SCOPE DEFINITION & CONTROL

3

Project Management and the Stakeholders

Project Manager must be responsible to see that all areas defining scope are covered, and agreed, written scope exists - based on agreed, written statement of Stakeholders' Requirements

Clearly Established Principle

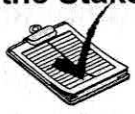
-"speak now or forever hold your peace"

Define Impact of Later Scope Changes - Before Approval

27

Managing the Stakeholders

- **Define Who the Stakeholders Are**
- **Set priority tasks for Stakeholders**
- **Build a "Model" to educate the Stakeholder**
- **Develop a "checklist"**



- **Help Stakeholders to think about future requirements**
  - expandable, flexible, ability to add on easily.
- **Try to separate "musts" from "would be nices"**
- **State and Document Assumptions - Stakeholders Too**

28

Framework for Requirements

"Projects don't fail at the end; they fail at the beginning" - Gregory D. Githens PMP

Factors to Consider

1. **Define Key Terms**
2. **Orient on Customer Value**
3. **Strive for Technology Independence**

Feb 2000 PM Network, p49 Gregory Githens PMP

31

Customer Requirements

What they want vs what they need

Educate the Customer

- get them to want what they need

OBJECTIVE

- satisfy agreed upon requirements which reflect wants *and* needs

Be realistic with costs.

Feb 2000 PM Network, p49 Gregory Githens PMP

32

Stakeholder Requirements Exercise

- Improving Project Management Practices
- Refer to Needs Statement
- Identify 3 Stakeholders
- And their requirements

35

Scope Control

Work Breakdown Structures

Scope Evolution

Determination of Stakeholders' Requirements

Stakeholder Management

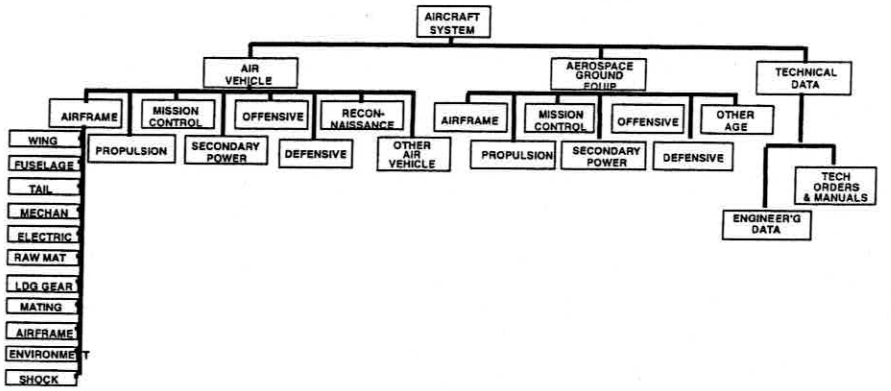
Change Control

Quality

36

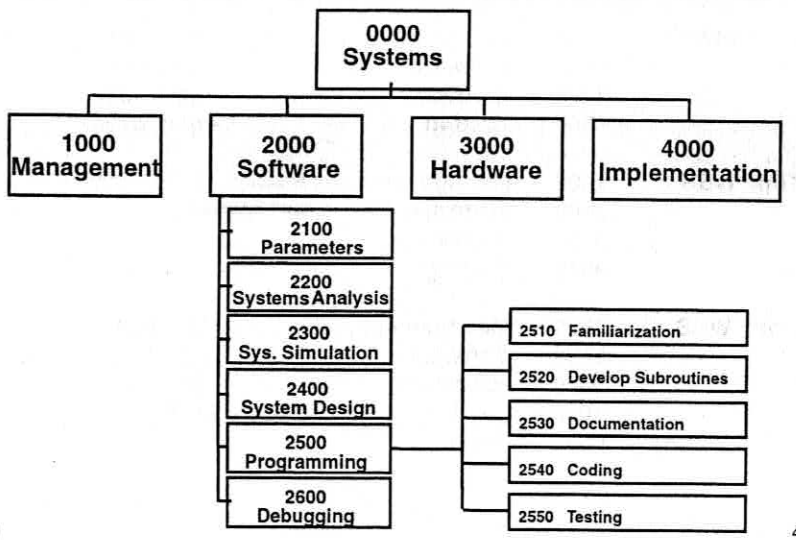
Continuing contact + feedback.
# of changes can be reduced by defining better at beginning.

