What is a Project?

Project characteristics:

A Project is a temporary endeavor undertaken to create a unique product, service, or result.

Temporary, means that every Project has a definite beginning and a definite end. The end is reached when the Project's objectives have been achieved, or it becomes clear that the project objectives will not or cannot be met, or the need for the Project no longer exists and the Project is terminated. Temporary does not necessarily mean short in duration; many projects last for several years. In addition, temporary does not generally apply to the product, service or result created by the Project.

What is project management?

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. project management is accomplished through the application and integration of project management processes of initiating, planning, execution, monitoring and controlling, and closing. The project manager is the person responsible for accomplishing the project objectives.

Managing a project includes :

1- Identifying requirements.
2- Establishing clear and achievable objectives.
3- Balancing the competing demands for quality, scope, time, and cost.
4- Adapting the specifications, plans, and approaches to the different concerns and expectations of the various stakeholders.

project manager often talk of triple constrain – project scope, time and cost in managing competing requirements. Quality is affected by balancing the three factors. High quality projects deliver the required product, service, or result within scope, on time, and within budget.

Project plan

A project plan, according to the Project Management Body of Knowledge, PMBOK is

"...a formal, approved document used to guide both project execution and project control. The primary uses of the project plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines. A project plan may be summarized or detailed."[1]

According to PRINCE2, Project plan defines as:

"...a statement of how and when a project's objectives are to be achieved, by showing the major products, milestones, activities and resources required on the project."

In some industries, particularly information technology, the term "project plan" can refer to a Gantt chart or other document that shows project activities along a timeline. While
common, this use is inaccurate. These types of documents are more accurately described as "project schedules" and are only one component of a true project plan.

At a minimum, a project plan answers basic questions about the project:

- **Why?** - What is the problem or value proposition addressed by the project? Why is it being sponsored?
- **What?** - What is the work that will be performed on the project? What are the major products/deliverables?
- **Who?** - Who will be involved and what will be their responsibilities within the project? How will they be organized?
- **When?** - What is the project timeline and when will particularly meaningful points, referred to as milestones, be complete?

To be a complete project plan according to industry standards such as the PMBOK or PRINCE2, the project plan must also describe the execution, management and control of the project. This information can be provided by referencing other documents that will be produced, such as a Procurement Plan or Construction Plan, or it may be detailed in the project plan itself.

**Five Goals of Every Project**

Project goals keep the focus on what is most important. However, on some teams these primary goals are lost in their meeting’s activities. Make sure each meeting is structured so as to move the project forward. Even if the progress is only inches rather than by huge leaps, the team must be pushing the project forward as quickly, safely, and reasonably as possible.

1- **Finish the project within the scheduled timetable.**

Your goal should be to finish the project within the timeframe agreed upon. This means you must do everything possible to drive the project to the end and stay on time. Remember to avoid guessing and incompetence in the planning of the scope so as to have a reasonable time schedule with which to work.

2- **Finish the project within the scheduled budget.**

Budgets are set by some project teams while others inherit them. Whether you set the budget or inherit it, you need to make sure you are doing your best to track your expenditures and know where the money is going. When you finish the project within the scheduled budget, you demonstrate your ability in running the project responsibly.

3- **Finish the project with the same level of quality.**

Unfortunately, when projects lag behind, quality is often sacrificed in order to catch up. Project leaders sometimes feel that in order to pick up speed, pieces of the project will need to be downsized or cut completely. True, the project plan will have to be revised when problems arise, but the revision should never compromise quality. While it is important to keep deadlines, it is equally important to keep the project’s quality high throughout the project.
4- Finish the project within the specified guidelines.

Make sure you are meeting the customer's needs. You must "wow" the customer! This can be done simply by finishing the project with the specifics the customer really wanted. The best way to solidify this is to verify your accomplishment by customer handoff and close down.

5- Do the best you can with what you have been given.

There is no such thing as a perfect project. Some projects run up against major odds and hurdles. For example, many recent projects in our country have endured major setbacks because of terror attacks, severe weather causing power outages, or a nation at war. Even against these catastrophes, projects were remarkably turned around and back on track because of great project team leaders and teams. Project goals were met because they did their best with what came their way.

Main Project phases:

Initiation

During the initiation phase of your primary market research project, you clearly define the research requirements and create a project charter. You identify the business case for this research and the expected benefits. You also define the research project scope by describing at a high level what this project will deliver and any specific exclusion. To complete the initiation phase, you document the project charter and have the charter approved before you move on to the planning phase.

Planning

In the planning phase, you continue with more detailed analysis and requirements for your primary market research project. You create the scope statement, develop a Work Breakdown Structure (WBS), and define a baseline against which project performance will be measured. You plan the process of selecting a marketing research vendor, if you decide to hire an outside consultant. You create a schedule and a plan for managing resources. Finally, you create the supporting plans, such as risk management and quality control. At the conclusion of the planning phase, project stakeholders and the team should clearly understand the project plan and have approval to start the execution phase.

Execution

The execution phase of the Primary Market Research Schedule focuses on preparing for and carrying out a brainstorming session and then advertising for and selecting a research vendor who carries out the actual information gathering. First, you perform the prep work — from identifying the location for the brainstorming session to arranging for a facilitator. Then you conduct the brainstorming session and present the results to management. The next important step is to solicit proposals and select a research vendor. The vendor develops the primary market research tools and then conducts the primary market research. When the execution phase is completed, you compile the gathered data and present a complete report to management.

