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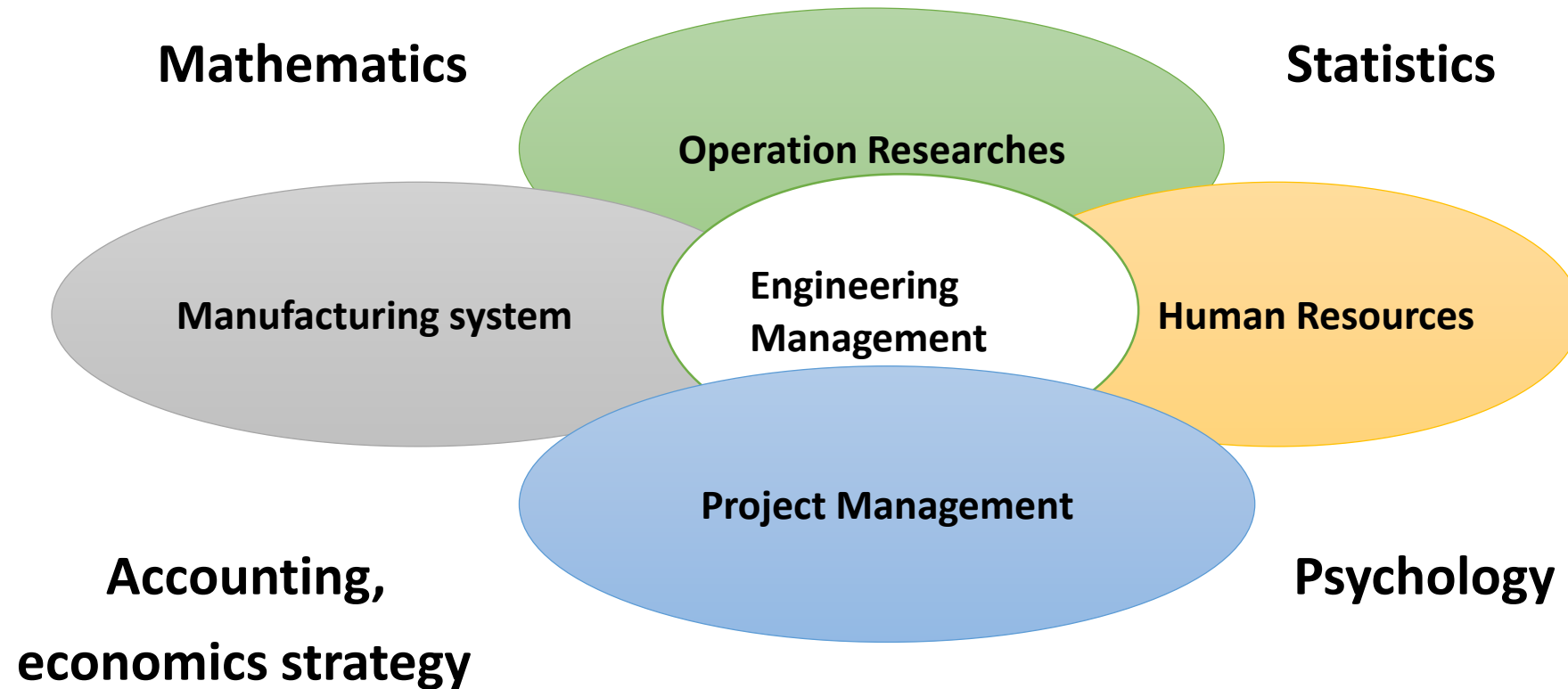
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Organizational Model



Management :- is an art of directing workers efforts to obtain high production and excellent quality.

This leads to avoidance of loss, profits are increased and it provides security and safety element.

Engineering Management :- It Concerned with the design, Installation, improvement of integrated systems of people, material, information, equipment and Energy.

