# Art and Science of Project Management

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*Completing a project successfully requires far more than a handful of meetings and a checklist. Project management is a process in itself—one that can ensure a positive outcome. Learn more from our expert.*

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Anyone who has ever sat in traffic due to road construction or witnessed the slow progress of a home renovation can appreciate the value of a project completed correctly and on time. Indeed, projects that are millions of dollars over budget and several years behind schedule often make headlines. How does this happen? It is safe to say there was a breakdown in the project management process at some point.

The project management process comprises several activities: definition, planning, tracking, control, scope management, and communication. Too often more emphasis is placed on one or two of the processes (usually the definition and planning phases) while the others are shortchanged. Each activity must be given the proper attention or your project will risk being the next headline. In this article, we'll review the components of the project management process and ways to avoid common pitfalls.

## Start with a Definition

When a problem is identified and an apparent solution offered, the proposed solution often turns into a project. During the project definition phase, the sponsor and stakeholders must come to a shared understanding of the project characteristics. In other words, the project manager must set the project expectations.

A definition document, usually called the project charter, business plan, or statement of work, is used to clearly identify these expectations. While different terminology may be used to describe them, there are three components in a project definition:

- **scope**: the deliverables to be produced
- **cost**: the work and material resources required to complete the deliverables
- **schedule**: the length of time to complete the project

These three variables have a mathematical relationship with each other. If one component changes, one of the two remaining components also must change. While this may seem obvious, it's not uncommon for project leaders or participants to ignore this effect, resulting in poor quality, project team burnout, and project failure.

The document must clearly and completely describe the scope of the project. The following items should be included:

- **Objectives**: These are the goals and success factors for the project. Whenever possible, the objectives should be measurable targets. Without measurable targets, stakeholders will have different interpretations resulting in different expectations
- **Deliverables**: These are the tangible work products produced by the project. The description of the deliverable should be as specific as possible. For example, if you are proposing an interface as part of a software implementation, there is a vast difference between the work effort needed for a one-way interface and a two-way interface, as well as a difference between a batch and real-time interface
- **Assumptions and constraints**: Assumptions are presumed answers to unknown questions and constraints are other influencing factors. Tasks, resource requirements, and schedule estimates are based on these assumptions and constraints. Changes after the project begins will most likely necessitate a modification in the scope, cost, or schedule variables

- **Roles and responsibilities**: In addition to defining the decision-making structure for the project, it is important to identify and obtain commitment for the required resources
- **Estimated schedule and cost**: During the definition phase, the schedule and cost is a high-level estimate and its accuracy depends on previous experience with similar projects. However, it is good to set an expectation. Is it a three-month project or a 12-month project? Is the expected cost $300,000 or $1,000,000?

Without well-defined project objectives, deliverables, and assumptions, it will be impossible for the project manager to identify project variance and manage scope changes.

## The Best-laid Plans

The planning process begins after the project has been approved. During this phase, the tasks, resources, work effort, and duration required to complete the project are identified. The output from the planning phase is a project plan. It is best to develop this plan using a project management software scheduling tool because it can enable calculations in work and schedule that are difficult to do if the plan is created using a spreadsheet program.

This phase can be quite tedious and some stakeholders wonder why no progress has been made. While there may be a desire to rush through this process, HIM professionals are well aware of the consequences of poor planning.

After the initial planning is complete, the project plan represents a schedule with no room for error. Therefore, the project manager should also perform a risk assessment to identify potential problems that could result in an increase in the estimated work effort or duration. Then, contingency plans are developed for the risks that are assessed to have the highest probability and greatest impact. These contingency plans are translated into work effort and duration estimates and are added to the project plan.

After the detailed planning has been completed, a more realistic cost and schedule has been calculated. If these new estimates vary greatly from the definition phase, it is imperative to present this information to the sponsor and stakeholders for approval.

## Keep on Tracking

The project manager must keep track of how the project is progressing against the estimates made during the planning phase. To do this, actual progress on each task is collected from the project team members. Unfortunately, this is another tedious process that is often met with resistance from the team members. False progress may be reported if the actual work effort or duration is more than originally estimated, because this could be interpreted as poor performance. Certainly there may be instances of inadequate performance on a project, but usually this is not the reason for the variance. The original estimates may have been based on a lack of information, assumptions may change, or outside factors may intervene. The project manager must be clear about the intent of collecting the actual progress information.

