Project Management for IT Professionals

Participant's Workbook

Plan, execute, and deliver complex

IT projects on time and on budget

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Seminar Goals and Objectives

Introduction

Information technology is a volatile and dynamic work environment. Constant change permeates the industry as technical advances, business requirements, competitive forces, and regulatory issues abrade the status quo. In the information technologist's world, expert knowledge must be rapidly organized, effectively focused, and accurately applied in what are frequently culturally and geographically diverse environments.

At the same time, there is little room for errors of omission or commission. The smallest IT detail can derail not only the IT system itself but it can (and often does) initiate failures of those systems it supports, controls, or operates. From failed Mars probes to dropped cell phone calls to missed financial projections, information technology errors can have devastating effects.

Seminar Goal

The goal of the seminar is to provide an overview of the special considerations and techniques for initiating, planning, and controlling a typical small- to medium-sized information technology project that requires the participation of several information technology workers, as well as the collaboration of others such as end-users, specifiers, and sponsoring executives.

Summary of Seminar

This seminar describes the information technology project environment, lists common pitfalls and potential issues, and provides an introduction to the process, vocabulary, and techniques used by seasoned IT project managers.

Learner Analysis

Ideal participants of this seminar include programmers, systems engineers, information technologists, IT managers, software integrators, and those who manage or direct the information technology departments of their organizations.

Training Objectives (Terminal)

Upon mastery of the content in this seminar:

- The learner will be able to list the steps required to undertake a new information technology project.
- The learner will be able to list the major causes of project success/failure and describe specific actions and techniques that can be employed to improve the chances for project success.
- The learner will be able to describe the key elements of an effective project plan.
- Participants can list their project's key stakeholders and describe the importance of effective communication of roles and responsibilities for typical stakeholder groups.

Training Objectives (Enabling)

- List and describe the major components of the software development lifecycle (SDLC).
- Describe the importance of project process control documentation and list two examples.
- List three major threats to an IT project's success.
- Describe the WBS (work breakdown structure) and its importance in the project plan.
- Estimate project activity durations for use in creating a project schedule.
- Create a critical path schedule using a Gantt chart.
- Create a critical path schedule using an activity-on-node network diagram.

Subject/Learning Points

Success and Failure Factors for IT Projects

Why IT Projects Fail
Rating Your It Project's Chances for Success

The IT Project Life Cycle

Managing the IT Project's Lifecycle
Essential Project Control Documents
Establishing an Optimal Process

Initiating Successful IT Projects

Creating Effective Project Goals
Creating the IT Project's Statement of Work
Getting Project Acceptance
Deployment Considerations
Defining the Project's Scope
Understanding Your Project's Triple Constraints
Why IT Projects Fail and How to Improve Your Odds

Planning the Project Step-by-Step

Requirements Definition
Creating the Work Breakdown Structure
Identifying Project Milestones
Estimating Task and Activity Durations
Establishing Workflow
Scheduling with the Critical Path Method
Creating Network Diagrams and Gantt Charts
Planning Your Project's Resources
Estimating Project Costs

Execution and Control

Staffing and Teamwork Considerations
Monitoring Progress
Controlling Scope
Problem Solving and Troubleshooting

Wrap Up

IT Project Rules Success

Success and Failure in IT Projects

The real reasons projects fail, and using this information to ensure that all your projects succeed

Discovering Why IT Projects Fail

A watershed study was conducted in 1994 by the Standish Group to determine the scope of software failures, the major causes of failure, and the key factors that could reduce failures. The results confirmed what many IT professionals suspected: IT projects rarely finish on time and on budget. Moreover, those that finish rarely deliver all of the features and functions originally specified.

Key Findings

- 16.2% of software projects come in on time and on budget
- 52.7% of all projects finish operational, but over budget, and with fewer features than originally specified
- 31.1% of all IT projects are canceled before completion
- 52% of the projects completed cost an average 189% of their original estimates
- Only 42% of proposed functions are actually delivered in large company projects
- In smaller organizations, 78% of the projects eventually deploy, but they lack 26% of the specified features

Source: The Chaos Report (1994)

Success and Failure Factors

Rating the IT Project's Chances for Success

Choose one of your projects or a project portfolio to rate. Rank each success factor in the space below. For example, if you believe that upper management only supports the project's needs half as well as they should, enter 8 points for that item. Total the points and compare your results with others.