Closeout

In the closeout phase, you archive the documents. You then review the project so that future projects can benefit from any lessons learned. Finally, you close out the project.
The Project Management Body of Knowledge (PMBOK) Guide is process-based, meaning it describes work as being accomplished by processes. This approach is consistent with other management standards such as ISO 9000 and the Software Engineering Institute’s CMMI. Processes overlap and interact throughout a project or its various phases. Processes are described in terms of:

- Inputs (documents, plans, designs, etc.)
- Tools and Techniques (mechanisms applied to inputs)
- Outputs (documents, products, etc.)

The Guide recognizes 42 processes that fall into five basic process groups and nine knowledge areas that are typical of almost all projects.

- **The five process groups are:**
  1. Initiating
  2. Planning
  3. Executing
  4. Monitoring and Controlling
  5. Closing

- **The nine knowledge areas are:**
  1. Project Integration Management
  2. **Project Scope Management**
  3. Project Time Management
  4. Project Cost Management
  5. Project Quality Management
  6. Project Human Resource Management
  7. Project Communications Management
  8. **Project Risk Management**
  9. Project Procurement Management

Each of the nine knowledge areas contains the processes that need to be accomplished within its discipline in order to achieve an effective project management program. Each of these processes
Scope (project management):

In project management, the term scope has two distinct uses: Project Scope and Product Scope.

Project Scope: "The work that needs to be accomplished to deliver a product, service, or result with the specified features and functions." [1]

Product Scope: "The features and functions that characterize a product, service, or result." [2]

Notice that Project Scope is more work-oriented, (the hows,) while Product Scope is more oriented toward functional requirements. (The whats.)

If requirements are not completely defined and described and if there is no effective change control in a project, scope or requirement creep may ensue.

Scope creep management is important for effective project management. Projects are expected to meet strict deadlines with resource restraints, and an unvetted and unapproved change in the scope can affect the success of the project. Scope creep sometimes causes cost overrun.

Scope creep is a term which refers to the incremental expansion of the scope of a project which may include and introduce more requirements that may not have been a part of the initial planning of the project, while nevertheless failing to adjust schedule and budget. There are two distinct ways to separate scope creep management. The first is business scope creep, and the second is called features (also technology) scope creep. The type of scope creep management is always dependent upon on the people who create the changes.

Business scope creep management occurs when decisions that are made with reference to a project are designed to solve or meet the requirements and needs of the business. Business scope creep changes may be a result of poor requirements definition early in development, or the failure to include the users of the project until the later stage of the systems development life cycle.

Scope management plan is one of the major Scope communication documents. The Project Scope Management Plan documents how the project scope will be defined, managed, controlled, verified and communicated to the project team and stakeholders/customers. It also includes all work required to complete the project. The documents are used to control what is in and out of the scope of the project by the use of a Change Management system. Items deemed out of scope go directly through the change control process and are not automatically added to the project work items. The Project Scope Management plan is included in as one of the sections in the overall Project Management plan. It can be very detailed and formal or loosely framed and informal depending on the communication needs of the project.

Features (Technology) scope creep occurs when the scope creep is introduced by technologists adding features not originally contemplated. Customer-pleasing scope creep occurs when the desire to please the customer through additional product features adds more work to the current project rather than to a new project proposal. Gold-plating scope creep occurs when technologists augment the original requirements because of a bias toward "technical perfectionism" or because the initial requirements were insufficiently clear or detailed.
While no two projects are exactly alike, all projects should progress through the same five project management process groups:

1. In **Project Initiation** an individual (usually the project sponsor) proposes a project to create a product or develop a service that can solve a problem or address a need in the organization(s). The Charter is generally submitted to a selection process.

   (During the initiation phase of your primary market research project, you clearly define the research requirements and create a project charter. You identify the business case for this research and the expected benefits. You also define the research project scope by describing at a high level what this project will deliver and any specific exclusion. To complete the initiation phase, you document the project charter and have the charter approved before you move on to the planning phase).

   The Project Charter:

   a. describes the business case or project need
   b. describes the proposed solution and/or the product description
   c. identifies the customers of the project and why they will benefit from the project
   d. ties the project to the organization’s business and/or strategic plan
   e. provides a list of any known constraints and major alternatives considered
   f. includes the budget, resource requirements, and governance for completing the Project Initiation Plan

   The purpose of the Project Charter is to authorize the sponsor to assign a project manager and to apply resources with developing a Project Initiation Plan. Depending upon the standards and practices of the organization, there may be a time delay between the creation and selection of a project’s Charter, and the actual start of the project.

2. **To develop the Project Initiation Plan:**

   a. invite key stakeholders to a project planning session; sometimes this takes multiple sessions
   b. produce the Project Initiation Plan using input from planning session
   c. review the plan with sponsor to get his/her approval
   d. review the plan with team and key stakeholders. Get commitment to stakeholder roles and responsibilities

   Note: In the Project Initiation Plan, the WBS/key deliverables are generally at a high level. The Project Plan lives throughout the project and will continue to have increasing level of detail.

   At the conclusion of Project Planning (High Level), based on the Project Initiation Plan, the Business Case is revised and re-evaluated, and a decision is made either to halt the project or proceed to Project Planning (Detail level).

3. **Project Initiation Purpose**

   The purpose of Project Initiation is to evaluate proposed projects and to reach a consensus on the projects to be selected. During Project Initiation, the Project Charter is presented, and the strength of a project's Business Case and the viability of the proposed solution are evaluated. A determination is made as to whether the project is consistent with the institution’s business and/or strategic plan, and if the Project Planning (High Level) budget is affordable.
The Project Charter process may actually be part of the budget cycle, serving as the justification for budget requests. In this case, Project Charters may need to be created a full budget cycle prior to the project’s anticipated initiation.