## The Scope May Change

Actual progress is collected to identify where the project is not meeting the cost and schedule estimates; that is, variance from the project plan. At this point in the project, there will also be proposed changes to the project scope. Even with a well-defined and well-planned project, scope changes and variances are inevitable and should not be construed as a sign of project failure. However, project failure can occur when the project manager does not identify the effect on the project and does not obtain sponsor and stakeholder approval for proposed solutions. Based on the identified success factors for the project, the sponsor and stakeholders must make the tough decision to change one of the variables that define the scope, cost, or schedule.

A project completed on time and under budget is frequently considered a success. However, project success is actually more complex. For example, a software system with an inefficient workflow will not, in the eyes of system users, be considered successful. In some situations, the stakeholders may agree to increase the project budget or lengthen the schedule to meet other project objectives. As a result, project control consists of being fully aware of the changes that are occurring in the project and obtaining consensus for appropriate action.

## Communication Is Key

The communication process occurs throughout the project. It begins with the definition document and continues through the project execution phases to include:

- project kick-off meeting
- status reports
- status meetings
- issue log
- project plan
- final project report

In addition to formal reporting via status reports and meetings, it is a good idea for the project manager to establish a rapport with the team members to allow for informal communication. A team member may feel reluctant to report sensitive topics in a written form and may feel more comfortable providing this message in a confidential setting.

The cornerstones of sound project management practices are setting and managing expectations. When there is agreement on what the project will deliver and no room for different interpretations, then final outcomes can be easily measured against expectations. There is agreement on the project achievements and accomplishments and therefore on the success of the project.

## Real Progress, Real Success

Use the following strategies to boost your potential for success:

**Turn big projects into small ones**: If possible, break down a large project into smaller projects. If a project is more than a year in duration, there is a higher probability that more scope changes will occur due to operational changes and external influences

**Make team members decision makers**: If the team members can't make decisions for the area they represent, meetings become ineffective and the tasks begin to drag out

**Don't overlook project management responsibilities**: The project sponsor must acknowledge the importance of the project management role by including the management tasks in the project plan and assigning a dedicated resource to the required hours. If one of the team members is designated as the project manager, it is inevitable that deliverables-based task responsibilities will take precedence and the project management duties will fall by the wayside

**Create and conceal contingency plans**: There are two options for adding work and duration contingency to the plan. One method is to increase the duration of each task by a certain percentage. However, because procrastination is common, there is a tendency for the allotted estimates to become the actual effort or duration expended, even though the risk was not realized. Instead, add separate tasks to the plan, essentially providing a "bucket" of hours and duration. This technique provides the project manager with more control over dispersing the contingency

**Manage the critical path**: If the organization is interested in shortening the duration of the project, the project manager should assess ways to decrease the duration of critical path tasks. The project manager must also ensure that the completion of critical path tasks are not delayed, because this will delay the project finish date. However, monitoring these tasks should not be at the expense of non-critical tasks. It sometimes only takes a few days for a non-critical task to become critical

**Determine *accurate* actual progress**: The simplest way to determine actual progress is for each team member to report a task completion percentage. However, this is also the most inaccurate method. There is a common project management adage that tasks often rapidly progress to 90 percent complete and then remain there for several weeks. The optimum information needed to accurately track progress includes:

- actual start date or new estimated start date (if the task is behind schedule)
- actual work
- estimated remaining work
- actual finish date or new estimated finish date (if the task is not complete)
- any fixed costs

## A Primer on Project Management

**Critical path**: the tasks that determine the project finish date. A change in the start date, finish date, or duration of a critical path task will result in a change in the overall project finish date

**Project network/schedule**: the project network determines the project start and finish dates based on the task duration and task dependency relationships

**Sponsor**: the individual within the organization who has the greatest interest in and ultimate responsibility for the successful completion of the project

**Stakeholder**: any individual who has an interest in or is affected by the results of the project

**Work breakdown structure**: a task outline structure that represents the activities required to produce the project deliverables

**Work effort versus duration**: the work effort is the number of hours required to complete a task while the duration is the calendar days over which the work effort will be expended

**Task dependency**: the relationship between two tasks indicating how the start or finish date of one task affects the start or finish of the second task

## Online Resources

Visit the following Web sites for more information on project management:

**allPM**: www.allpm.com
**Gantthead**: www.gantthead.com
**Project Management Institute**: www.pmi.org
**ProjectConnections**: www.projectconnections.com
**PMFORUM**: www.pmforum.org

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