Success Factor	Maximum Value	Your Value
Stakeholder's Authentic Participation	19	____
Upper Management's Support	16	____
Appropriate Requirements and Specifications	15	____
Appropriate Process Model and Planning	11	____
Clear and Detailed WBS with Milestones	9	____
Technically Competent Team	8	____
Clear Roles and Responsibilities	6	____
Agreed Upon Goals and Statement of Work	3	____
Motivated Project Team	3	____
Totals:	100 %	

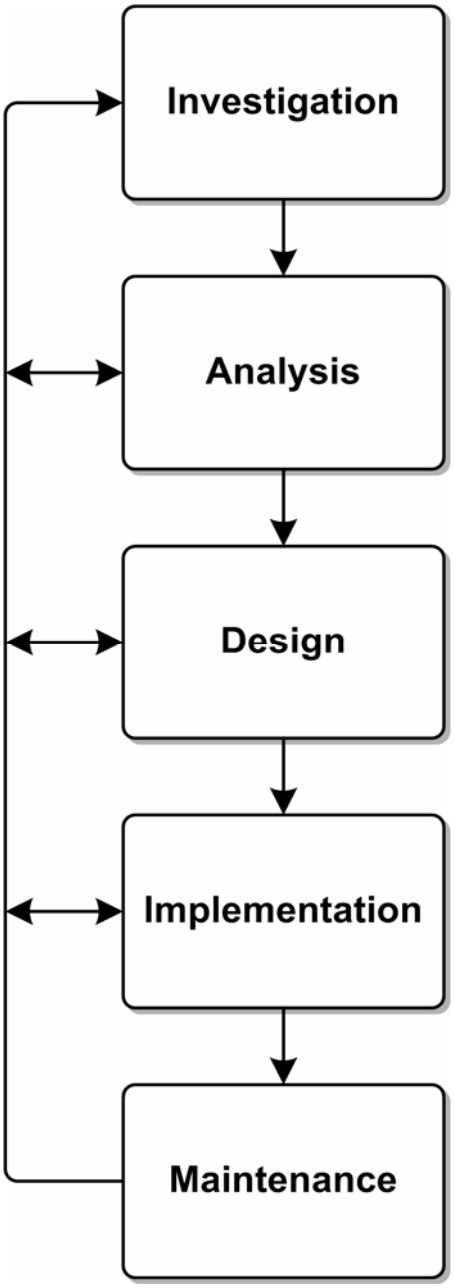
Adapted from The Chaos Report (1994)

Skill builder: To improve your ability to judge a project's chances of success, rate other projects. If possible, pick projects you were close to and rank one that failed as well as one that succeeded.

The Project Lifecycle

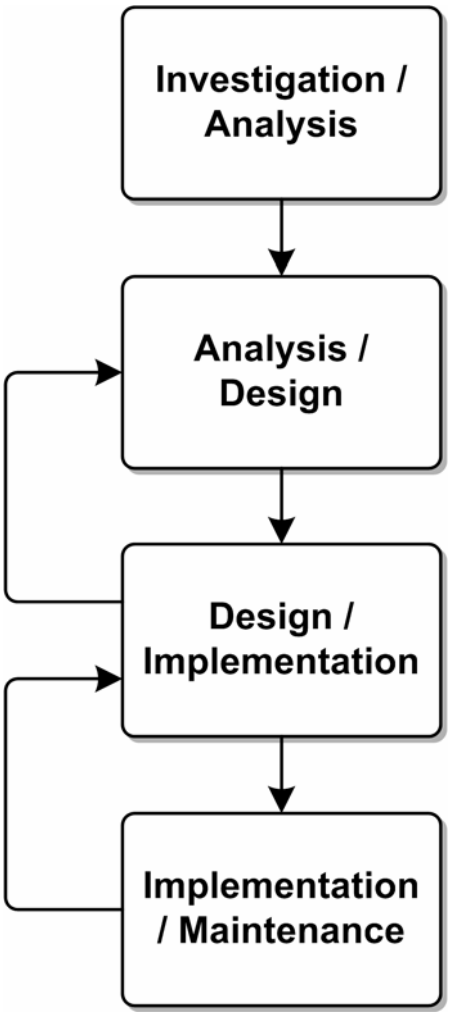
Establish an optimal process for accomplishing your project's goals