Aircraft System



39

WBS Used for Scope/Time /Cost



40

Early Preliminary Design Stage

2000 Scope (Software Portion Only)

2100 Parameters - gen. desc.

2200 Systems Analysis - gen. desc.

2300 Systems Simulation - gen. desc.

2400 Systems Design - gen. desc.

2500 Programming - gen. desc.

2600 Debugging - gen. desc.

Early Preliminary Design Stage

2000 TIME (software portion only)

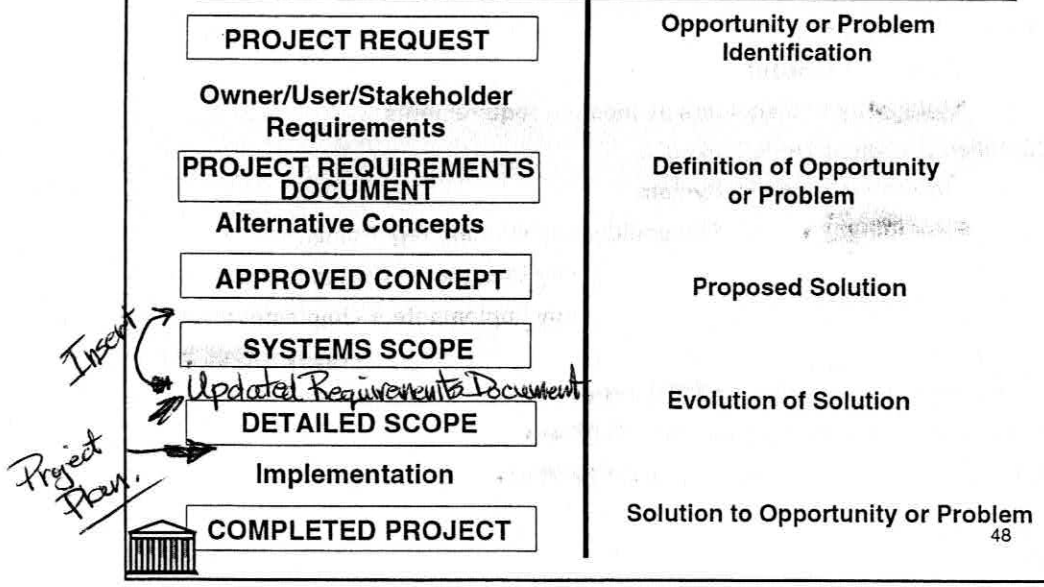
2100 Parameters
2200 Systems Analysis
2300 Systems Simulation
2400 Systems Design
2500 Programming
2600 Debugging

WBS Exercise

- **Improving Project Management Practices**
  - **use the Project Charter provided**
  - **Use "yellow stickies" to develop a WBS**
  - **Be prepared to present and defend it**

47

Evolution of Scope



48

Systems in a Lumber Mill

Plumbing	Accounting	Soft Start	Fire Protection	Whistle System
Heating	Noise Control	Lockout	Fire Safety	First Aid
Drainage	Purchasing	Bin Restraint	Evaluation	Communication
Sprinkler	Marketing	Blower	Quality Control	Data Gathering
Ventilation	Union / Management	Scanning	Safety	LAN
Air Conditioning	Pneumatic	Filtration	Training	Process Control
Telephone	Budget	Public Address	Logging	& Optimization
Fax	Disposal	Banding	Trucking	Down Time Report'g
Copier	Mail	Taxation	Lumber Handling	Production Alarm
Hydro - Power	Fire Alarm	Stumpage	Waste Handling	Maintenance Mgmt
- Lighting	Schematics	Natural Gas	Chip Handling	Pollution Control
- Elect Dist	Disciplinary	Log Handling	Cost Control	Hazard Abatement
- Motor Cont	Mgmt Reporting	Hot Water	Expense Control	Maintenance
Water - Hot	Capital Approval	Conus	Computer Mapping	Evacuation
- Cold	Grievance	Number & Lettering	Site Prep for Mapping	Compressed Air
- Purified	Production Review	Stenciling	Silvaculture	Snow Removal
Sewage - Storm	Railway	Suction	Forest Tenure & Admin	Burning
- Sanitary	Roads	Magnetic	Inventory	Recycling
Lubrication	Regulatory	Monitoring	Growth & Yield	Vertical Transportation
Security	Hydraulic	Dust Removal	Cut Permit Applic'n	Wood cutting systems.
CCTV	Preventative Maint	Accts Payable	Development Plan	
Warning Lights	Sales & Shipping	Log Accounting	Mgmt & Work Plan	
Grading	Payroll	Environment	Direct Invoice	
Spraying	Scaling	Bar Coding	Marketing	
Eye Wash	Wrapping	Master Keying	Halon Fire	
	Snow Clearing			

