**1)Triple constraint:**

All projects are carried out under certain constraints – traditionally, they are cost, time and scope. These three important factors (commonly called "the triple constraint") are often represented as a triangle

1. Cost: All projects have a finite budget; the customer is willing to spend a certain amount of money for delivery of a new product or service. If you reduce the project's cost, you will either have to reduce its scope or increase its time.

2. Time (Schedule): As the saying goes, 'time is money', a commodity that slips away too easily. Projects have a deadline date for delivery. When you reduce the project's time, you will either have to increase its cost or reduce its scope.

3. Scope: Many projects fail on this constraint because the scope of the project is either not fully defined or understood from the start. When you increase a project's scope, you will either have to increase its cost or time.

**2)process groups**

**Initiate**. The initiation process authorizes the overall project or the next phase of a project. In this phase, project objectives are established, scope is defined, and responsible parties and deliverables are identified.

**Plan**. The planning processes are precisely that--the defining and refining of the best courses of action to take to attain the project objectives. Planning falls into two categories: core planning processes and facilitating processes.

Core processes are those that have clear dependencies that require them to be performed in essentially the same order on most projects. Examples include scope planning, schedule development, resource planning, and cost budgeting.

Facilitating processes are entirely dependent on the nature of the project and are performed intermittently and as needed--though they are not optional. Some of the facilitating planning processes include quality planning, staff acquisition, and risk identification.

**Execute**. Planning paves the way for executing, which involves coordinating resources, human and otherwise, to carry out the overall project plan. Because of the ongoing role execution plays in project management, its processes are also divided into core and facilitating subgroups. The central core process, project plan execution, oversees facilitating processes such as team development, information distribution, and solicitation.

**Monitor and control**. As the figure below shows, controlling processes have a strong presence in all but one of the project management stages. These processes ensure not only that project objectives are met, but also that corrective action can be taken should a problem arise. In this phase, performance reporting and risk monitoring and control are core. These watchdog processes work with facilitating processes such as cost control, quality control, and schedule control to ensure the project stays on track.

**Close**. The watchful eyes of the controlling processes eventually lead to closing, where the project is accepted and brought to an orderly end. The two main components of closing are contract closeout, in which any remaining open items are resolved and the contract is settled, and administrative closure, the gathering of information to formalize project completion, including compiling lessons learned for use in future projects.

It is important to note that the individual processes are not one-time events. Rather, they are overlapping activities that occur at varying levels of intensity throughout the course of the project. Using these standardized project management practices can help organize any project, and make said project a smoother, less stressful endeavor.

3)**Project charter**

Inputs

What should be accomplished before writing the project charter?

Needs are identified

Key components of the project have been identified with the stakeholders involvement

General agreement to proceed with the project

Send email to your manager, director, and/or AVP to discuss or inform UW Information Technology senior management about proposed new services and changes to existing services.

Outputs

The anticipated outcomes from the project charter include:

The big picture of what needs to be done but not how the project will be done. Details will be worked out in the planning phase.

A common set of expectations for scope, time, resources, quality, budget and results.

The key components of the project are communicated to all vested parties, including sponsors, customers, management and team members.

Assumptions and constraints for the project are outlined.

An agreement that establishes the authority of the project manager and the project team, and the management commitment to the project.

Provides an opportunity to address differing opinions before the project begins.

**4)TOPDOWN vs BOTTOM UP APPROACH**

**Using the top-down approach**

The top-down approach to defining project tasks involves starting with the project goal or final deliverable, and breaking it down into smaller planning chunks. We call them work packages. Each of these work packages or “chunks” is further refined into greater detail, and then work items are assigned to team membersThe top-down approach works well when there’s clear insight into the details of a project, and the leading project manager has a big-picture of how the project contributes to the organization.The benefit of top-down is that the major tasks are quickly identified, and the details are later refined by the project team. However, the downside is that details might be missed without a detailed review by the project team.

The bottom-up approach to answering “what are the tasks” relies on project team members identifying the tasks and then organizing them into specific groups or work packages. If you applied a bottom-up approach to identify tasks for the software upgrade mentioned above, the entire project team would brainstorm all the tasks required to correctly upgrade the system. There’s also a greater chance that a team member will identify an operating system conflict or at least include a step to test that feature than in top-down planning. Ideas get flowing and tasks can be written down on sticky note pads or index cards. All these tasks can then be logically grouped into categories that make up each work package.The bottom-up approach results in a more detailed schedule, but it’s also a time-consuming approach compared with the top-down task planning approach. The schedule you create is based on direct input from experts who will be implementing the project; it’s also a useful technique to build teamwork.If your organization doesn’t have previous experience with the type of project you’re trying to plan, this approach helps identify unknown tasks.