The Software Development Life Cycle (traditional SDLC)



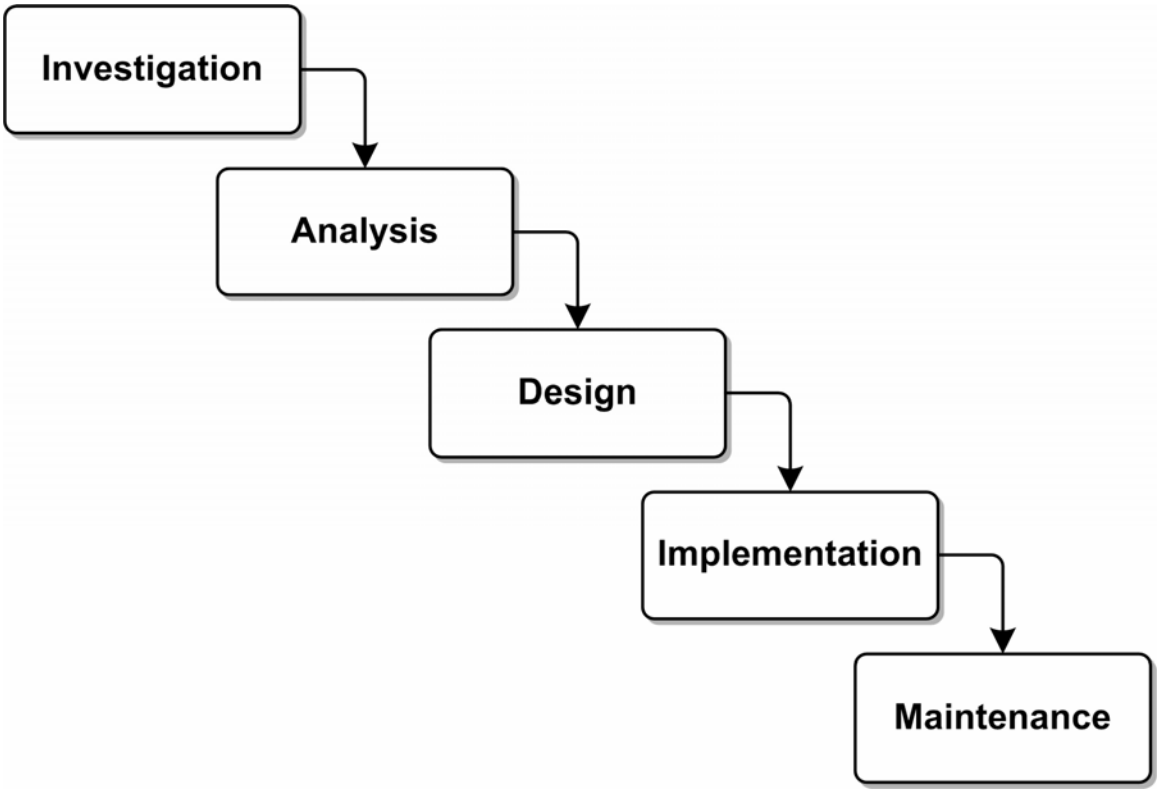
The Rapid Application Design ("RAD" SDLC)

Prototyping for faster development when user requirements are difficult to define



The Waterfall Application Development Process

An approach for smaller systems, low complexity/risk, and experienced teams



Project Management Process Groups

Master the skills required in the most challenging project with these five essential processes

Initiating

Planning

Executing

Controlling

Closing

Process and Lifecycle Control

Become a better, more effective project manager by using these forms and checklists to improve communication, decision-making, and control

- Project Concept Screening Checklist*
- Project Charter*
- Statement of Work*
- Design documents including system requirements and specifications
- Scope Document
- Scope Change Request*
- Bug/Defect Management Log
- Quality Assurance and Verification Log
- Project Journal

***Skill builder:** Samples of these documents can be downloaded as a WORD.doc at http://www.thementorgroup.com/Free_Tools_and_Checklists.htm.

