

Introduction to Project Management

What is a Project?

According to the Project Management Institute, a project is *a temporary endeavor undertaken to create a unique product, service or result.*

The Princeton University Project Office says a project *will deliver business and/or technical objectives, is made up of defined processes and tasks, will run for a set period of time, and has a budget for resources and money.*

Projects differ from normal business operations in that projects are temporary, while normal business operations are ongoing.

Some things that could be considered projects:

- Building a new office
- Remodeling an existing office
- Creating and launching a new spacecraft
- Designing, testing, and marketing a new toy
- Redesigning a company's website
- Installing a new computer network

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What is a Successful Project?

Each organization can develop its own measures for project success. For an individual project, the requesters and team can negotiate specific measures of success for that project.

The Princeton University Project Office calls a project successful when they have:

- A delighted client (requester)
- Delivered the agreed objectives
- Met an agreed budget for dollars and resources
- Met an agreed timeframe
- Done it all professionally without killing the team

Graduate students at the University of Virginia have evaluated 72 projects at 57 organizations using the following success measures:

- Did the project come in on schedule?
- Did the project come in according to budget?
- Did the project result in a product of acceptable quality and meet other product-related specifications?
- Were the project's resultant products/services used by its intended constituents?
- Did the project increase stakeholder knowledge and better prepare the organization for future challenges?
- Did the project lead directly to the organization's improved efficiency or effectiveness?

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Project Management Vocabulary

Budget. The amount of dollars and other resources allocated to a project

Business Case. The reason or justification for doing a project

Change Control. The process of managing changes to scope, schedule, and budget

Closing. Describes the time at the end of a project phase or entire project when the results are approved and the phase or project is considered finished

Constraint. A restriction or limitation that affects a project, such as a limited amount of time, dollars, or personnel

Deliverable. An item produced during the life of a project on the way to completion

Dependency. A relationship between two or more tasks

Executing. Performing the tasks agreed upon during the planning phase

Gantt Chart. A bar chart that shows the projects tasks arranged in time order and how the tasks are related

Initiating. Starting a project or phase of a project and allowing the project manager to spend time and money on the project or phase

Kick-Off Meeting. A meeting that serves as the formal start to a project

Metrics. Numbers used to manage a project (such as the number of tasks behind schedule)

Milestone. An important event in the life of a project (such as the end of a phase, or the delivery of a completed task)

Phase. A period of time in the life of a project. Most projects go through several phases.

Methodology. An established way of doing projects. There are many popular project methodologies such as Prince2, PMI, and Princeton.

Project. A temporary endeavor undertaken to create a unique product, service or result. Projects are undertaken by a team, are made up of defined processes and tasks, and have a budget for resources and money.

Project Manager. The person responsible and accountable for managing a project

Risks. Events that might take place and affect the project. Can be negative such as a vendor missing a delivery, or positive such as the early completion of a task

Scope. A detailed description of exactly what will be done during the project and what will not be done

Scope Creep. The unplanned expansion of a project into areas not included in the plans

Sponsor. An executive who will support the project and help ensure its success

Stakeholder. Anyone interested the success of a project

Work Breakdown Structure (WBS). A project task list that shows tasks separated into related groups

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Why Projects Fail

According to a recent study by the Gartner Group, 30% of information technology projects never come to a fruitful conclusion. On average, 51% exceed budget by 189% while only delivering 74% of the originally-stated functionality.

A quick search of Internet will turn up dozens of websites listing reasons projects fail or are not completely successful. Your organization may face some of the following challenges.

- Problems related to the style or method of managing the project
- A scope that is nonexistent, unclear, unagreed to, or misunderstood
- A scope that changes throughout the project
- Insufficient planning
- Inadequate risk analysis and mitigation
- Poor communication
- Insufficient funding or funding that is promised but doesn't materialize
- Lack of commitment and responsibility by stakeholders
- Project not compatible with organization's strategies
- Incorrect staffing
- Project delivery dates that are too aggressive

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Sample Project Management Methodology

A project is a temporary endeavor, having a defined beginning and end, constrained by cost, time, and scope, undertaken to meet particular goals and objectives, usually to bring about beneficial change or added value. The temporary nature of projects stands in contrast to business as usual, which is repetitive, permanent or semi-permanent functional work to produce products or services. In practice, the management of these two systems is often found to be quite different, and as such requires the development of distinct technical skills and the adoption of separate management. Below is a methodology that works well for projects to help ensure they are completed on time, on budget, and to specifications.