Each organization has its own approach to green-lighting desired projects. There are some general principles, however, that apply to any effective evaluation and selection process:

- The deciding body must have enough information about the merits of the project’s Business Case and the viability of its Proposed Solution to make a meaningful evaluation.
- The selection process must take into consideration the project’s fit with the organizational mission and strategic plan, and be prioritized against other projects.

**The processes in Project Initiation**

The three major processes in Project Initiation are:

- **Develop Project Charter**, where the initial business case is made; where the Proposed Solution is described, along with alternatives considered; and where the budget and resources are identified for the Project Planning (High Level)
- **Evaluate Project Charter**, where the business case and proposed solution are evaluated for moving to Project Planning (High Level)
- **Select Project Charter**, where a consensus is reached on the project’s feasibility and relative importance in comparison to other proposed projects, and a decision is formally made regarding the Project Charter

**2- Project planning:**

In the planning phase, you continue with more detailed analysis and requirements for your primary market research project. You create the scope statement, develop a Work Breakdown Structure (WBS), and define a baseline against which project performance will be measured. You plan the process of selecting a marketing research vendor, if you decide to hire an outside consultant. You create a schedule and a plan for managing resources. Finally, you create the supporting plans, such as risk management and quality control. At the conclusion of the planning phase, project stakeholders and the team should clearly understand the project plan and have approval to start the execution phase.

In **Project Planning (High Level)** the sponsor, project manager, and key stakeholders are charged to develop the Project Initiation Plan. The Project Initiation Plan begins to define the overall parameters of your project. The Project Initiation Plan includes the goals, objectives, scope, high level work breakdown structure - key deliverables, a milestone schedule, governance, stakeholder accountabilities, benefits, costs, high level resource requirements, management approaches, a communication plan, and a risk plan. This plan, once approved or agreed to, ensures a consistent understanding of the project, helps to set expectations, and identifies resources necessary to move the project to the next level of detailed planning.

**Project Planning (High Level) Purpose**

The purpose of Project Planning (High Level) is to begin to define the overall parameters of a project and to establish the appropriate project management and quality environment required to complete the project. The major deliverable for this process is the Project Initiation Plan.
Development of the Project Initiation Plan is a pivotal starting point for the project that will serve as the foundation for all future efforts. The completion of this process is marked by the sign off and approval of the Project Initiation Plan.

Successful projects begin with a detailed project definition that is understood and accepted by Stakeholders. Putting everything down in writing helps ensure a commitment among Project Team members and between the team and the Stakeholders. As part of Project Planning (High Level), a Project Initiation Plan is developed which is comprised of the business case (refined from the Charter), overall goal, specific objectives, success criteria; scope, high level schedule, stakeholder accountabilities, the communication plan, benefits and costs, governance and resourcing, the management approaches and a high level risk plan. These documents, once approved, ensure a consistent understanding of the project, help to set expectations, and identify resources necessary to move the project to the next level of detailed planning. Potential problems are identified so that they can be addressed early in the project.

One of the primary deliverables of the Project Initiation Plan is a high-level Project Schedule that includes a list of all the Key (Major) Deliverables and Milestones for the project. This is the basis for the high level Budget. It is developed as the roadmap for Project Planning (Detail Level) and Project Execution and Control. This high-level schedule will be refined continuously over time, and will serve as the primary source of information regarding project status and progress. An accurate, realistic, and complete schedule, rigorously maintained, is essential to the success of a project.

Sponsorship of the project and the assignment of the Project Manager must be confirmed or gained during Project Planning (High Level). Having a Project Sponsor and/or Project Director, and securing approval early in the project management lifecycle, helps to ensure a commitment to the project. The assignment of the Project Manager will provide the management needed to develop the High Level Plan and manage the entire project cycle.

3. **Project Planning (Detail Level)** builds on the work done in Project Planning (High Level), refining and augmenting Project Plan deliverables. Usually, additional members join the Project Team, and they assist the Project Manager in further elaborating the details of the Triple Constraints: Budget, Scope, and Schedule. The team develops the detailed project schedule.

**To develop the Detail Plan:**

1. confirm detailed customer requirements
2. decompose the Work Breakdown Structure (WBS) to the level of detail you plan to use to manage the project
3. determine activity sequencing
4. plan for resources
5. determine activity duration
6. create budget from estimated costs
7. develop quality plan
8. develop transition plan
9. create Baseline Project Plan and Schedule

If the budget is different from the estimated budget in the Project Initiation Plan, then have the project sponsor(s) approve the new budget. This will become the baseline plan, and any change of scope will require approvals as defined in the Project Plan from this point forward.
The initial list of project risks is augmented and detailed mitigation plans are developed. Project-specific tasks normally begin while you are doing detail planning. Project Planning (Detail Level) marks the completion of the Project Plan. However, during execution and control you will continue to update the plan in more depth (for example, Transition and Implementation details may not be developed until later in Project Execution). At the conclusion of Project Planning (Detail Level), the Business Case is revised and re-evaluated based on the completed planning documents, and a decision is again made to either halt the project, or to commit the resources necessary for Project Execution.

4- Execution

The execution phase of the Primary Market Research Schedule focuses on preparing for and carrying out a brainstorming session and then advertising for and selecting a research vendor who carries out the actual information gathering. First, you perform the prep work — from identifying the location for the brainstorming session to arranging for a facilitator. Then you conduct the brainstorming session and present the results to management. The next important step is to solicit proposals and select a research vendor. The vendor develops the primary market research tools and then conducts the primary market research. When the execution phase is completed, you compile the gathered data and present a complete report to management.

Project Execution and Control Purpose

The purpose of Project Execution and Control is to develop the product or service that the project was commissioned to deliver. Typically, this is the longest part of the project management lifecycle, where most resources are applied.

