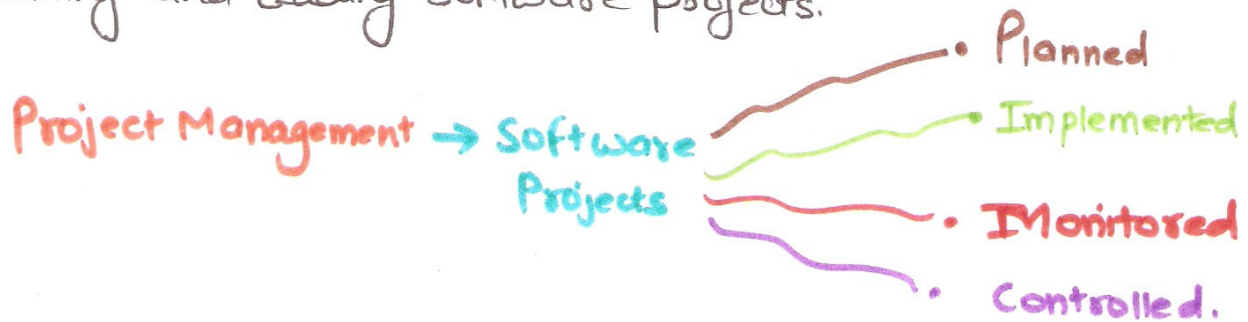


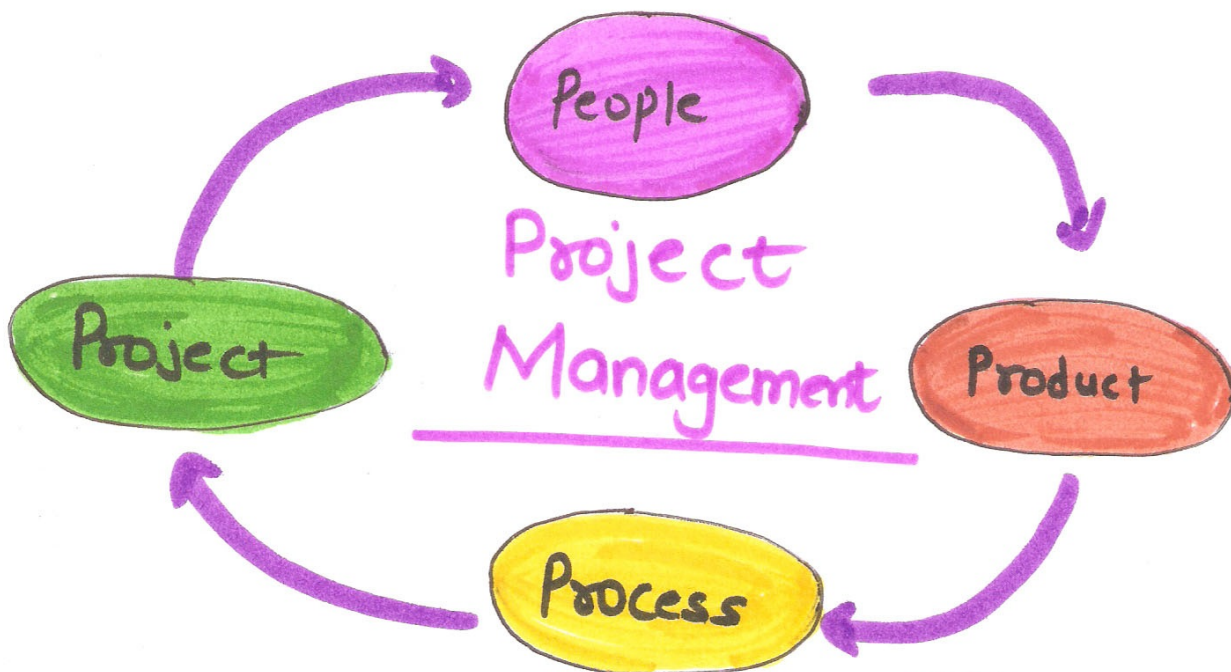
Software Project Management

Project Management Concept

Software project Management is the art and science of Planning and Leading Software projects.



Effective Software project management focuses on the four P's:



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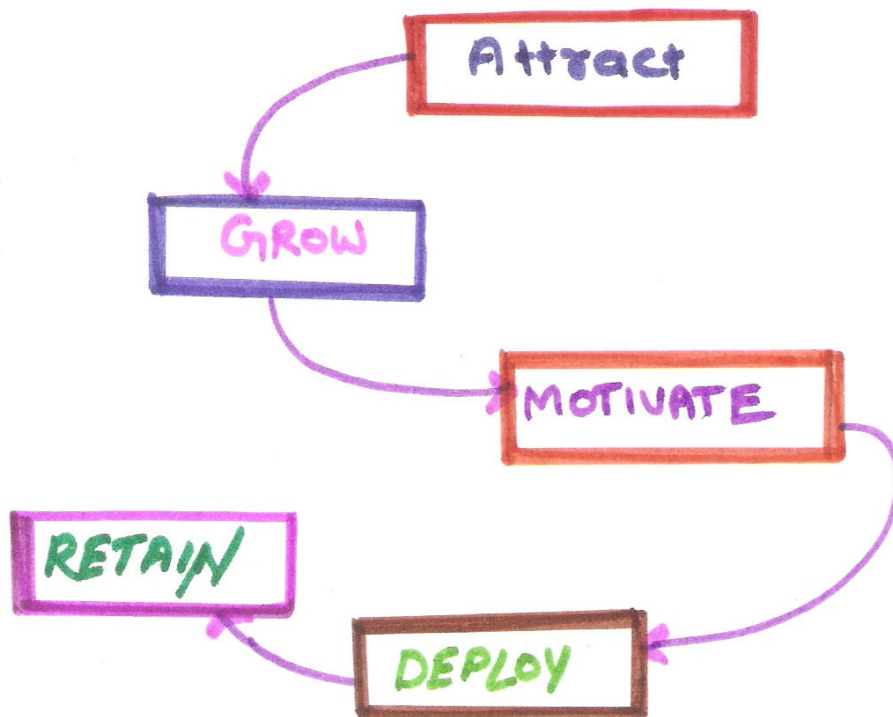
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The People

IT Deals with the Cultivation of motivated, highly skilled people.