Initiating Successful IT Projects

Keep your team goal-focused from the beginning to the end for improved decision-making, quality, and results

Creating Effective Project Goals

S_____

M_____

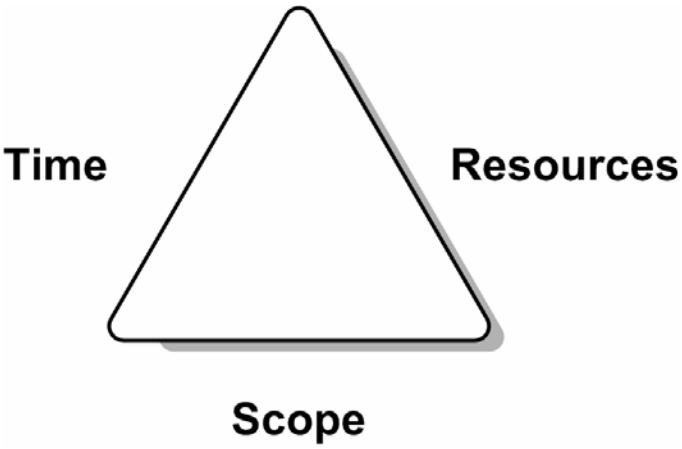
A_____

R_____

T_____

The Triple Constraints—Balancing Time, Resources, and Scope for Success

Understanding your project's triple constraints, how they limit progress, how you can work around them



Driver

Middle

Weak

The Statement of Work

A simple step-by-step checklist for creating the IT project's statement of work and setting the stage for good requirements and specifications

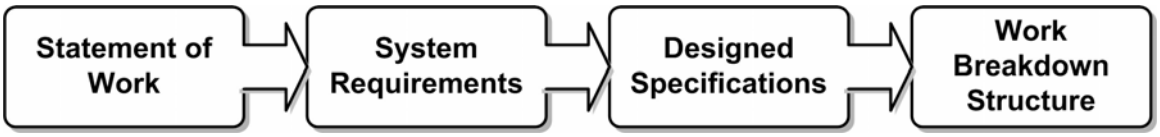
- Problem / Opportunity Statement
- Project Owner and Stakeholders
- Project Objectives
- Cost/Benefit Analysis
- Team Impact
- Project Scope
- Implementation Plan
- Change Control Process
- Project Sign-off
- Evaluation

Skill builder: Download this outline with sample text in a WORD.doc at http://www.thementorgroup.com/Free_Tools_and_Checklists.htm.

Writing Effective System Requirements and Specifications

How to make sure the system your stakeholders want is the system you actually build

System Design as a Process



Creating Effective System Requirements

1. Consider your project's requirement from the _____,
   _____, and _____ viewpoints.
2. Use _____ _____ or _____ to identify needs
   and communicate system requirements.
3. Use the _____ ___ _____ to guide the project's scope.
4. Well written requirements improve the team's ability to _____ the
   specifications, _____ scope, and gain project _____.

Writing the System Specifications

Keeping your team focused on what matters the most

Good Specifications

- Describes the features and functionality of the completed system
- Provides a team-wide reference that communicates the designers' approach to specific outcomes or deliverables
- Details how the system works in plain language
- Describes the user interface and how it will satisfy the requirements
- Provides enough technical details to describe how the system fulfills the requirements
- Lists major work items by system, features, and/or functions
- Describes testing criteria that will ensure the system meets the design requirements in it's operating environment
- Are written as simply as possible (without being overly so), allowing the essentials to be fully understood by everyone on the implementation team
- Improve discussions, questioning, and team contributions before implementation