Project Execution and Control utilizes all the plans, schedules, procedures, and templates that were prepared and anticipated during prior work. Unanticipated events and situations will inevitably be encountered, and the Project Manager and Project Team will be taxed to capacity to deal with them while minimizing impact on the project’s Triple Constraints.

The conclusion of Project Execution and Control arrives when the product of the project is fully developed, tested, accepted, implemented, and transitioned to the performing Organization.

Accurate records need to be kept throughout Project Execution and Control. They serve as input to the final step, Project Closeout.

Project Execution and Control is where most of the resources are applied /expended on the project. A significant number of team members will join the project at the beginning of Project Execution and Control. The primary task of the Project Manager during Project Execution and Control is to enable the Project Team to execute the tasks on the project schedule and develop the product or service the project is expected to deliver. The Project Manager uses the processes and plans prepared during Project Initiation and Project Planning to manage the project, while preparing the organization for the implementation of the product/service and for transitioning responsibility of the product/service from the Project Team to the Performing Organization. The major control tasks are monitoring progress, quality, and costs; identifying and resolving problems; applying corrective actions; and managing scope changes and risks.
5- Closeout

In the closeout phase, you archive the documents. You then review the project so that future projects can benefit from any lessons learned. Finally, you close out the project.

In Project Closeout, the Project Team assesses the outcome of the project, along with the performance of the Project Team and the performing organization(s). This is accomplished primarily through soliciting and evaluating feedback from Customers, Project Team members, Consumers, and other Stakeholders. The primary purpose of this assessment is to document best practices and lessons learned for use on future projects. Key project metrics are also captured to enable the organization to compare and evaluate success measures across projects.

**Project Closeout Purpose**

The purpose of Project Closeout is to assess the project and derive any lessons learned and best practices to be applied to future projects.

Project Closeout begins with a Post-Implementation Review. The review may start with a survey designed to solicit feedback on the project from the Project Team, Customers, Consumers and other stakeholders. Once feedback has been collected and evaluated, an assessment meeting is conducted to derive best practices and formulate lessons learned to inform future efforts. Ideally, the best practices and lessons learned should be stored in a centralized organizational repository, facilitating access and retrieval by managers of future projects.

Project Closeout ends with administrative closeout – providing feedback on Project Team members, updating the skills inventory, capturing key project metrics, and filing all pertinent project materials into the project repository.

**Project Management Lifecycle**

**Introduction**

There are two different lifecycles that work in conjunction with one another throughout the course of every project.

- The *project* lifecycle describes the processes and tasks that must be completed to produce a product or service. Different project lifecycles exist for specific products and services. (For example, the lifecycle followed to build a house is very different from the lifecycle followed to develop a software package.)
- The *project management* lifecycle defines how to manage a project. It will always be the same, regardless of the project lifecycle being employed.

One of a Project Manager’s challenges is to understand how to align the specific project lifecycle with the project management lifecycle. Project tasks and project management tasks are concurrent and ongoing, and can be associated by project management deliverables. The Project Schedule, for example, contains both project and project management tasks. The two lifecycles will overlap, depending upon the project lifecycle being employed. The Project Manager needs to be aware of how the inputs and outputs of one lifecycle affect and shape the other. The following diagram illustrates the five process groups and their processes in the project management lifecycle for Cornell Project Management Methodology (CPMM).
Cornell Project Management Methodology (CPMM) Guidebook
The Project Management Lifecycle

Project Initiation
- Develop Project Charter
- Evaluate Project Charter
- Select Projects

Project Planning (High Level)
- Prepare for the Project

Project Planning (Detail Level)
- Conduct Detail Planning Kick-off
- Develop Detail (Baseline) Project Schedule
- Perform Risk Assessment
- Refine Management Plans
- Confirm Approval to Proceed

Project Execution and Control
- Conduct Phase Kick-off
- Manage Triple Constraints
- Monitor and Control Risks
- Manage Project Execution
- Gain Project Acceptance

Project Closeout
- Conduct Post Implementation Review
- Perform Administrative Closeout

Archived Project Repository

Approved Project Charter
Approved PIP

Approved Baseline Project Plan (Detail Level)

Project Acceptance Form
The following diagram illustrates all of the processes and deliverables of Project Initiation in the context Roles:

- Project Sponsor or Director
- Proposal Team
**Purpose**

Before a project can proceed, a persuasive case must be made for its viability given current organizational priorities. In developing a Project Charter, the initial Business Case (business need) for the project is made, along with a Proposed Solution (project description). A Charter for a project may come from any place in the organization, but someone must be identified as the "owner" of the Charter, and must serve as Project Sponsor, at least through the evaluation and selection process. The Project Sponsor may be in executive management, in a specific functional program area, or be a representative of the Customers.

The purpose of the CPMM Project Charter is to formally authorize the start of a new project. Specifically, the charter is intended to authorize the sponsor to assign a project manager and to apply resources for the Project Planning (High Level) to develop a CPMM Project Initiation Plan (PIP). The CPMM Project Initiation Plan will provide the parameters for the project and includes: goals, objectives, success criteria, scope, stakeholder roles, risk plan, and other management plans for the project, along with resources needed and the project budget and benefits.

**Tasks Associated with Developing the Project Charter**

**1.1.1 Develop Business Case**

The Business Case is one of the defining documents of the project, providing information necessary to support the decision to launch the project at the end of Project Initiation and to continue the project in subsequent phases. The Business Case must identify an existing business need and lay the foundation for developing a potential solution to meet that need. The Business Case should provide a description of the project that includes the key goals and objectives, what the project will deliver, and any other high level expectations of the project. It should identify whether this is part of a larger project or if it has follow-on projects, and identify the customers and anticipated consumers of the project and why they will benefit from the project.

