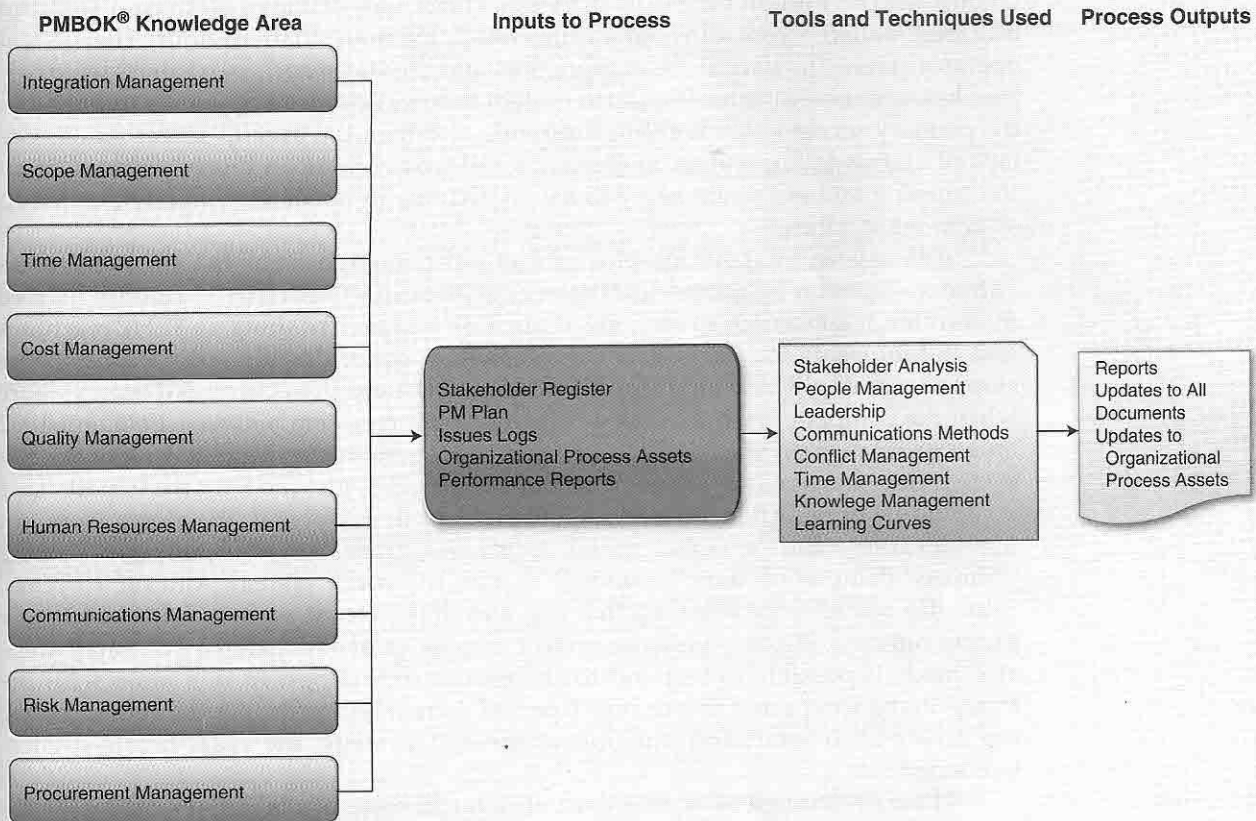


Project Success



For projects to be successful, project strategy, project leadership, project management, and good communications are essential.

Learning Objectives

After reading this chapter, you will be able to:

- Discuss various project success variables
- Discuss success variables for customers, organizations, the project manager, and the project team
- Communicate effectively
- Understand the intricacies of people management
- Understand knowledge management in projects
- Understand learning curves and how they can be used in project success

On January 28, 1986, the Challenger space shuttle blew up 73 seconds after launch. The casualties included seven lives and \$3 billion worth of equipment. The failure was due to a faulty sealing system, which allowed the exhaust flames from the solid-fuel rocket boosters (SRBs) to vent directly on the external tank, rupturing the tank and causing the explosion. The Roger Commission identified a breakdown in project communication as a contributing factor in the Challenger accident. The important information from Thiokol engineering regarding the SRBs did not find its way to the appropriate people at NASA who were in charge of the launch.