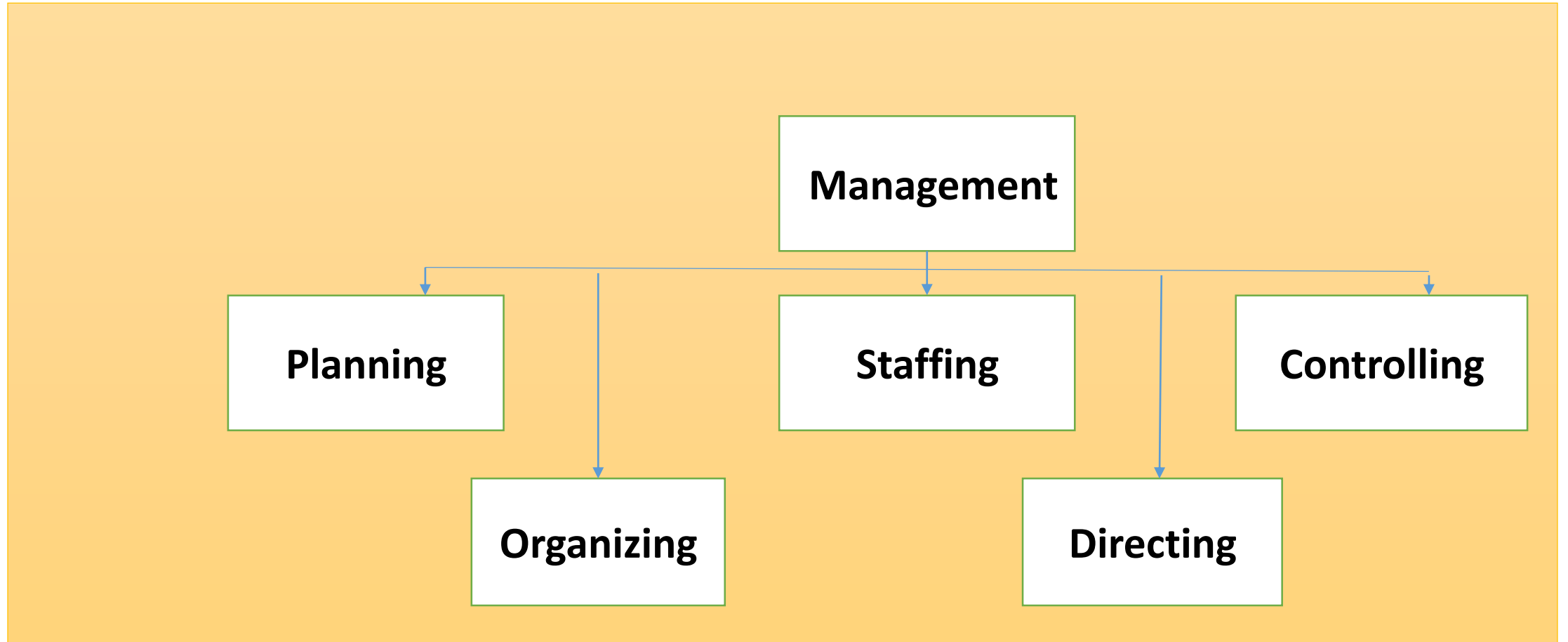
Management needs :- Objectives, Resources, Methods, Organization setting and People.

Project :- It is an assignment (task) job that has to be undertaken and completed within a set of time, budget, resources and performance specification designed to meet the needs of stakeholder and beneficiaries.

Specification of project :-

- 1-Title of Project,
- 2- Scope,
- 3- Objective,
- 4- Conditions under which project is to be carried.,
- 5- Priority in relation to other projects., 6- Authority.

Block Diagram of Management Elements



Function of Manager :-

1- Planning, 2- Organizing, 3-Directing, 4- Controlling

Elements of Management :-

1- **Planning** :- This process performed to define and mature the project scope, develop the project management plan, and identify and schedule the project activities that occur within the project.

2- **Organizing** :- It involves

a- Establishing a structure to be filled by people, aimed at reaching the defined goals and objectives.

b- Defining job content, interfaces, responsibilities, authority and resource allocation.

3- Staffing :- it involves

a- Filling the positions in the organizational structure with suitable people.

b- Keeping the positions filled, in order to execute the plan.

4- Directing (or Leading) :- It involves

a- Creating an environment in which individuals, working together in groups, can accomplish well-selected aims.

b- Influencing people to contribute to reaching the goals and objectives.

c- Using leadership styles, communication, conflict resolution, delegation, etc. in order to overcome the problems arising from people issues

(attitudes, desires, motivations, behavior in groups, etc.) on a project.

5- **Controlling (and co-ordination)** :- It involve

a- Measuring actual performance.

b- Comparing actual – with desired results and implementing corrective actions- eg. By controlling the actions of the people doing the work.