The cost and resources of Project Planning (High Level) for implementing the solution must be estimated. Justification for the potential project should also depend on whether the project is consistent with the organization’s strategic plan or in line with the business plan.

The Charter should identify special funding sources available for the proposed initiative and specifically for the Project Planning (High Level). If the project is going to span multiple budget cycles, a multi-year strategy for project funding should be discussed.

Before presenting the Charter for evaluation, the Project Sponsor should have the Business Case reviewed by the people most intimately familiar with its imperatives – Customer Decision-Makers.

The Business Case will continue to be a critical component of the decision-making process throughout the entire project management lifecycle – from the initial decision to proceed with the project to the decisions made at periodic project reviews to continue, modify, or terminate the project. At the end of each project management process and whenever there is a significant change to the project or the business function, the Business Case is reviewed and re-validated.

List and describe any sources for project funding. Are there grants that will be applied for? Are federal funds available? Is a charge-back to the Customer planned?
1.1.2 Develop Proposed Solution

A Proposed Solution starts with the summary of the **business need** (abstracted from the Business Case), defines the optimal solution to address that need, and describes how the solution fits into the organization’s business plan and/or strategic plan. The Proposed Solution should describe the end result of the project.

1.1.3 Describe Alternatives Considered

The proposed solution should include an evaluation of all **alternatives considered**, and a justification of the solution selected. It should also address what would happen if nothing was done.

In order to proceed to Project Planning (High Level) and the development of the Project Initiation Plan, please list any known factors (constraints) that limit the ultimate project’s execution. The most frequent constraint is the project end date. For each constraint listed, be sure to elaborate on how it limits the project and how the project would benefit from its removal. Identify any constraints that will affect the “Triple Constraints” of budget, schedule, and scope, or any other known constraints for this project, including resources. If there are no constraints, note that fact.

1.1.4 Develop Budget and Resources for Project Planning (High Level)

The **budget and resources** for Project Planning (High Level) is required in the Project Charter. This is the budget and resources required to develop the Project Initiation Plan.

Note: The Project Planning (High Level) budget and resources for the overall project along with ongoing costs will be developed during Project Planning (High Level) in the CPMM Project Initiation Plan (PIP) when and if the project receives authorization. However, if there are time and cost estimates for the overall project (expert judgment, availability of historical data on similar projects, Request for Information (RFI) responses, etc.), then they also should be documented in the Charter, along with the accuracy (for example, +/- 10%, +/- 50%, etc.) of the estimates.

1.1.5 Develop Project Governance

The Charter will include a **governance** chart that defines the management organization that will be in place for Project Planning (High Level) to produce the CPMM Project Initiation Plan.

The completed Project Charter will be presented for the evaluation and selection process.

1.2 Evaluate Project Charter

**Roles**

- Project Sponsor
- Project Selection Committee

**Purpose**

Many organizations generate multiple Charters for various new initiatives on a continuing basis; however, budgetary and other constraints allow only a fraction of those efforts to occur.
Choosing the right projects – those that support the organization’s mission and assist with the implementation of its strategic plan – becomes a crucial activity, starting with an objective evaluation of proposed initiatives.

The frequency of an organization’s evaluation/selection process may be dictated by many factors, including the size of the proposed projects, the vacillations of the budget cycle, and the occurrence of external mandates and internal imperatives.

The level of approvals needed may vary depending on whether the project exceeds defined thresholds. Thresholds may be based on cost, involvement of more than one functional area, project needs within or outside of standards and procedures, or other areas specific to the Performing Organization.

1.3 Select Project Charter

Once the decisions have been made, it is imperative to document them and to explain their rationale to the Project Sponsors and other Stakeholders. One of three outcomes can occur:

1. **A decision is made to proceed with the project.** In this case, a determination must be made when Project Planning (High Level) can begin. At that point a Project Manager must be assigned to the project. The funding source must be brought on board to ensure adequate funding for the project.

2. **A decision cannot be made on the project without some additional information.** In this case, the specific information required for an informed decision should be documented, and communicated to the Project Sponsor, along with some guidelines for submitting the Charter again in the next evaluation/selection cycle.

3. **A decision is made to decline the Charter.** In this case, a detailed explanation for the decision should accompany the message, outlining where the Charter came up short in the screening, evaluation, prioritization, and/or selection processes.

In all three cases, the Charter Signature page is updated and noted with the decision.

**Project Roles and Responsibilities**

There are many groups of people involved in both the project and project management lifecycles.

The **Project Team** is the group responsible for planning and executing the project. It consists of a Project Manager and a variable number of Project Team members, who are brought in to deliver their tasks according to the project schedule.

- The **Project Manager** is the person responsible for ensuring that the Project Team completes the project. The Project Manager develops the Project Plan with the team and manages the team’s performance of project tasks. It is also the responsibility of the Project Manager to secure acceptance and approval of deliverables from the Project Sponsor and Stakeholders. The Project Manager is responsible for communication, including status reporting, risk management, escalation of issues that cannot be resolved in the team, and, in general, making sure the project is delivered in budget, on schedule, and within scope.

- The **Project Team Members** are responsible for executing tasks and producing deliverables as outlined in the Project Plan and directed by the Project Manager, at whatever level of effort or participation has been defined for them.