On August 14, 2003, the Northeast Blackout, a massive widespread power outage, occurred throughout parts of the Northeastern and Midwestern United States and Ontario, Canada. The blackout affected an estimated 10 million people in Ontario and 45 million people in eight U.S. states. One of the causes was a software bug that stalled a control room alarm system for more than an hour. The system operators were unaware of the malfunction, and the audio and visual alerts were neither heard nor seen. After the alarm system failure, unprocessed events queued up, the primary server failed within 30 minutes, and then the backup server failed. The lack of alarms led operators to dismiss a call from American Electric Power about the tripping and enclosure of a 345 kV shared line in northeast Ohio, which led to system-wide failure.¹

A four-year, \$100 million-plus project was being rebuilt by the air-travel reservation system run by Sabre Holdings Corp. The old system had 10 million lines of mainframe assembly language code. Using C++ and Java running on 17 HP machines and 45 Linux servers, the project was working successfully, but only because Sabre stopped running it as a big IT project. Some of the old projects attempted by Sabre when the company tried to overhaul its reservation system between 1988 and 1992 failed miserably. At that time, the project managers in the organization broke the system into manageable pieces to be built in parallel, just the way the experts said it should be done. After three and a half years of development, the pieces were put together into a finished system that didn't work well. A few weeks ahead of the promised completion date, Sabre had to junk the entire system. And for 10 years, Sabre did not attempt anything that big, and in the recent project, Sabre used agile programming and completed the project as a series of small steps. The small steps also made it possible to respond to changes in technology. In this project, all the things that are expected from a big IT project were missing: the grand, detailed plan; the divide-at-the-start-and-integrate-at-the-end strategy; the years-before-it-goes-live schedule.²

There are innumerable examples of failures; some of the famous ones are provided in Table 12-1.

Of course, projects do succeed. Successful projects have many criteria, factors, and variables in common. Table 12-2 illustrates several projects that were completed successfully.

We saw in Chapter 1 six criteria for project success: scope, cost, time, resources, performance, and value. No doubt, controlling these criteria is a necessary to a project's success. The project controls need to be in place during the progress and execution of projects. There are many other variables that also lend themselves to successful projects and are the foundation of project success; they are illustrated in Figure 1-3. For projects to be successful, the foundation is project strategy, project leadership, and project management. Project leadership and project management in projects are essentially the art and science of management that include various cultural, environmental, organizational, and personal variables. We will discuss such organizational, leadership, and project management variables in this chapter.

TABLE 12-1 Famous Project Failures

Name	Year	Probable Cause of Failure
Mars Polar Lander	2000	Failure of middle management
Hershey ERP Implementation	1999	Lack of training, mismanagement
Motorola, Iridium	1999	Misjudged competition and wrong technology
Ariane 5 Missile	1996	Incorrect reuse of software, faulty scaling up
Superconducting Supercollider	1995	Cost overruns, failure to maintain public support
Denver Baggage Handling System	1993	Poor project management, complex technology
Hubble Space Telescope	1990	Lack of system testing
GE Rotary Compressor Refrigerator	1986	Inadequate testing of new technology
Chernobyl Nuclear Power Plant	1986	Bad design, bad risk management, cost cutting
IBM PC	1983	Failure to discover customer needs
War in Vietnam	1967–72	Scope problem, micromanagement
Edsel Automobile	1958	Failure to discover customer needs
Titanic	1912	Poor quality control

