About this research note:

Technology Insight notes describe emerging technologies, tools, or processes as well as analyze the tactical and strategic impact they will have on the enterprise.

Project Management: Back to Basics

Publish Date: May 1, 2008

IT Projects are characterized by changing technologies, uncertainty, and shifting business needs and objectives. Review core project management basics and increase the chances for ongoing IT project success.

INFO~TECH
research group
**Passionate About Research.
Driven By Results.**

www.infotech.com

Executive Summary

Projects and project management are not new to IT. For many organizations, projects in IT environments have become a critical part of daily operations.

This note identifies and discusses the following topics surrounding project management:

» Definition of a project.

» Definition of project management.

» Project management constraints.

» The phases of project management.

» Why IT projects fail.

It is no surprise; project management has become increasingly challenging. As IT projects and project management continue to play a large role in organizations, understanding and reviewing project management basics and how they have evolved over time is critical for ongoing IT project success.

Technology Point

Traditionally, project management was used in construction and manufacturing environments. These projects are typically characterized by disciplined planning and control methods, distinct and basic project lifecycle phases, easily recognizable and predictable project processes, and well understood tools and project activities. In today's organizations, and particularly within IT environments, predictability is anything but the norm. Managing IT projects is characterized by complex, interconnected systems, projects that span the organization, constantly changing business needs, stakeholder demands, and constrained resources. As a direct result, managing IT projects continues to be increasingly challenging.

What It Is & How It Works

Project Defined

According to the Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK), "A project is a complex, temporary endeavor undertaken to create a *unique* product or service." Unlike most IT processes, a project has a finite start and completion date (i.e. lifecycle) and unique, or non-repetitive, deliverables.

Project Management Defined

Change in IT organizations today is inevitable. IT project management is the means by which IT changes and developments are made in a controlled and focused manner. Specifically, "IT Project management is a set of principles, practices and techniques applied to lead IT project teams and control IT project schedule, cost, scope and quality of deliverables." (Source: *Project Management: The Managerial Process,* Clifford F. Gray and Erik W. Larson)

Project Management Institute

With more than 260,000 members in over 171 countries, PMI is the leading membership association for the project management profession.

INFO~TECH
research group

www.infotech.com

Project management revolves around three key organizational elements (see Figure 2):

1. **Business –** projects must be aligned with and support the organization's strategic goals and objectives.
2. **People –** projects revolve around people. This includes the project manager, stakeholders, and the project team.
3. **Tools and Technology –** projects rely on the resources at hand to plan, control, schedule, and track project progress.

    (Source: Adapted from "Understanding the Basics of Project Management")

It is the role of the project manager to manage and optimize these three elements throughout the project management process.

Project Management Constraints

A project, no matter the size or magnitude, must be completed under three constraints. Often referred to as the "Triple Constraints of Project Management" or "The Project Management Triangle," these constraints are as follows:

» **Scope –** project size, goals and deliverables.
» **Time –** time frame available to complete the project.
» **Cost (or Budget) –** amount (in dollars) budgeted for the project.

As shown in Figure 1, each constraint represents a side of the triangle. Inside the triangle is the quality of the project deliverable(s). While arguable as far as whether quality is an actual constraint of a project, it is the direct result of the competing project priorities and is an important factor at the forefront of any IT project.

Figure 1. The Project Management Triangle

Source: Wikipedia
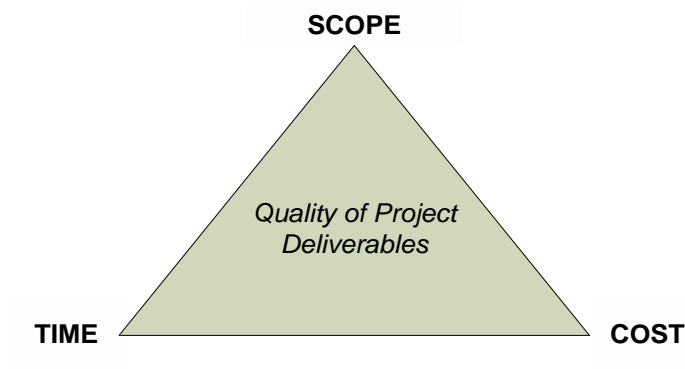
Each project constraint is in direct competition or conflict with another. Therefore, changing one constraint has a direct impact on the others. In almost all projects, the goal is a high quality deliverable within a fixed time frame, at the predetermined cost. However, if for example, one constraint is considered absolutely critical for the project, the other two constraints will have to give way, or be altered, to accommodate the fixed constraint (see example situation below).