- On larger projects, some Project Team members may serve as **Team Leads**, providing task and technical leadership, and sometimes maintaining a portion of the project plan.
The **Executive Sponsor** is a manager with demonstrable interest in the outcome of the project who is ultimately responsible for securing spending authority and resources for the project. Ideally, the Executive Sponsor should be the highest-ranking manager possible, in proportion to the project size and scope. The Executive Sponsor acts as a vocal and visible champion, legitimizes the project's goals and objectives, keeps abreast of major project activities, and is the ultimate decision-maker for the project. The Executive Sponsor provides support for the Project Sponsor and/or Project Director and Project Manager and has final approval of all scope changes, and signs off on approvals to proceed to each succeeding project phase. The Executive Sponsor may elect to delegate some of the above responsibilities to the Project Sponsor and/or Project Director.

The **Project Sponsor and/or Project Director** is a manager with demonstrable interest in the outcome of the project who is responsible for securing spending authority and resources for the project. The Project Sponsor acts as a vocal and visible champion, legitimizes the project’s goals and objectives, keeps abreast of major project activities, and is a decision-maker for the project. The Project Sponsor will participate in and/or lead project initiation; the development of the Project Charter. He or she will participate in project planning (high level) and the development of the Project Initiation Plan. The Project Sponsor provides support for the Project Manager; assists with major issues, problems, and policy conflicts; removes obstacles; is active in planning the scope; approves scope changes; signs off on major deliverables; and signs off on approvals to proceed to each succeeding project phase. The Project Sponsor generally chairs the steering committee on large projects. The Project Sponsor may elect to delegate any of the above responsibilities to other personnel either on or outside the Project Team.

The **Steering Committee** generally includes management representatives from the key organizations involved in the project oversight and control, and any other key stakeholder groups that have special interest in the outcome of the project. The Steering committee acts individually and collectively as a vocal and visible project champion throughout their representative organizations; generally they approve project deliverables, help resolve issues and policy decisions, approve scope changes, and provide direction and guidance to the project. Depending on how the project is organized, the steering committee can be involved in providing resources, assist in securing funding, act as liaisons to executive groups and sponsors, and fill other roles as defined by the project.

**Customers** comprise the business units that identified the need for the product or service the project will develop. Customers can be at all levels of an organization. Since it is frequently not feasible for all the Customers to be directly involved in the project, the following roles are identified:

- **Customer Representatives** are members of the Customer community who are identified and made available to the project for their subject matter expertise. Their responsibility is to accurately represent their business units' needs to the Project Team, and to validate the deliverables that describe the product or service that the project will produce. Customer Representatives are also expected to bring information about the project back to the Customer community. Towards the end of the project, Customer Representatives will test the product or service the project is developing, using and evaluating it while providing feedback to the Project Team.

- **Customer Decision-Makers** are those members of the Customer community who have been designated to make project decisions on behalf of major business units that will use, or will be affected by, the product or service the project will deliver. Customer Decision-Makers are responsible for achieving consensus of their business unit on project issues and outputs, and communicating it to the Project Manager. They attend project meetings as requested by the Project Manager, review and approve process deliverables,
and provide subject matter expertise to the Project Team. On some projects they may also serve as Customer Representatives or be part of the Steering Committee.

**Stakeholders** are all those groups, units, individuals, or organizations, internal or external to our organization, which are impacted by, or can impact, the outcomes of the project. This includes the Project Team, Sponsors, Steering Committee, Customers, and Customer co-workers who will be affected by the change in Customer work practices due to the new product or service; Customer managers affected by modified workflows or logistics; Customer correspondents affected by the quantity or quality of newly available information; and other similarly affected groups.

**Key Stakeholders** are a subset of Stakeholders who, if their support were to be withdrawn, would cause the project to fail.

**Vendors** are contracted to provide additional products or services the project will require and are another member of the Project Team.

The following examples illustrate how university roles map to project roles on small, medium, and large projects.

**Example 1 – Small Project Roles & Responsibilities**

**Project Description:**

This project’s overall goal is to enforce password complexity to secure NetID passwords.

<table>
<thead>
<tr>
<th>PROJECT ROLE</th>
<th>UNIVERSITY TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Sponsor</td>
<td>Director of Security</td>
</tr>
<tr>
<td>Project Director</td>
<td>Assistant Director of Identity Management</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Project Coordinator Identity Management</td>
</tr>
<tr>
<td>Team Members</td>
<td>Engineers, Training, Customer Support, Marketing</td>
</tr>
<tr>
<td>Customers</td>
<td>Security SIG Members</td>
</tr>
<tr>
<td>Customer Representatives</td>
<td>Security SIG Members</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>All of the above, plus IT Policy Director, Consultant Advisor for HR Records</td>
</tr>
</tbody>
</table>

**Example 2 – Medium-sized Project Roles & Responsibilities**

**Project Description:**

This project’s overall goal is to create a Project Management Consulting Practice that will develop and implement project management methodology and tools, and provide expertise, mentoring, and other learning experiences for CIT’s directors, supervisors and staff members who manage, or participate in, projects of varying size, scope, risk, and complexity.
### Example 3 – Large-sized Project Roles & Responsibilities

**Project Description:**

The overall goal of this project is to implement Student Records and Student Admissions modules of PeopleSoft Student Administrative Systems.