51

Scope Milestones

- Agreed Stakeholders Requirements Document
- Agreed, Concept Scope Description
- Agreed Updated Requirements Document.
- Agreed, Systems Scope Description — By WBS
- Agreed, Detailed Scope Description
- Completed Project (should meet the Updated Requirements document)

52

Scope Changes

1. Baseline Agreement
   - Written Scope Description -by Project Structure
2. Identify Change in Scope - compare to Baseline
   - Estimate Time and Cost Implications
3. Submit to Owner for Approval

~~Do Not Start~~ scope change until OWNER APPROVES IN WRITING

55

Design Changes

Often Needed to Produce Workable Result

Due to Unanticipated or Changed Conditions

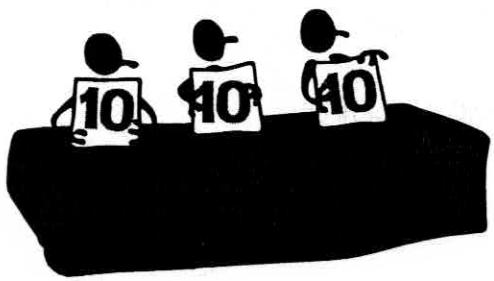
- More Specific Knowledge
- Actual Conditions
- Rework
- New Technology
- Regulations / Standards
- Change in People

56

QUALITY

4

4 Quality

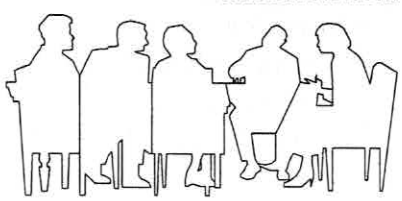


57

Quality Management

Costs of Non-Conformance

Scrap
Duplication of Effort
Corporate Image
Late Deliveries
Rush Deliveries
Late Penalties
Documented Rework
Failure Analysis
Overtime
Hidden Rework
Customer Dissatisfaction
Warranty Work
Missed Opportunities
Confusion



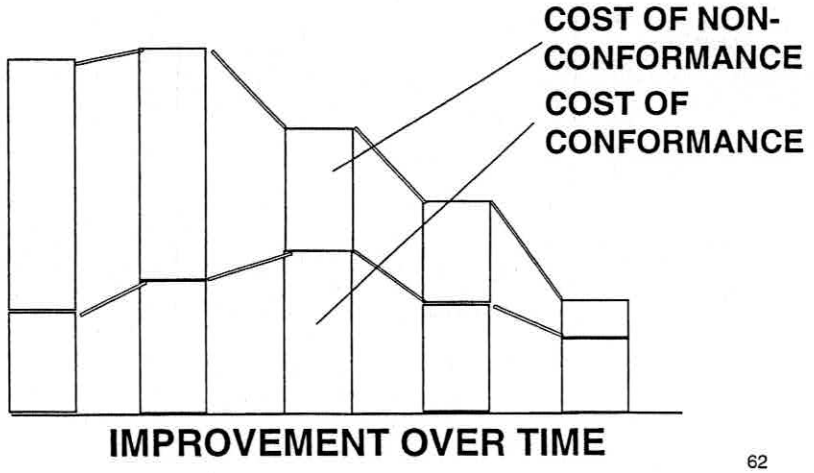
58

Foundations of Quality Management

1. Quality is conformance to requirements
2. The system of quality is prevention
3. The performance standard is zero defects
4. The measurement of quality is the price of non-conformance