What Specifications Can't Do

Planning the Project

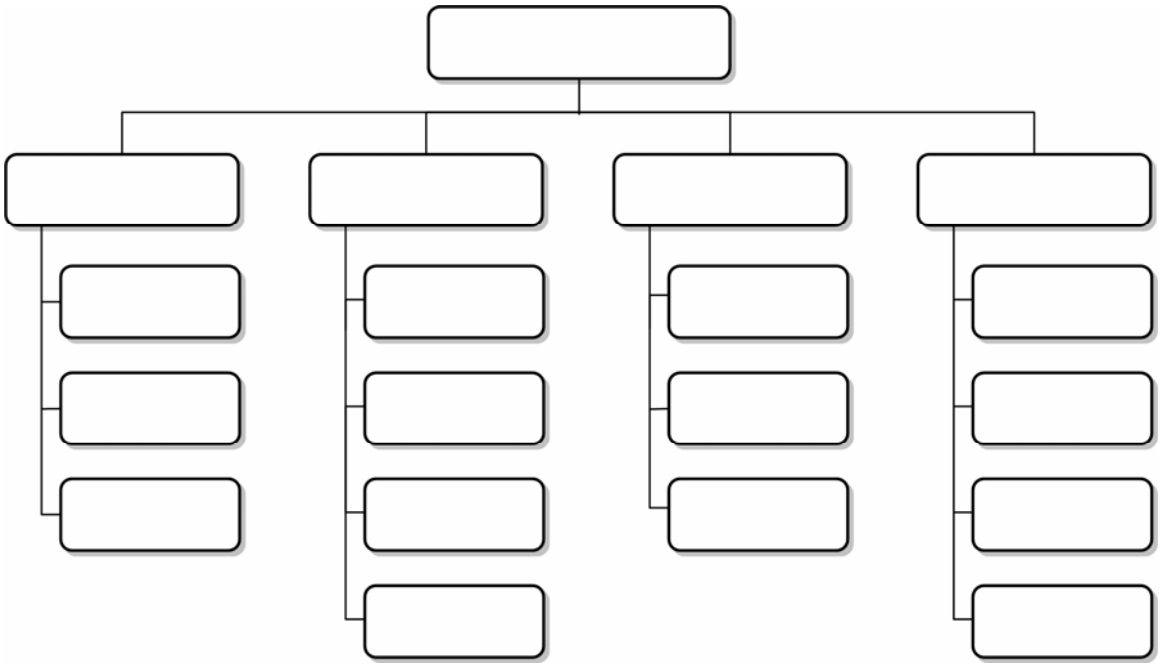
Indispensable planning tools that help you build a thorough understanding of who does what, and when

Developing the Work Breakdown Structure (WBS)

Creating the detailed control you need to ensure project success

Elements of the WBS

- Goal
- Phase
- Activity
- Task
- Milestone



Estimating Task and Activity Durations

Key formulas to simplify your estimates and allow for both the known and the unknown

Three Powerful Estimating Techniques

- Parametric

- Expert Judgment

- Weighted Average

T_E = _____

T_O = _____

T_M = _____

T_P = _____

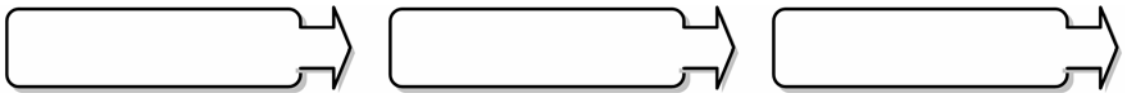
$$T_E = [T_O + (4 \times T_M) + T_P] / 6$$

Skill builder: Watch for patterns in your team's estimating. While some will consistently overestimate, others may consistently underestimate. The goal is to fall within a small deviation on either side of the estimated duration consistently.

Modeling the Project's Workflow

Building a realistic schedule to determine project duration, identify bottlenecks, and manage project progress like a pro

Task Dependencies



- Dependent task
- Predecessor task
- Successor task
- Lag
- Lead
- Finish to Start (FS)
- Start to Start (SS)
- Finis to Finish (FF) and Start to Finish (SF)

Creating the Schedule

Stay in control of even the largest project with this proven scheduling technique—know exactly what needs to happen, who needs to do it, and when it must be completed

Task Chart

Task	Dur.	Res.	Pred.	ES	EF	LS	LF
Go Ahead							
Task A							
Task B							
Task C							
Task D							
Task E							
Finished							

Early Finish = _____ + _____

Late Start = _____ - _____

Gantt Chart

Task	Dur.	Pred.	W1	W2	W3	W4	W5	W6	W7
Go Ahead									
Task A									
Task B									
Task C									
Task D									
Task E									
Finished									