Situation

You have been tasked with making all internal IT systems compliant with a new SEC regulation. The deadline is the end of this year. IT systems failing to meet new requirements will face strict penalties. Assume it is January 1, 20XX and your CIO determines this project will take approximately three months to complete.

Project Priorities

Your priorities would likely be in the following order:

1. **Scope –** all IT systems affected by the new regulation. **(Fixed Constraint)**

2. **Time –** you must get everything ready before midnight on December 31, 20XX (at the very latest). **(Variable Constraint)**

3. **Cost –** you might have to spend whatever is necessary to make sure all requirements and parameters are met and within the allotted time period.

INFO~TECH
research group

www.infotech.com

Explanation

» Scope is the fixed constraint since the situation (i.e. the project) applies to all IT systems within the organization (i.e. all IT systems must be compliant with the new SEC regulation, otherwise penalties will be imposed).

» Time is also a constraint as all IT systems must be in place before year end. Since we assume it is January 1, the project can start at any time throughout the year as long as it's complete before year end; therefore, time is a variable constraint.
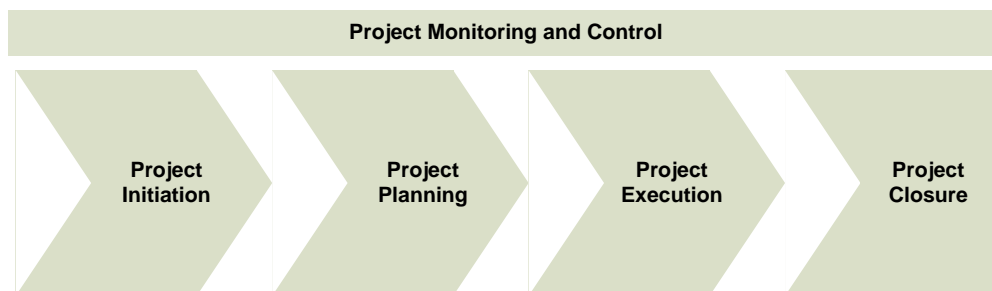
Source: Info-Tech Research Group (adapted from "Understanding the Basics of Project Management")

Phases of Project Management

Project management is accomplished in five phases (see Figure 2).

Figure 2. Phases of Project Management

Source: Info-Tech Research Group, adapted from "project management phases"

Project Monitoring and Control			
Project Initiation	Project Planning	Project Execution	Project Closure

A brief description of each phase is below:

1. **Project Initiation –** The business problem or opportunity is identified and a business case is developed. All stakeholders come together to establish preliminary agreement around project scope, costs, and expected timelines.

2. **Project Planning –** Project plans are established outlining activities, resource requirements, tasks, project deliverables, etc. A preliminary project schedule (i.e. work breakdown structure) is drafted.

3. **Project Execution –** This is where the bulk of the project work is completed. During this phase, customer requirements are gathered, a solution is agreed upon by all stakeholders and/or selection/procurement begins. While the actual project plan is being executed, a series of management processes are also underway to monitor and control project progress and deliverables and to ensure the project stays on track.

4. **Project Monitoring and Control –** Regularly measuring and monitoring project progress; making sure project objectives are on track and being met. Variances from the project plan are identified and corrective action is taken when necessary.

5. **Project Closure –** The project is delivered to the customer. A post-implementation review is conducted to determine the level of success of the project and to highlight key lessons learned for future projects. For example:

   » Did the project deliver on time, within budget, and to scope and quality requirements?

   » Were the customer, project stakeholders, and project team members satisfied with the project deliverables?

   » Did the project achieve the expected business benefits?

For Your Information

The Standish Group is a globally respected source of independent primary research and analysis of IT project performance.