<table>
<thead>
<tr>
<th>PROJECT ROLE</th>
<th>UNIVERSITY TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Sponsor</td>
<td>Vice President, Student &amp; Academic Services</td>
</tr>
<tr>
<td></td>
<td>Vice President for Information Technologies</td>
</tr>
<tr>
<td>Project Sponsor/Directors</td>
<td>VP Student &amp; Academic Services</td>
</tr>
<tr>
<td></td>
<td>Associate Provost, Admissions &amp; Enrollment Office</td>
</tr>
<tr>
<td></td>
<td>Director, Information Systems</td>
</tr>
<tr>
<td>Steering Committee</td>
<td>Student Executive Steering Committee (representatives from the various undergraduate and graduate schools and colleges, and representatives from the performing organization).</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Senior Project Manager for Administrative Systems</td>
</tr>
<tr>
<td>Team Members</td>
<td>Team members can come from many areas of the University or they can be outside consultants. Some of the roles they will fill on the project are: Technical Managers (Leads) and Functional Mangers (Leads), program analysts, functional business analysts, subject matter experts, data delivery specialists, external consultants with in-depth knowledge of the product or process for implementation, campus readiness leaders, trainers, DBAs, testing team, infrastructure experts, middleware support, data administration, mainframe leads, self service leads, etc.</td>
</tr>
</tbody>
</table>
Scheduling Resources

Introduction

In this lesson we will learn about scheduling resources in projects. We will begin by discussing the nature of resource requirements (both people and machines) and the problems associated with managing resources in a project environment. Given the finite nature of resource availability, a project plan may have to be modified so that it is practical. This is the major thrust of resource planning and management. In this lesson, we will examine, at some length, the four major stages of the resource scheduling process. These stages are resource definition, resource allocation, resource aggregation, and resource leveling. Resource definition involves identifying the critical resources that need to be planned and managed for the successful completion of the project. In a multi-project environment as projects are competing for scarce resources, resource allocation addresses the problem of the optimum use and timing of the assignment of these resources to the various project activities. Resource aggregation involves determining the aggregate resources that will be needed, period by period, to complete all project activities. Having identified the necessary resource requirements, the last stage in the process is resource leveling. In this stage, we attempt to ensure that the demand for resources does not exceed availability. Specifically, demand for resources is smoothed to ensure that the peaks and valleys are reduced. In this lesson, we will also learn about the "critical chain approach" to tackle resource dependencies that occur in projects due to reduced slack. This lesson is a critical topic in project management as careful planning and management of resources can prevent cost over-runs in the future.

Objectives

After completing this lesson you should be able to:

- Describe the types of project constraints.
- Understand the nature of resource constraints.
- Explain the steps and issues involved in scheduling resources in a project environment.
- Explain the benefits of resource scheduling.

Project Constraints

In this lesson, we will discuss the essential features of resource planning and management in projects. We begin this lesson by first understanding the different kinds of project constraints, in particular, the types and nature of resource constraints.

The primary impact of project constraints is the likelihood of delaying the completion of the project. There are three types of project constraints: technological, resource and physical. The technological constraints relate to the sequence in which individual project activities must be completed. For example, in constructing a house, pouring the foundation must occur before building the frame. Resource constraints relate to the lack of adequate resources which may force parallel activities to be performed in sequence. The consequence of such a change in network relationships is delay in the completion date of the project. We will examine the nature of resource constraints in much greater detail in the next section. Physical constraints are caused by contractual or environmental conditions. For example, due to space limitations an activity such as painting a wall may have to be performed by only one person (Gray and Larson, 2003).
In general, from a scheduling perspective, projects can be classified as either time constrained or resource constrained. A project is classified as time constrained in situations where the critical path is delayed and the addition of resources can bring the project back on schedule and the project completed by the required date. However, the additional resource usage should be no more than what is absolutely necessary. The primary focus, for purposes of scheduling, in time constrained projects is resource utilization. On the other hand, a project is resource constrained if the level of resource availability cannot be exceeded. In those situations where resources are inadequate, project delay is acceptable, but the delay should be minimal. The focus of scheduling in these situations is to prioritize and allocate resources in such a manner that there is minimal project delay. However, it is also important to ensure that the resource limit is not exceeded and the technical relationships in the project network are not altered.

**Project Execution and Control**

**Measurements of Success**

The ultimate measurement of success for Project Execution and Control is the product acceptance by the Customer, and project acceptance by the Project Sponsor and/or Project Director.

Meanwhile, the Project Manager can still assess how successfully the project is proceeding through Project Execution and Control by utilizing the measurement criteria outlined below. Because the processes in Project Execution and Control (between Kick-off and Acceptance) are iterative, continuous and concurrent, the measurements for these processes need to be taken at regular intervals – probably coincidental with project status meetings. More than one "No" answer indicates a serious risk to the eventual success of your project.

<table>
<thead>
<tr>
<th>Process</th>
<th>Measurements of Success</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Project Execution and Control Kick-off</td>
<td>Did you receive confirmation from ALL Project Team members that they agree with their role descriptions, and that they understand and agree with the project objectives, risks, and timetables as recorded in the kick-off meeting notes?</td>
<td></td>
</tr>
<tr>
<td>Manage Triple Constraints</td>
<td>Do your team members agree that the estimates to complete for all open tasks are accurate?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Has your team implemented any &quot;lessons learned&quot; from either the peer review or the project audit process?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the Project Sponsor and/or Project Director aware of the latest forecast total for the project?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is your schedule current?</td>
<td></td>
</tr>
<tr>
<td>Monitor and Control Risks</td>
<td>Have you adjusted the risk priority level for any risks on the Risk Management Worksheet?</td>
<td></td>
</tr>
<tr>
<td>Manage Project Execution</td>
<td>Were all changes to the scope, schedule, cost or quality parameters of the project made with a signed Change Control Request?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have all deliverables been presented to</td>
<td></td>
</tr>
</tbody>
</table>
### Project Execution and Control

#### Risks & Ways to Avoid Pitfalls

Project Execution and Control is where the rubber meets the road. In the immortal words of Yoda, it's

"Do! Or do not! There is no try."

What are some of the key elements of Project Execution and Control that require the most attention? Not surprisingly, Project Execution and Control has the most pitfalls and the most areas for consideration. The following table identifies processes and tasks which have pitfalls highlighted in this section.