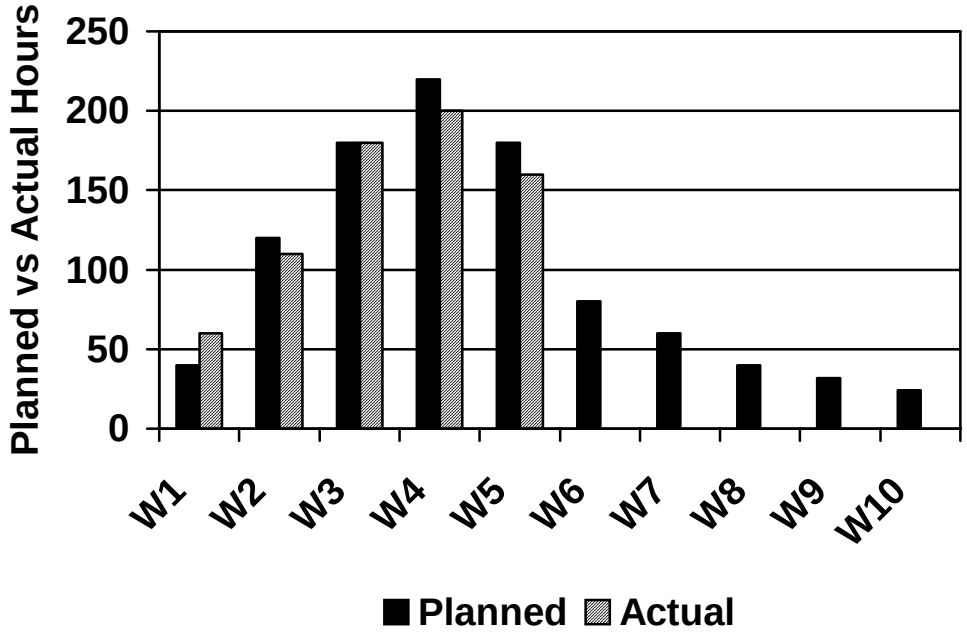
Network Diagram

CPM Scheduling Exercise

Master the CPM scheduling methods to communicate essential information with persuasive power and professional finesse

ID	Task Name	Dur.	Pred.	1	2	3	4	5	6	7	8	9	10	11	12
1	Select Team	1 wk	-												
2	Assess Needs	2 wk	1												
3	Create Requirements	1wk	2												
4	Design System	1 wk	3												
5	Develop Code	3 wk	4												
6	Test and Debug	3 wk	5SS+1wk												
7	Train Users	1 wk	5,6												
8	Deploy System	1 wk	7												
9	Gain Acceptance	1 wk	7,8												
10	System Delivered	0 hr	9												

Resource Charts



Who Does What Chart

How to determine the resources needed to complete your project

Task / Resources	W1	W2	W3	W4	W5	W6
Assess Needs						
Bill Smith	40 hr					
Sue Scott	40 hr					
Write Specifications						
Bill Smith		40 hr	40 hr			
Engineer II		20 hr	20 hr			
Programmer I			20 hr			
Intern		10 hr	10 hr			
Create Prototype						
Sue Scott				40 hr	40 hr	40 hr
Programmer II				160 hr	160 hr	160 hr

Estimating Project Costs

How to build a realistic budget based on scope, deliverables, resources, milestones, and expenditures

Direct Costs	Indirect Costs

- Add a cost column to the task chart to account for expenditures directly related to each task.
- Create a project cost checklist to prevent errors of omission when compiling the project's indirect costs.
- Enlist your organization's financial experts when creating project budgets to ensure that policies, procedures, and the best financial standards and practices are used.

Execution and Control

Strategies for Building High-Performance Project Teams

Selecting a World-Class Project Team Leader

One of the most important decisions on every project is in selecting the right project manager. Make sure your project's leadership is up to the challenges. After answering the questions below, assemble with your colleagues a list of characteristics that describe world-class project team leaders.