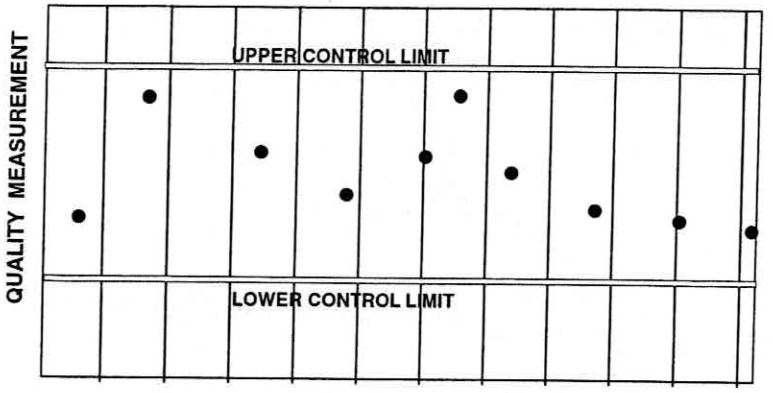
Crosby 61

Cost of Quality



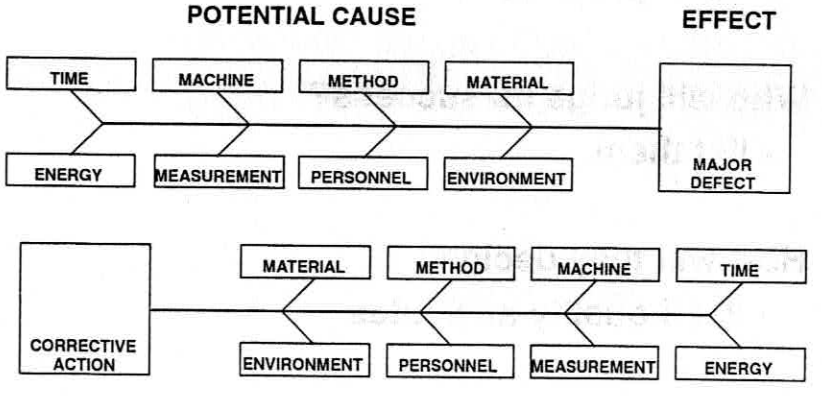
62

Control Limits



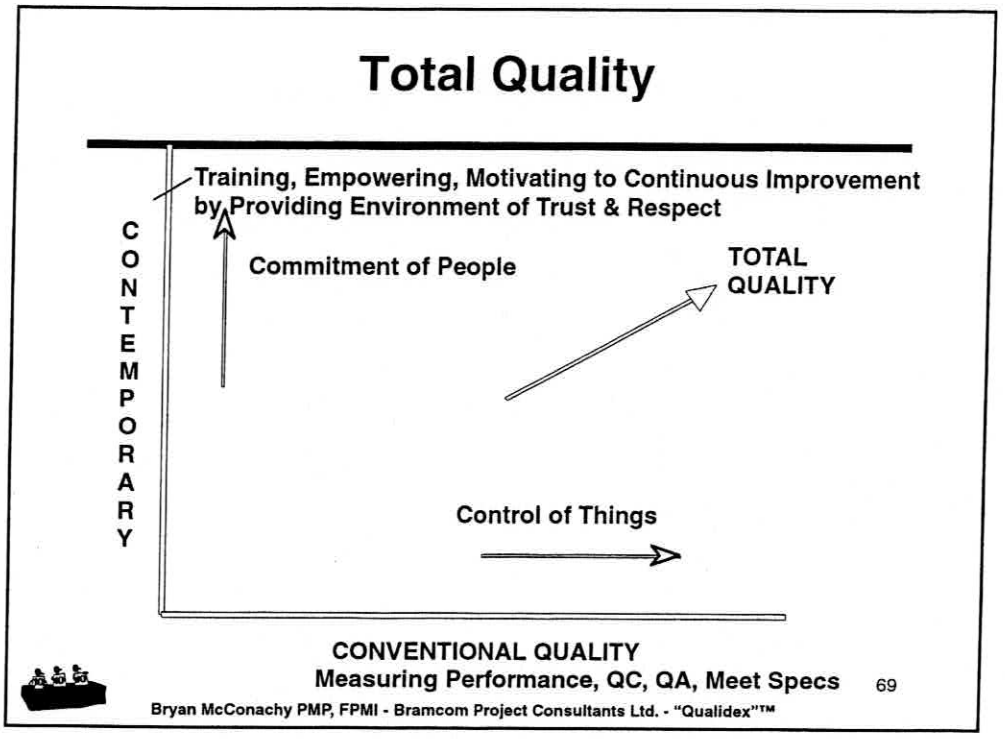
65

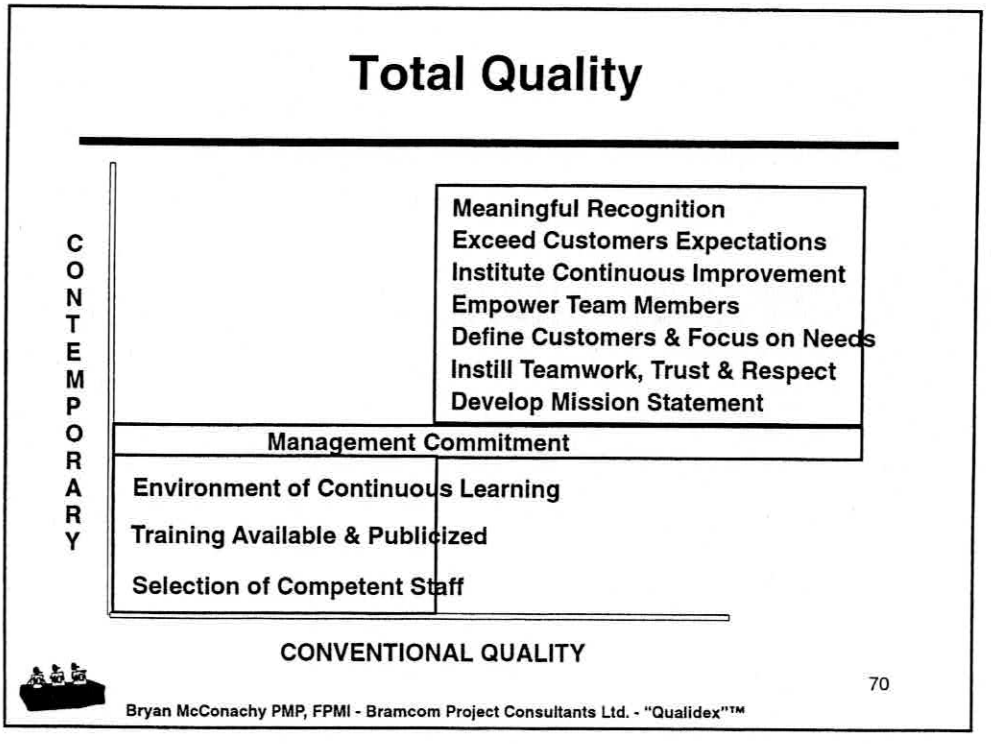
Cause and Effect Diagram



PMBOK 2000 Draft

66


Total Quality
Training, Empowering, Motivating to Continuous Improvement by Providing Environment of Trust & Respect
Commitment of People
TOTAL QUALITY
CONTEMPORARY
Control of Things
CONVENTIONAL QUALITY
Measuring Performance, QC, QA, Meet Specs
69
Bryan McConachy PMP, FPMI - Bramcom Project Consultants Ltd. - "Qualidex"™


Total Quality
Meaningful Recognition
Exceed Customers Expectations
Institute Continuous Improvement
Empower Team Members
Define Customers & Focus on Needs
Instill Teamwork, Trust & Respect
Develop Mission Statement
Management Commitment
Environment of Continuous Learning
Training Available & Publicized
Selection of Competent Staff
CONTEMPORARY
CONVENTIONAL QUALITY
70
Bryan McConachy PMP, FPMI - Bramcom Project Consultants Ltd. - "Qualidex"™