TABLE 12-2 Famous Successful Projects

Name	Year	Probable Cause of Success
Several Successful Products, Buildings, Systems	1980-present	Good project management practices
The Shuttle Project (NASA)	1981	Value; technology innovation; planning and execution
Project Apollo (NASA)	1969	Value; technology innovation; planning and execution
Project Mercury (NASA)	1962	Value; technology innovation; planning and execution
Mt. Rushmore	1941	Project leadership, unique value
Hoover Dam	1935	Engineering; Organizational and political skills of project champion
TVA (Tennessee Valley Authority)	1933	Value; planning and execution
Empire State Building	1931	Competitive nature; Great planning
Model T Ford	1908	Combination of innovation, quality, and re-invention of manufacturing process
Waldorf Astoria Hotel	1897	Understanding of customers and market

PROJECT SUCCESS VARIABLES IN PROJECT PROCESSES

As discussed in Chapter 2, there are nine project knowledge areas in PMBOK knowledge areas. Each one of these knowledge areas contains many activities, and the success of a project depends heavily on the successful implementation of these activities and their processes. In this section, let us discuss some of the success factors as seen from a knowledge areas point of view.

Integration Management

One of the major problems with project success is a lack of clear project definition. The project definitions and all other project documents need to be revised periodically to reflect any changes that may have been made. Such revisions need to be managed with version control to maintain the changing baseline document. The knowledge in process assets needs to be validated and verified periodically to ensure accuracy so that it may be used by other projects.

Scope Management

The scope of a project has to be accurate and elaborate with no ambiguity. Poor scope definition and underestimation of the complexity of projects and their interdependency with other projects or with existing services or products causes projects to fail. Scope creep, or changes in scope as a project progresses, is a sign of customer, user, or sponsor dissatisfaction. This may be avoided by understanding the position of the stakeholders, holding regular meetings, and involving customers and users during project execution.

Time or Schedule Management

A failure to identify and define all the activities required for a project as well as not scheduling them with enough time to complete activities will make it very difficult to meet the project deliverables on time. The resulting delays can cause increasing anxiety in the sponsors, which can result in the termination of a project. Moreover, if activities are poorly scheduled, bottlenecks can be created as human resources are unevenly loaded into the project schedule, thus creating stress and inefficiencies during the progress of a project. The schedule needs to be modified constantly, monitored, and controlled. The time taken to meet the activities has to be regularly recorded and monitored. The schedules have to be regularly reported to stakeholders.

Cost Management

Budgets have to be properly taken into account in a project for budgeting and estimation purposes. The project costs have to be properly recorded and communicated with stakeholders. Costs have to be monitored and controlled until financial closure. Improper and inadequate costing of projects during planning may mean early termination due to lack of money. Even if a project is correctly budgeted, proper care needs to be taken to ensure that there are no abnormal cash outflow issues like not spending wisely and carefully.

Quality Management

All projects call for regular quality checks, quality assurance tests, and remedial actions. The quality requirements of the project have to be seriously pursued by all team members in order to gain satisfaction from customers and users.

Human Resource Management

A well-trained and well-respected project manager with proper authority and accountability surrounded by skilled, reliable, responsible, and trained team members can make a project successful. Understaffing, poor planning, poor execution, lack of teamwork, lack of motivation, lack of direction, poor or no common goals, or vague responsibilities will mean project failure.

Communication Management

There needs to be very good communication between the project manager, the team members, the project champion, and all other stakeholders. Open, honest communications elevate the project team participation and the performance that eventually leads to project success. The people skills and interpersonal skills displayed by a project manager play an important role as well. Regular meetings and reports will open up communications to ensure that all stakeholders are working toward project success.

Risk Management

Risks needs to be evaluated from the beginning of a project and continue to be monitored throughout the project progress. All risks need to analyzed, evaluated, monitored, controlled, and managed for mitigation.

Procurement Management

The procurement process needs to be managed well in order for projects to be on schedule. Planning ahead and well to purchase equipment with long lead times will facilitate keeping up project schedule. Audits need to be performed at the end of the project.