1. A good project team leader always… _____

_____

2. The role of the leader of a project team is to… _____

_____

3. A leader is one who… _____

_____

4. Some projects leaders are ineffective because they… _____

_____

Characteristics of a world-class project team leader include: _____

_____

_____

_____

_____

Tracking and Controlling Your Project Like a Pro

Communicate the progress of your project to team members, management, and other stakeholders with these powerful techniques

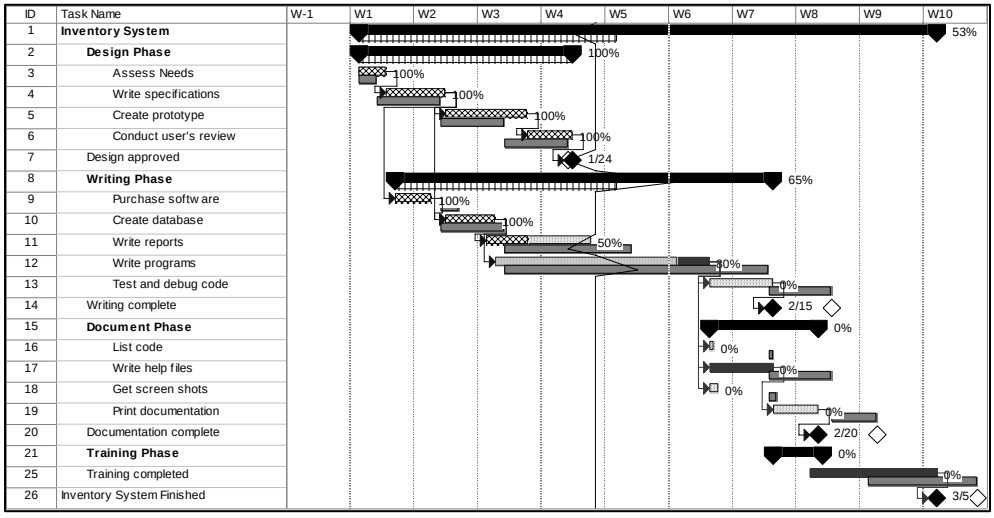
Three Essential Questions

1. What _____ have you accomplished?

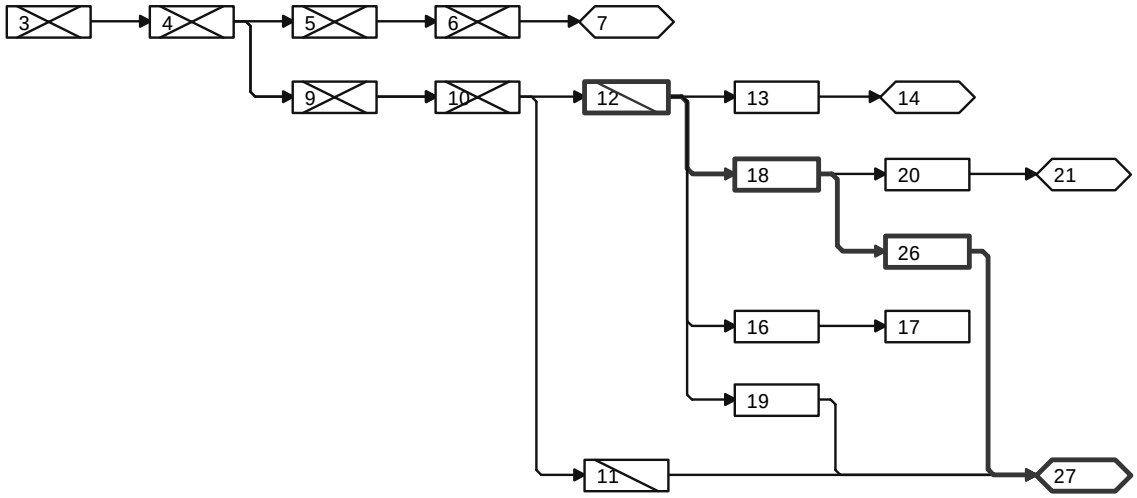
2. What _____ are in progress?