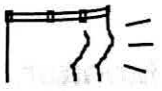
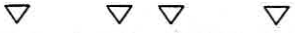
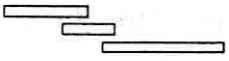
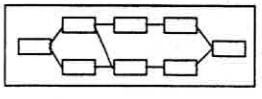
TIME CONTROL

5

5 Time Control

71

Time Control Techniques

- Seat of the Pants 
- Lists 
- Milestone Dates 
- Bar Charts 
- Logic Networks 

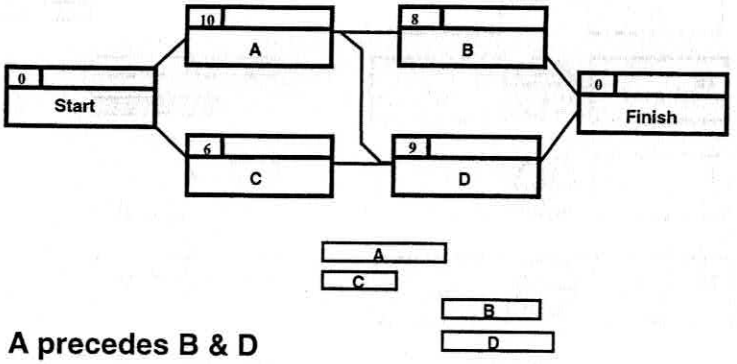
72

Methods of Networking

Arrow Diagram

Precedence Diagram

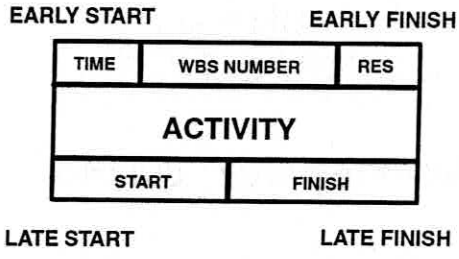
Precedence Diagram



A precedes B & D

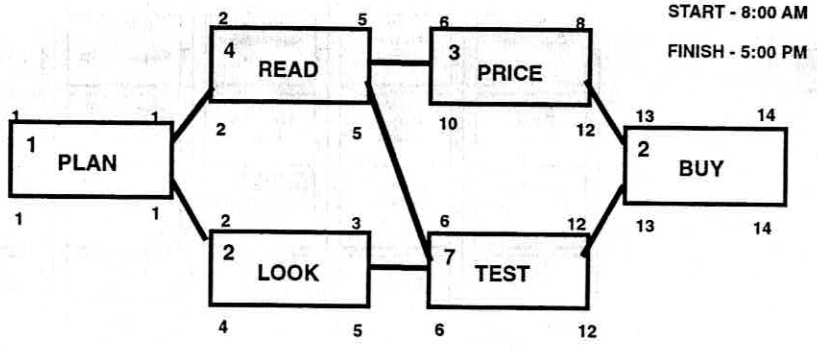
C precedes D

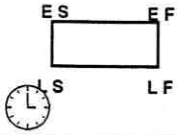
A Format for Precedence Diagrams



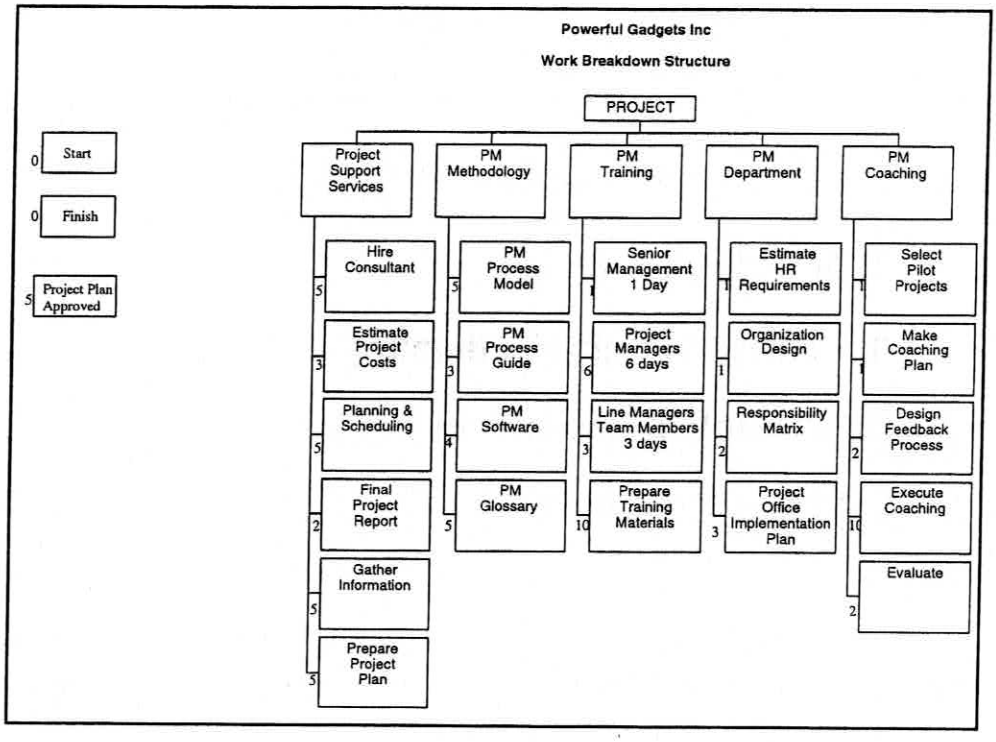
79

A Simple Network





80


Powerful Gadgets Inc
Work Breakdown Structure
PROJECT
0 Start
0 Finish
5 Project Plan Approved
Project Support Services
PM Methodology
PM Training
PM Department
PM Coaching
5 Hire Consultant
3 Estimate Project Costs
5 Planning & Scheduling
2 Final Project Report
5 Gather Information
5 Prepare Project Plan
5 PM Process Model
3 PM Process Guide
4 PM Software
5 PM Glossary
1 Senior Management 1 Day
6 Project Managers 6 days
3 Line Managers Team Members 3 days
10 Prepare Training Materials
1 Estimate HR Requirements
1 Organization Design