Objectives of the project Management :-

The basic purpose for initiating a project is to accomplish some goals. The reason for organizing the task as a project is to focus the responsibility and authority for the attainment of the goals on an individual (project Manager) or a small group (project team).

Project Management is a means by which to fit the many complex pieces of the project puzzle together, both human and technical, by use of: **1-** Schedules, **2-**Budgets, including resources allocation, **3-** Scope (product) definition

Purposes of Project Management :-

1- Technical :Documentation techniques to Communicate, a- **the Plan**, b- **Status** which compares 'planned' versus 'actual' performance.

2- Human: Managerial skills to be a better 'Manager' of people as well as the project. Implementation of project Management Technique can have Significant results such as:

1- Cost reduction, 2- Time reduction, 3- Resources allocation, 4- Increased Quality.

Steps or Phases of Project Management :-

The steps followed for project management are essentially the steps for successful project initiation, development and completion.

1- Project Initiation : a-concept definition, which includes identification and selection of opportunities and identification of objectives, **b-Feasibility study and justification**

2- Project Planning :- Scope definition

Goal definition, includes time, money, resources and product targets •

Project requirements – definition of deliverables •

Project objectives – definition of major work efforts, quantifiable. •

Work break down structure •

Analysis and break down of project into smaller pieces of work. •

Development of checklist of everything that needs to be done. •

Team building. •

Selection of project manager •

Selection of team members •

Use resources matrix to match skills task requirements. •

3- Project Scheduling :-

- Determining sequence of work
- Building network / interdependence
- Analysis of interdependence, estimation of total duration (CPM, PERT) and determination of critical path.
- Establish milestones.
- Graph on time chart (Gantt chart)
- Determining human resources loading.
- Establishing milestones / reporting periods.

4- Project Costing :-

- a- Estimate costs, capital / operating.
- b- Develop cost spreadsheets

5- Project Control :-

- a- Done periodically (at milestone).
- b- Time control, status, deviations from plan, replanning ,new estimates.
- c- Cost control, Expenditure, deviations from plan, new estimates.
- d- Quality control, performance versus performance criteria/ project requirements

6- Project Termination / Evaluation :-

Post project activity ■

Statistics from monitoring progress. ■

Client feedback. ■

Profitability or not of the project. ■

Post implementation report. ■

Planning and Control in Projects:

Planning, Scheduling and Controlling

Planning :- This process is performed to define and mature scope, develop the project management plan, and identify and schedule the project activities that occur within the project.

Scheduling :- is the process of determining when project activities will take place depending on defined durations and precedent activities.

Schedule constraints specify when an activity should start or end based on duration, predecessors, external predecessor relationships, resource availability, or target dates.

Control :- Is the process of comparing actual performance with planned performance, analyzing the differences, and taking the appropriate corrective action.

Project Planning and Scheduling:-

Project planning at begins as soon as definition allows. The process involves planning subprojects first and hence definition must at least have identified the sub-projects and major tasks involved in them.

From this point, planning and definition tend to continue in parallel as a series of iterations, gradually refining and hardening both definition and plans.

The purpose of the project plan at this stage is to provide detailed realistic estimates of time, duration, resource and cost, and planning should be carried out only in sufficient detail to allow this to be achieved.

Detailed planning for allocation of tasks to individuals is carried out progressively as the work proceeds.

Where there are sub-projects these should be planned first and then combined to produce the overall project plan.

Produce a plan for each sub-project, or for the total project if there are no sub-projects as follows:

1- Identify Major Activities :-

Break the work down into activities of the order of 20-50 days of effort, ensuring that milestones correspond to completion of one or more of these.

In practice the achievement of a milestone is usually a good basis for identifying an activity e.g "prepare and perform user training"

2- Identify and Chart Dependencies :-

Produce a network chart for the sub-project showing dependencies between the major activities and dependencies on other sub-projects or external events.

3- Estimate Effort and Duration :-

Estimate effort and duration for each major activity.

4- Provide Contingency :-

At this stage estimates are likely to be 'soft' and probably expressed in ranges, because precise details of the work are not settled.

Contingency needs to be allowed both on the estimated effort and •
elapsed time because of :

- The likelihood of unforeseen work arising,
- The likelihood that tasks will take longer than expected,

- The likelihood of changes to requirement or plans before publication.
(subsequent changes should be processed through Control).