The CHAOS Chronicles (i.e. compilation of various CHAOS Reports) are the Standish Group's claim to fame and comprise years of research done through focus groups, in-depth surveys, and executive interviews on project performance of over 50,000 completed IT projects.
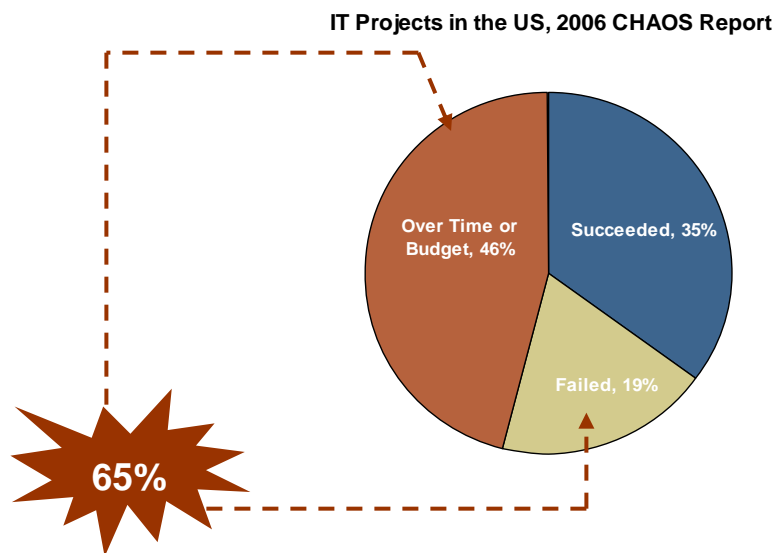
INFO~TECH
research group

www.infotech.com

Key Considerations

Why Projects Fail

Business processes and IT projects are complex. According to The Standish Group's 2006 CHAOS Report, over 60% of all IT projects fail or run over time or budget (see Figure 3).

Figure 3. Project Performance

Source: The Standish Group, 2006 CHAOS Report

IT Projects in the US, 2006 CHAOS Report

Prior to embarking on new endeavors, IT leaders should be aware of the project's chances for success. Understanding how and why IT projects fail is one way to determine the outcome of a project. IT leaders who know the common causes of project failure can learn from the mistakes of others and maximize their chances for success.

IT projects are known to fail for some of the following reasons:

» Project sponsors are not committed to the project objectives.

» Business needs are not clearly defined (i.e. incomplete/changing requirements).

» Incomplete project scope and unrealistic expectations.

» Absence of a project plan.

» Lack of resources (i.e. people, technology, money, time frame).

» Inappropriate methodology or project approach.

» Too many people working on the project – no project synergy.

Key Takeaway

1. **Refresh yourself on project management core concepts.**
   As IT continues to play an increasingly important role in organizations, a keen understanding of IT projects and project management is important. Characterized by uncertainty and change, IT leaders should be aware of ways to increase their chances for project success (see below):

   » **Manage project constraints.** A successful project manager must simultaneously manage the three basic constraints of a project: scope, time, and cost, as well as balancing the three constraints with the quality of the project's final deliverable. All constraints must be managed together if the project, and the project manager, are to be successful. Identify project drivers, constraints, and areas with flexibility. Define each project dimension as a constraint up-front, from within which the project must operate, or define with a degree of freedom or flexibility that can be adjusted within some stated bounds for the project to succeed.

   » **Follow project management phases.** Adhering to the standard project management lifecycle phases ensures key tasks are completed in a logical and controlled order. For example, this ensures that quality is checked and management approvals are gained before the next piece of work is started. Following the standard phases of project management helps to reduce the cost of rework and helps to position the project for success.

Did You Know?

IT project performance:

» $80-145 billion per year is spent on failed and cancelled projects.

» 25-40% of spending on IT projects is wasted due to rework.

» 40% of IT project problems are found by end users.

» 60-80% of IT project failures are attributed to poor requirements gathering, analysis, and IT project management.

(Source: "The Blending of Traditional and Agile Project Management," *PM World Today*, May 2007)

INFO~TECH
r e s e a r c h   g r o u p

www.infotech.com

» **Beware of why projects fail and take steps to mitigate common risks.** Spend the time to study and understand common project pitfalls. One of the best ways to plan for success is to learn from the mistakes of others. Use standards and best practices such as the PMI`s PMBOK, that, when executed properly, increase the chances for project success. For more information, refer to the following Info-Tech Advisor research notes:

- "Flawed Requirements Trigger 70% of Project Failures"
- "Requirements Models: The What, When, and Why"
- "Key Success Factors for IT Projects"
- "Get Requirements Right the First Time"
- "Projects: Managing Great Expectations"

Info-Tech Impact Research

For more information on project management, refer to the ITA Premium Impact Research report, "Succeeding with Project Management."

Bottom Line

IT Projects are characterized by changing technologies, uncertainty, and shifting business needs and objectives. Review core project management basics and increase the chances for ongoing IT project success.

Info-Tech provides IT research and advice to more than 21,000 IT professionals worldwide. Our practical, actionable research is specifically designed to have a clear and direct impact on your organization.

Info-Tech's products and services help our clients work faster and more effectively. Our research improves the IT decision-making process, expedites critical IT projects, and helps our clients keep current – enabling them to achieve greater personal and corporate success.

More About Info-Tech