Software Engineering Institute has developed a **People Management Capability Maturity Model (PM-CMM)**

to enhance the readiness of software organizations to undertake **Increasingly Complex Applications** by helping to



the talented needed to improve their software development capability.

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The People Management Maturity Model focuses on



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People Consists of

SOFTWARE
PEOPLE
PROGRAM

- **The Stake Holder**
(Senior Manager, Project Managers, Practitioners, Customers and End Users.)
- **The Team Leaders**
(Right skills and experienced)
- **Software Team**
(Coders, Tester, Managers)

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The People: The Stake Holders

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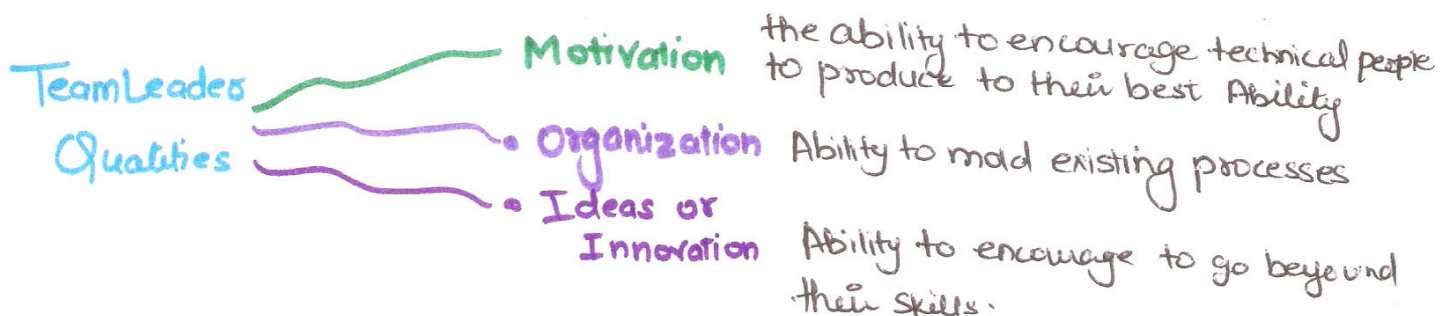
Five Categories of Stake Holders

- **Senior Managers :** Define business issues that often have significant Influence on the project
- **Project (Technical) Managers :-** They **Plan, Motivate, Organize, and Control** the **Practitioners** who do the work.
- **Practitioners :** Delivers the Technical skills that are necessary to engineer a **product or application.**
- **Customers :-** Specify the requirements for the Software to be engineered and other Stakeholders Who have a Personal interest in the outcome.
- **End Users :-** Interact with the Software once it is released for **Production use.**



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The People: Team Leaders



Another set of useful Leadership Traits

- **Problem Solving:** Diagnose, structure a solution, apply lessons learned,

- **Managerial identity** - Take charge of the project, have confidence of to assume control, have assurance to allow good people to do their jobs.
- **Achievement** - Reward initiative, demonstrate that controlled risk taking will not be punished.
- **Influence and Team building** - Be able to 'Read' people, understand verbals and non verbals signals, able to react to signals, Remain under control in high-stress situations.

The people : The Software Team

Seven project factors to be considered when structuring a software Development Team



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Four Organizational paradigm for Software Development Teams

1. **Closed Paradigm** : Traditional hierarchy of authority works well when producing software similar to past efforts, Members are less likely to be innovative

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2. **Random Paradigm**:- Depends on individual initiative of team members, works well for projects requiring innovation or technological break.

3. **Open Paradigm**:- Hybrid of the closed and random paradigm, works well for solving complex problems, requiring collaboration, communication, and consensus among members.

4. **Synchronous paradigm**:- Organizes team members based on the natural pieces of the problem, members have little communication outside of their subgroups.

The PRODUCT

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The scope of the Software Development must be established and bounded:-

- **Context**: How does the software to be built fit into a larger system, product, or business context and what constraints are imposed as a result of the context?
- **Information Objectives** - What customer-visible data objects are produced as output from the software? What data objects are required for input?
- **Function and Performance**:- What functions does the software perform to transform input data into output? Are there any special

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Performance Characteristics to be addressed?

- Software project scope must be unambiguous and understandable at both the **Managerial** and **Technical** Levels.



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The Process

The project Manager must decide which process model is most appropriate based on

- The Customer who have requested the product and the people who will do the work.
- The characteristics of the product itself.
- The project environment in which the Software team works

The Project

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Planning and controlling a Software project is done for one Primary Reason. It is the only known way to manage complexity.

W⁵HH principle

A series of questions that led to a definition of key project characteristic and the resultant project plan

- **Why** is the system being developed?
→ Assesses the validity of business reasons and justifications
- **What will be done?**
Establishes the task set required for the project

- **When** will it be done
 - Establishes a project schedule
 - **Where** are they organizationally located?
 - Notes the organizational location of team members, customers, and other stakeholders
 - **Who** is responsible for functional
 - Defines the role and responsibility of each team member
 - **How** will the job be done technically and managerially?
 - Establishes the management and technical strategy for the project.
- How:** Much of each Resource is needed?
→ Establishes estimates based on the answers to the previous questions.

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