3. What _____ are you experiencing or anticipating?

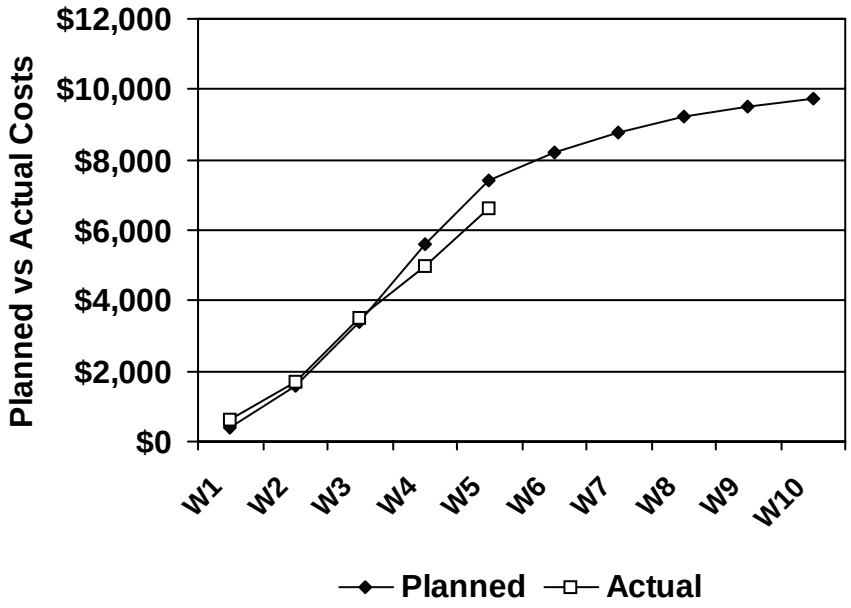
Tracking Gantt



Network Diagram



Cost Curve



Variance Chart

Task	Duration				Costs				
	Est.	Actu	Var.	%	Est.	Actu	Var.	%	

Scope Change Request Form

- Background of Request
- Approach or Methodology
- Estimated Impact on Schedule, Budget, and Scope
- Communication Routing List
- Attachments and
- Requested by / Date
- Sponsor Approval / Date
- Other Approval / Date
- Project Manager Approval / Date

Common Problems That Threaten Success

Stay alert for these common problems to successfully plan for the unexpected and minimize crises and disasters

1. Lack of user involvement or input
2. Incomplete requirements and specifications
3. Inability to freeze the design early enough
4. Unrealistic expectations and overoptimism
5. Lack of executive support
6. Unrealistic timeframes
7. Inadequate planning
8. Technology illiteracy
9. Lack of resources
10. Unclear objectives
11. Too large/too few project milestones
12. Inadequate communications

Rules for Project Success

The IT project manager's overview of key actions that will make every project a success

1. Never begin a project without clear and well documented _____.
2. To improve team buy-in, commitment, and cooperation, _____ the people doing the work during planning.
3. Practice the rule of thirds: one third _____, one third _____, one third _____.
4. Know the project's _____ path.
5. Create schedules with many_____ and carefully manage their completion.
6. The project manager's most important job is to create and maintain effective _____.
7. Guard against _____, especially_ in the early stages of the project.
8. Manage change carefully by assessing it's overall _____to the project before committing.
9. Document exactly what is required to successfully _____the project before you begin.
10. Double check the _____ _____ _____ — the basis for schedules, budgets, roles and responsibilities, and progress monitoring.
11. Remember that the project isn't a success unless the _____are _____.
12. Build _____ into your project plans.

Action Plan

Consider how you might use today's information to improve your ability to manage projects successfully.

Appendix

References and recommended reading materials.

Books

The Art of Project Management by Scott Berkun, published O'Reily, 2005
The Complete Idiot's Guide to Project Management with Microsoft Project 2003 by Ron Black, Alpha Books, 2004.
The Mythical Man-Month, by Fred Brooks, published by Addison Wesley, 1995.
The Wisdom of Teams by Katzenbach and Smith, published HarperBusiness, 1993.

Websites

http://www.gantthead.com for various checklist, articles, and whitepapers on IT project management
http://www.standishgroup.com/sample_research/ for The CHAOS Report, a frequently referenced report on IT projects
http://www.thementorgroup.com/Free_Tools_and_Checklists.htm for downloadable project management control documents

CD-ROM

A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Third Edition CD-ROM, published by Project management Institute, 2004.