<table>
<thead>
<tr>
<th>Process</th>
<th>Task</th>
<th>Why is it important?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Constraints</td>
<td>Triple</td>
<td>Schedule slippage is the most visible sign of a project in trouble.</td>
</tr>
<tr>
<td>Manage Project Schedule</td>
<td>Manage</td>
<td>“That malfunctioning little #@?*!, this is all their fault.” Maybe, maybe not. But it’s still your responsibility to make sure the actual problem is fixed.</td>
</tr>
<tr>
<td>Manage Project Execution</td>
<td>Manage Issues</td>
<td></td>
</tr>
</tbody>
</table>
| Manage Acceptance of Deliverables | Project Planning
Dr. May G. Kassir/ assist Prof |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Don't be too proud of this technological terror you've constructed.&quot; Your product is only as good as your Customer thinks it is.</td>
<td></td>
</tr>
<tr>
<td>Execute Communications Plan</td>
<td></td>
</tr>
<tr>
<td>&quot;Don't get technical with me!&quot; Communicate with your Customers as you would have them communicate with you.</td>
<td></td>
</tr>
<tr>
<td>Manage Organizational Change / Manage Product Implementation and Transition</td>
<td></td>
</tr>
<tr>
<td>You may have created the most awesome product in the known universe, but what good is it if the organization is not ready to utilize it?</td>
<td></td>
</tr>
<tr>
<td>Manage the Project Team</td>
<td></td>
</tr>
<tr>
<td>&quot;Who's the more foolish... the fool or the fool who follows him?&quot; With some teams, it's hard to tell who's leading whom. Don't let that happen to you!</td>
<td></td>
</tr>
</tbody>
</table>
Summary

Start-up phase

Define project objectives and scope with project sponsor
Determine high-level timeline and key milestones
Prepare initial project budget
Select project team
Select outside consultants if required
Conduct team building and train project team
Identify senior stakeholders and members of project steering committee
Define communication protocols within project team

Planning phase

Prepare draft of project plan
Review project plan with primary sponsor
Finalize project plan
Schedule first steering committee meeting
Prepare executive-level presentation of project plan to steering committee
Review presentation with primary project sponsor
Present project plan to steering committee for approval

Research and data gathering phase

Define research and data gathering requirements
Assign research responsibilities to project team
Conduct current state "AS-IS" process analysis (high level only)
Conduct employee focus groups and manager interviews
Conduct customer focus groups and surveys
Benchmark competitors and similar non-competitors
Prepare research and data gathering reports
Prepare executive-level presentation for steering committee
Solution design phase

Conduct a detailed review of all research findings with project team

Define the guiding principles and concepts for the future state

Develop the future state “TO-BE” business processes and workflows (Level 1 and Level 2)

Create a functional needs document for systems and technology

Create technology requirements document for IT or for use in RFP’s (request for proposals)

Define required organization changes

Define new job roles and responsibilities

Prepare a draft of the solution design document

Review the solution design with the primary project sponsor

Finalize solution design document

Prepare an executive-level presentation for the steering committee

Present the solution to the steering committee

Business case and gap analysis phase

Conduct a gap analysis between the “AS-IS” processes and “TO-BE” processes

Determine estimated cost savings and revenue growth from new solution

Acquire bids and develop estimates for systems and technology

Estimate all implementation costs for project deployment

Prepare a business case for the new design

Compare business case results with initial project objectives to ensure alignment

Review the financial calculations with accounting or finance group

Review the business case results and financial assumptions with the primary project sponsor

Send the business case document to all steering committee members for review

Prepare an executive-level presentation of the business case
Solution development phase

Complete all process designs and work flows (Level 1 - Level 3)

Develop or purchase required systems and technology

Conduct trials of each solution component

Collect feedback from trial users and integrate into the design

Create detailed job descriptions

Review job descriptions with HR and Legal department

Develop a transition plan for the new solution

Define training requirements

Develop training curriculum and courseware

Develop job aids for employees

Define facility requirements and changes

Develop facilities transition plan

Prepare executive-level presentation of transition plan

Present transition plan to steering committee for approval

Solution implementation phase

Develop an issue tracking and control process

Train employees on new processes, systems and tools

Begin phased implementation of solution

Collect employee and manager feedback

Modify the solution design and transition plans based on feedback

Track and resolve issues during implementation

Prepare implementation progress report for steering committee

Measure process and system performance

Measure business outcomes and compare with project objectives

Make adjustments to the implementation to achieve desire business results

Prepare executive-level presentation of process, system and business results
Implement Quality Control

Quality control involves monitoring the project and its progress to determine if the quality standards defined during Project Planning are being implemented and whether the results meet the quality standards defined during Project Initiation. The entire organization has responsibilities relating to quality, but the primary responsibility for ensuring that the project follows its defined quality procedures ultimately belongs to the Project Manager. The following figure highlights the potential results of executing a project with poor quality compared to a project executed with high quality:

<table>
<thead>
<tr>
<th>Poor Quality</th>
<th>High Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased costs</td>
<td>Lower costs</td>
</tr>
<tr>
<td>Low morale</td>
<td>Happy, productive Project Team</td>
</tr>
<tr>
<td>Low satisfaction</td>
<td>Delivery of what the Customer wants</td>
</tr>
<tr>
<td>Increased risk</td>
<td>Lower risk</td>
</tr>
</tbody>
</table>

Quality control should be performed throughout the course of the project. Some of the activities and processes that can be used to monitor the quality of deliverables, determine if project results comply with quality standards, and identify ways to improve unsatisfactory performance, are described below. The Project Manager and Project Sponsor and / or Project Director should decide which are best to implement in their specific project environment.