2 Responsibility Matrix
3 Project Office Implementation Plan
1 Select Pilot Projects
1 Make Coaching Plan
2 Design Feedback Process
10 Execute Coaching
2 Evaluate

IBM Scheduling Norms

- Short Duration Tasks
- Realistic Dependencies
- Impact of Change
- Visibility
- Checklist for Every Milestone
- Communications
- Major Replanning Every 6 Months

- divide longer term tasks into shorter durations with milestones to accomplish.
- 10 days is optimum.

- specific descriptions of work.
- to ensure all items are completed for an individual milestone.

The Meaning of "Complete"

Software Changes are Complete when:

- The Programmer writes the program
- The program is debugged
- The acceptance test is completed
- The manuals have been completed
- Training is completed

Example of work description or checklist for each milestones

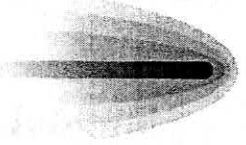
Project Management Software

PURPOSE	WINDOWS PROGRAM	USE
SCHEDULING	Microsoft Project Project Scheduler 7 Sure Trak Project Manager --- Primavera Project Planner P3 Project Manager Workbench OpenPlan	Networks Bar Charts Resource Histograms Schedule Simulation Multi-Projects

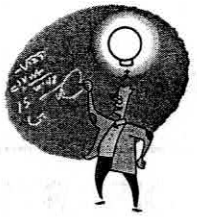
$500

48% use Microsoft Project - but satisfaction is low.