Contingency provision should remain evident in plans(probably as one or more contingency 'tasks'). This provision should then progressively be removed from plans during Tracking and control as a result of either:

- being used up by e.g tasks taking longer than planned,
- or reaching a point where uncertainty is reduced such that a part of contingency provision can safely be deleted. This usually means the deletion of contingency allowed, but not used, on tasks now completed.

5- Schedule Major Activities :-

Determine start and end dates for each major activity and produce a bar chart or other diagram, showing relationships between activities.

6- Calculate Resource Requirement :-

Calculate requirement for each time period. Identify needs for each resource type (e.g. systems analyst, user staff) and identify needs for special skills or scarce resources.

7- Calculate Costs :-

Calculate costs for the sub-project. This should include 'hardening up' items such as cabling, training etc., for which an order of costs had been produced previously.

8- Determine overall Costs and Benefits of the Project :-

The cost / benefit justification should have already been stated in the feasibility study. This stage provides the opportunity to review the case in the light of more detailed information.

9- Document the project Plan :-

Once a viable plan has emerged(i.e Conflicts have been resolved, resource availability has been confirmed etc.) the Project Manager should produce the Project Plan covering.

- Project Schedule :This should show major activities by sub-project on a bar chart or other diagram. The chart should show project milestones and target dates. Show contingency as a single provision at the end. Include an overall project network showing the critical path. Narrative explanation may be include for clarification.

- **Major check points and Review** :- List the dates of Checkpoint Reports, checkpoint Meetings, Steering Group Meeting and Post-implementation review.
- **Deliverables**:- List the major Products of the Project with delivery dates and acceptance procedures.
- **Resources** :- Summarize the resource needs from the sub-project plans.
- **Cost and Benefits** :-Revise and refine as a result of Completion of definition and planning.
- **Potential problems** :- List any risks, problems or assumptions which may jeopardize the plan, together with actions needed to correct the situation.
- **Ensure Management System are in place.**

Project Implementation and Control :-

The role of the project manager falls into three areas ;p

- a- Management of stakeholders.
- b- Management of the project life cycle.
- c- Management of Performance.

An approach needs to be developed for each of these. Control and monitoring procedure need to be put in place and appropriate information systems developed. The procedure which are put into place can only be successful if :

- a- There is satisfactory information to enable the team to manage the project effectively.
- b- They are simple and easy to operate and understand.

c- They have the full support of the project team.

How should this relate to the three categories referred to above?

i- **Management of stakeholders:**

Stakeholders' interest must be monitored to ensure that:

- 1- Their interest and support is maintained.
- 2- Their views and ideas are being adequately reflected in the project development.
- 3- Their personal success criteria are being pursued and achieved.
- 4- Environmental change is fully taken into account.

ii- Management of the Project life Cycle:

This is probably the most conventional view of project control. Feedback systems need to be set up to monitor key areas. The key areas would be as follows :

1- **The project timetable**, with particular reference to critical event times and potential bottlenecks. There should be feedback on activity times achieved and their effect on the whole project. If network analysis is used, then it is vital that the network is reworked and updated to take into account the actual performance achieved.

2- **The project budget**, budgetary control procedures can be used as in respect of any other form of budget.

3- **Quality and performance standards**, these need to be monitored against the original project specification subject to changes agreed with stakeholders in the course of project development. Where possible this should all be done through positive reporting which will require action to be taken.

iii – **Management Performance**: This is the least tangible but possibly the most important of the three categories. How it is tackled will depend upon what kind of project is being carried out.

It is unlikely that the project team will spend all of their working time together in close proximity and under the direct supervision of the project manager. It is much more likely that they will work apart most of the time, only meeting up occasionally and only meeting with the project manager from time to time.

Control issues that need to be considered therefore would be :

1- How to get the best out of the team when they are together. If you are holding meetings then they should be purposeful and effective.

They should not simply be part of the routine.

Having said that, they may be an important element in binding the team together and in developing a team approach to planning and monitoring of performance.

2- Ensuring people work when the team is apart. You need to set people realistic deadlines and ensure that they see the importance of their contribution and that their contribution is fully valued.

3- Communications are important in terms of disseminating information and keeping everyone informed. There are views that team members should be given information on a need to know basis but this approach can cause problems.

4- Ensuring continuing commitment by the team and adherence to the values and beliefs being pursued by the team.

5- Change, in particular, needs to be communicated to team members quickly and effectively. It is important to stress once again the need to look at the team and also for the project leader to look inwards at his or her own performance.