PROJECT SUCCESS VARIABLES IN PROJECT ORGANIZATIONS

The dynamics of a project revolve around an organization and its executives, its project teams, its project managers, and even its customers. Each one of these elements in a project plays a major part in the success of the project. Project success can be measured by how certain activities are efficiently and effectively accomplished. These activities may be thought of as activity-based variables and are discussed in this section.

Success Variables for Project Manager

One of the important project elements is a project manager, who is selected by the upper-level executives of an organization. (The selection process for a project manager is detailed in Chapter 4.) The selected project manager has certain authority and accountability and needs to exhibit reliability and responsibility in the success of a project. Project success variables that can be measured as actions of a project manager are as follows:

- Have a clear understanding of strategic goals of the project and the organization;
- Select key project team members with proven track records;
- Use authority with responsibility and accountability;
- Be reliable;
- Maintain great relationships with stakeholders and team;
- Enhance the public image of the project;
- Involve team members in decision making and problem solving;
- Develop realistic cost, schedule, performance, and value goals;
- Develop and maintain backup plans in case of potential problems;

- Organize a flexible structure with the right mixture of authority and accountability;
- Leverage existing processes;
- Use all possible project management tools;
- Plan an exit strategy of team members, knowledge gained, and other resources early in the project;
- Show and practice appropriate business skills;
- Use effective communication skills;
- Be responsive;
- Be results-oriented;
- Possess adequate technology skills;
- Understand and manage risks by using proper risk mitigation techniques;
- Design well-defined requirements and specifications;
- Understand the scope of the project and keep that scope in mind throughout project execution;
- Have realistic expectations and timeframe;
- Have clear business objectives;
- Institute, evaluate, measure, and achieve clear performance metrics;
- Always think of “value-adds” in projects;
- Focus on performance measures; and
- Control all six success factors during project execution: scope and scope creep, schedule, budget and cost, resources, performance, and value.

Success Variables for Executive Champions and Organizations

Successful projects are important for an organization because they bring a beneficial change to that organization. In general, successful projects can lead directly to improved competitiveness. Some restructuring and merger projects in organizations lead to increased shareholder value as well. In all organizations, including consulting, IT, construction, engineering, high-tech, and research, successful projects lead to better revenues and profits. Successful new product development projects enhance competitive positions and growth in profits.

Organizational commitment, especially commitment from top management, is a critical factor in project success. This commitment needs to be shown by top management with a strong leadership position, total commitment to complete the project, and participation in meetings to understand the progress made. Top-level management input is valuable and critical to the success of the project as well. Someone from the top management needs to be a champion of the project, a “go-to” person, someone who can solve internal problems for the project team. This top person needs to support the cost of the project, be accountable for payback, and be the spokesperson for the project to upper management and all stakeholders. The upper management needs to grant the selected project manager a degree of authority and accountability. The project manager needs to reciprocate with responsibility and reliability toward project success. Project success variables that can be measured as actions of executives, champions, or sponsors of a project are as follows:

- Have a clear understanding of strategic goals of the project and the organization;
- Provide adequate training and education;
- Coordinate all efforts;
- Maintain organizational structure flexibility;
- Adapt to change;
- Align project strategy to organizational strategy;
- Prompt response;
- Accurate communications;

- Reward success tied to authority, responsibility, accountability, reliability, and performance;
- Select the right project manager with proven track record of technical skills, personal skills, and administrative skills;
- Delegate needed authority to project managers and surround them with the right team members with good track records;
- Show enthusiasm and commitment to the project and team;
- Maintain great relationships with stakeholders and team;
- Be realistic regarding schedules;
- Have a realistic budget in mind;
- Understand the scope of the project;
- Be optimistic but avoid over-optimism;
- Avoid “buy-in,” i.e. submitting an offer substantially below estimated costs in the hope of escalating the price after award of the contract or recovering losses from subsequent contracts;
- Allow plenty of time for planning;
- Plan an exit strategy of team members, knowledge gained, and other resources early during the project,
- Resolve authority conflicts;
- Help project team to involve end-users;
- Provide executive support and commitment;
- Champion standardization of software and hardware;
- Be accountable;
- Understand risks and help the project team to mitigate such risks;
- Facilitate agreement among stakeholders;
- Manage processes in place; and
- Have a clear vision of projects and deadlines.

