PLTW Engineering

12/Project Management

April 13, 2020

12/EDD
Lesson: **4/13/2020**

Objective/Learning Target: Students will be able to explain the purpose and procedures of project management

Project management is the planning, organizing, and managing of resources to successfully complete a project.

Project managers ensure that
- All project goals are achieved
- The project complies with all of the project constraints

When starting a project, it is important to answer some common questions:

- Where do I need to go? Beginning with the end in mind is important. It is imperative to understand the scope, limits, and criteria for the project.

- When do I need to be there? Time frame is important. This is a constraint that is important and usually non-negotiable for supervisors and clients. If the time constraint is not met, then extra costs and profit are affected.

It is important to break down the project into manageable tasks.

- What do I need to get there? It is important to brainstorm and plan with your team the resources that will be needed to accomplish the project.

- Whom do I need to help me? Often times, big projects can not be done alone. Projects of this caliber has several members on the team.

It is also important to identify and involve subject matter experts during several phases of the project.

- Fully answering these questions above will allow the team to see the "How" and "Why" of the project. Just remember that a well planned project will most likely evolve and change. Be flexible and ready to adapt.

All stakeholders, because they have a "stake" in the outcome, should be involved in the project from beginning to end. For a building project, stakeholders can include the owner, employees, maintenance staff of the building, architect, civil engineer, other professionals involved in the design, end users, community members, and others.

Clearly defining all stakeholders and their expectations before controlling and executing ensures that nothing or nobody has been forgotten. Furthermore the closure of a project is clear and justifiable when stakeholders are involved and buy in at the beginning of the project.

The phases that any project progresses through are:

- Initiating

- Planning

- Executing

- Controlling

- Closing

The most time in projects is usually spent executing and controlling.

The success or failure of a project is often determined by planning, initiating, and closing.

Poor initiating can lead to team members not sharing the same vision for the project and to difficulty deciding when the project is really finished.

Successful planning involves detailed short-term planning and broad long-term planning and requires that plans be revisited as the project progresses to adjust to new information and changes.

Successful closure means that everyone recognizes when a project is complete and that the results are successfully transitioned or handed over.

The initiation phase develops the scope of the project. It includes

- Analyzing the needs of the client
- Analyzing stakeholder input, including input from the end user(s) and support personnel

- Financial analysis of costs and benefits and development of a budget

- Determining constraints
- Creation of a program which describes the design objectives, constraints, and criteria of the project

Planning Phase

The planning phase includes creating a plan to handle communications among team members and stakeholders, quality control, human resource (people) management, procurement of materials, cost containment, and creating a project schedule to plan the time and resource allocation during the project.

The execution phase includes completing the project work. It involves coordinating the people and resources to complete the project tasks and activities according to the project management plan. The deliverables, which typically include drawings and specifications for the project, are produced. If the team is creating products, often working prototypes are created prior to the mass production of the product.

In the monitoring and controlling phase, it is important to monitor the cost, effort, and scope of the project.

Scope refers to the work that is required in order to define, design and produce a product, service or result with the specified features and functions.

Controlling scope creep is an important part of project management. Scope creep refers to the expansion of the scope of a project beyond the initial planning of the project which almost always adversely affects the cost and effort required to complete the project.

Closing Phase

The closing phase is a wrap up and report of the project. This may be achieved in a variety of ways based upon each project.

Project Management Institute

Team Gannt Guide to Project Management