Phase I: Discussion

Stakeholders explore ideas, gather information, and consider alternatives. When all discussions are complete, they determine whether to move on to the planning phase or abandon the ideas.

Phase II: Planning

A project manager is assigned, a team is assembled, and meetings are held to create a project plan.

Possible team members

- Project Manager: organizes and leads the team to a successful project conclusion
- Requester: the person who initiated the idea and who has important input
- Executive sponsor: an interested high-level stakeholder who has agreed to help
- Other stakeholders: faculty, staff, or students interested in the project's success who can help
- Vendors: people from manufacturers or service providers who are contracted to help

Sections of the project plan:

- Executive summary: 1-2 sentences that capture the essence of the project
- Business rationale: how the project will help the school
- Outcomes: what this project will achieve
- Scope: exactly what the project includes and excludes
- Resources: all items that will be used or purchased, and how they will be acquired
- Timeline: chronological list of every action that needs to be taken (including testing and training)
- Budget: analysis showing the full financial impact of the project (may include R.O.I., etc.)
- Risk analysis: description of all relevant risks and how they will be addressed
- Links to other processes: how the project relates to action plans, budgets, POs, CERs, etc.
- Communications: who needs what information, how they will get it, and when

Phase III: Approval

The project plan is reviewed and approved by the appropriate individuals or groups. Depending on the scope and financial impact, the project may require approval from the requester, certain department managers, the CFO, the President, or some combination of people and groups. If all necessary approvals are not gained, the project may be cancelled, or may return to the planning phase.

Phase IV: Execution

The project manager coordinates the activities of the team according to the approved plan. Rarely, changes to the plan may be made to react to events beyond the team's control.

Phase V: Closing

All closeout documentation is completed, and a wrap-up meeting is held to learn from the project. Lessons learned may lead to changes to improve future projects.

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Project Management Maturity Model

Many organizations go through a painful evolution from managing projects by the “seat of the pants” to using current best practices in project management. A survey by PM Solutions of 81 project managers found that improving the level of project management maturity results in significant performance benefits, especially in customer satisfaction.

The table below will help determine where your organization falls in this evolution.

Level 1: Initial Process	Projects may be run informally with no standard process or tracking system.
Level 2: Repeatable Process	Each project is run with its own processes and procedures to a minimum specified standard. There may be limited consistency or co-ordination between projects.
Level 3: Defined Process	The organization has its own centrally controlled project processes, and individual projects can flex within these processes to suit the particular project.
Level 4: Managed Process	The organization obtains and retains specific measurements on its project management performance and runs a quality management organization to better predict future performance.
Level 5: Optimized Process	The organization runs continuous process improvement with active problem and technology management for projects in order to improve its ability to depict performance over time and optimize processes.

Almost 90% of organizations are at Level 1 or Level 2. Overall project management maturity grew by 26% from 2001 to 2006, and the biggest improvements were in risk management.

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For Further Reading

<http://www.pmi.org>

Website of the Project Management Institute, the world's largest organization for professional project managers. Their online bookstore sells a variety of project-related materials, including the popular PMBOK.

<http://www.prince2.com>

Overview and resources related to the Prince2 project methodology used extensively in the U.K.

<http://www.princeton.edu/ppo>

Website of the Princeton University Project Management Office. Includes a free PowerPoint presentation describing project management and their methodology.

http://www.angotti.com/docs/step_by_step.pdf

A step-by-step approach for planning a small project by Dohn Kissinger of Profit Solutions.

<http://www.ogc.gov.uk/documents/p3m3.pdf>

Information on project management maturity from the British government. Provides details on each level of maturity and how to implement it at your organization.

<http://www.maxwideman.com/pmglossary>

Wideman Comparative Glossary of Common Project Management Terms. Contains hundreds of definitions for common PM terms.