Success Variables for Customers

Customers need to feel that their projects are successful. An organization needs to spend time with its customers to understand their needs and requirements. The project managers in an organization and their teams need to be in continuous touch with their customers and apprise them of all success, risk, and failure situations. Successful projects involve customers from the beginning and maintain their interest until the end. The involvement of customers in projects can significantly improve product concepts.³ Many projects such as Ford’s Edsel, IBM’s Future Systems project, and the supersonic transport were planned well but failed due to customer non-involvement.⁴ Customers need to be involved beyond merely providing project requirements. Frequent and intimate communications with customers provides project teams with new and diverse viewpoints and a better understanding of current and future customer needs.⁵ With constant customer involvement and project information made available, decisions can be made with the presence and involvement of customers. The technology transfer becomes easy as customers involve themselves with all the aspects of their project. Active participation in various aspects of project development will give customers more exposure and knowledge about their project, which will help them develop a favorable perception of the project and pride in being a part of a new organizational change.⁶ The following success variables pertain to customer actions:

- Have a clear understanding of strategic goals of the project;
- Honest and reasonable goals and expectations;
- Honest and constructive feedback;
- Good communications with project team;

- Involvement with project team on key decisions and through execution of projects;
- Support project team;
- Adequate funding to complete project;
- Make prompt decisions and work with project team to avoid unnecessary delays;
- Understand project scope well ahead and maintain scope (phases if necessary);
- Avoid unnecessary reports and encourage prompt, reliable, and accurate reports;
- Understand reports, implications, and risks;
- Reject "buy-in," i.e., submitting an offer substantially below estimated costs in the hope of escalating the price after award of the contract or recovering losses from subsequent contracts; and
- Plan an exit strategy of team members, knowledge gained, and other resources early during the project.

Success Variables for Project Team

Projects tend to be a cooperative effort between organizations, their project managers, their customers, and their project team. All these entities need to employ the proper managerial techniques to ensure the smooth operations of a project. The complexity of a project increases the demand for the collaborative effort of the project team and its organization. Because projects tend to demand a lot of different knowledge and skills on different subjects, project teams have to be skilled and accomplished to implement a project. They need to know the success factors of a project, including:

- Have a clear understanding of strategic goals of the project and the organization;
- Know the technology and possess needed skills to complete the project;
- Keep abreast of the latest developments in the project and subject areas and be trained well in those areas;
- Be committed to successfully completing a project;
- Understand proper authority;
- Be responsible for their actions;
- Have accountability in the project;
- Be reliable;
- Possess proper communications skills and be prepared to provide accurate reports;
- Understand project risks;
- Contribute well in project meetings and share knowledge;
- Be prepared to express their feelings;
- Fully support all decisions made by the team;
- Trust one another in the team;
- Show creativity and address problems as a team effort; and
- Focus on performance measures.

MANAGER

Managers are concerned about how work is completed and try to get people to work together and perform better.

LEADER

Leaders try to get people to agree about the most important things to be done and value flexibility, innovation, and adaptation.

PEOPLE MANAGEMENT AND LEADERSHIP

Managing people, leadership, and effective communications are skills that enhance project management and hence lead to project success. These skills also include managing assigned human resources and resolving conflicts between them. The project managers in an organization may or may not have subordinates, but they still have to exhibit managerial and leadership traits and skills.

There is some controversy over the difference between a manager and a leader. A person can be a manager without leading or be a leader without managing. Managers are concerned about how work is completed and try to get people to work together and perform better. Leaders try to get people to agree about the most important things to be done and value flexibility, innovation, and adaptation. However, most scholars agree