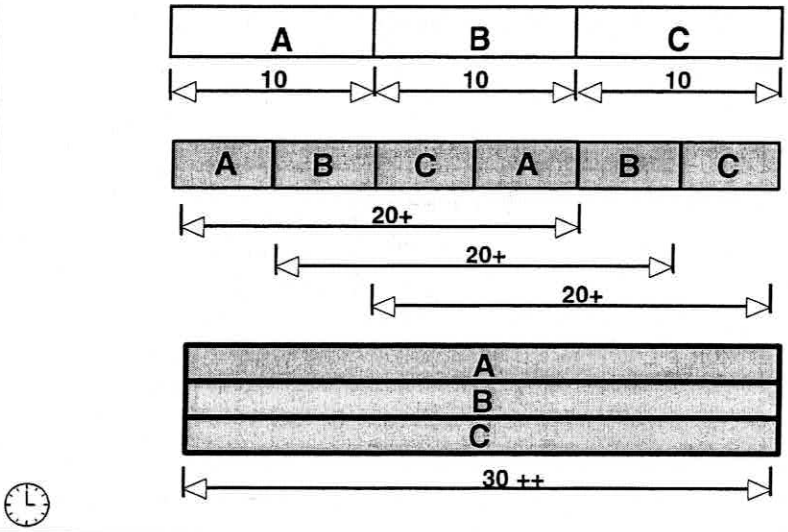
Project Scheduler rates high



Critical Chain Scheduling

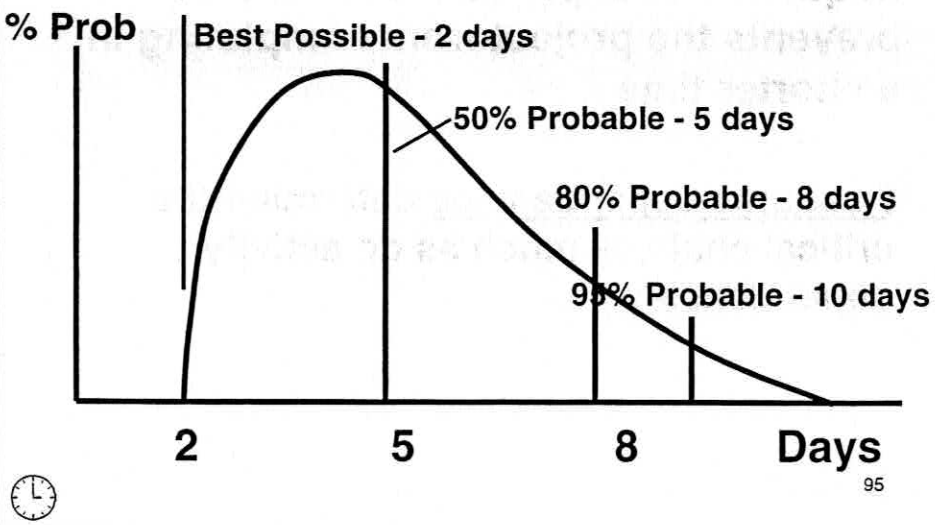


MULTI - TASKING



94

HOW CERTAIN ?



95

Ever - Present

1. Parkinson's Law
   Work expands to take up the time, resources or money available.

2. Murphy's Law

To Avoid Parkinson's Law

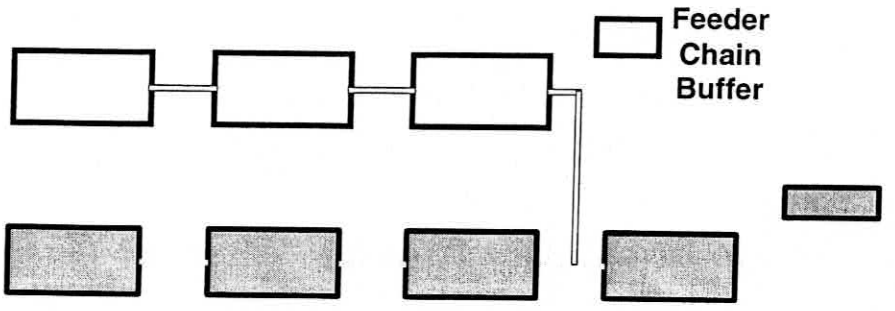
1. Use tight target durations
   - no diversion of attention
   - put "safety" at the end

   - otherwise projects can drag on.

2. Get Rid of Task Due Dates and Start Dates

3. Protect Project Resources

Buffers



102

Steps in Critical Chain Management

1. Identify the Constraint
2. Exploit the Constraint - use best estimate or 50%
3. Subordinate Non-critical Chain Paths (late finish plan)
4. Subordinate to the Constraint - use a Buffer
5. Subordinate Feeding Buffers
6. Establish Resource Buffers - Flags - incentives?
7. Eliminate Date-Driven Behavior
8. Eliminate Multitasking - Elevate Performance

103