- Identify activity risks

6.1 Identify and quantify activity based risks.
- damage if risk occurs.
- likelihood if risk occuring.

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6.2 Plan risk reduction and contingency measures.
- riskreduction : activity to stop risk occuring.
- contigency : action if risk does occurs.

6.3 Adjust overall plans and estimates to take account of risks.

Step 7 : Allocate resources

7.1 Identify and allocate resources

7.2 Revise plans and estimates to take into account resource constraints.

Step 8 : Review / Publicize plans

8.1 Review quality aspects of the project plan.

8.2 Documentr plans and obtain agreement.

Step 9 and 10 : Execute plan, Lower Levels of planning

—x—

Objectives Should be SMART :-

S → Specific, that is, concrete and well-defined

M → Measurable, ie., satisfaction of the objective can be objectively judged

A → Achievable, i.e., it is within the power of the individual or group concerned to meet the target

R → Relevant, the objective must relevant to the true purpose of the project.

T → Time constrained, there is defined point in time by which the objec should be achieved.

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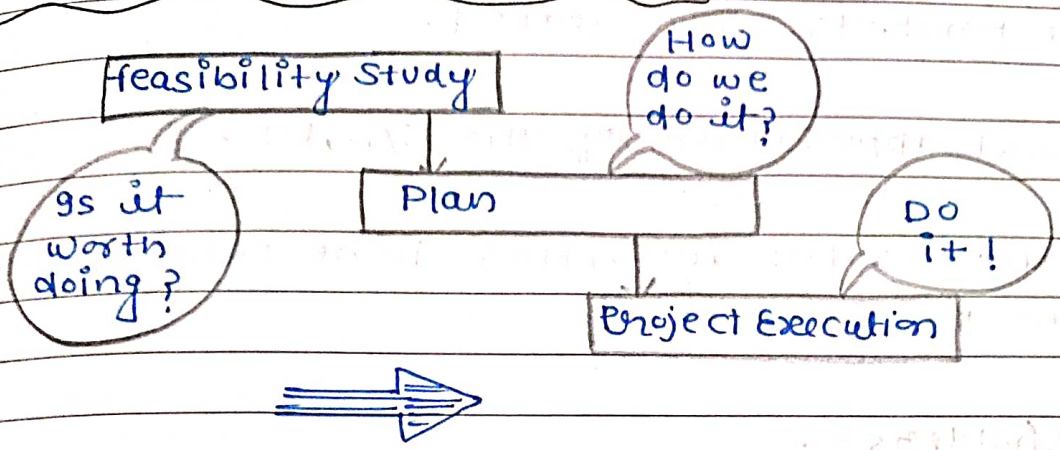
Activities Covered by SPM:-



1) The Feasibility Study:-

→ Assesses whether a project is worth starting.
→ Information is gathered about the requirements of proposed application and this process can be complex and difficult.
→ Developmental and operational costs are estimated.
→ Benefits of new systems will be estimated.

2) Planning:-

→ If a feasibility study indicates the project as worthy, planning starts.
→ Normally a complete detailed plan is created for smaller projects.
→ For larger projects, an outline plan for the whole projects and a detailed one for the first stage will be created.

3) Project Execution:-

→ Execution often contains design and implementation sub-phases.

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⇒ Design is making decisions about the form of the products to be created.

⇒ External appearance of the S/w, UI.

→ Plan details the activities to be carried out to create the products.

Stakeholders :-

⊙ People who have a stake or interest in the project.
⊙ Their early identification is important as adequate communication channels need to be set up with them.
⊙ Stakeholders can be categorised as:
- Internal to the project team.
- External to the project team but internal to the organization.
- External to both the project team and organization.