

PROJECT MANAGEMENT AND CONTROL

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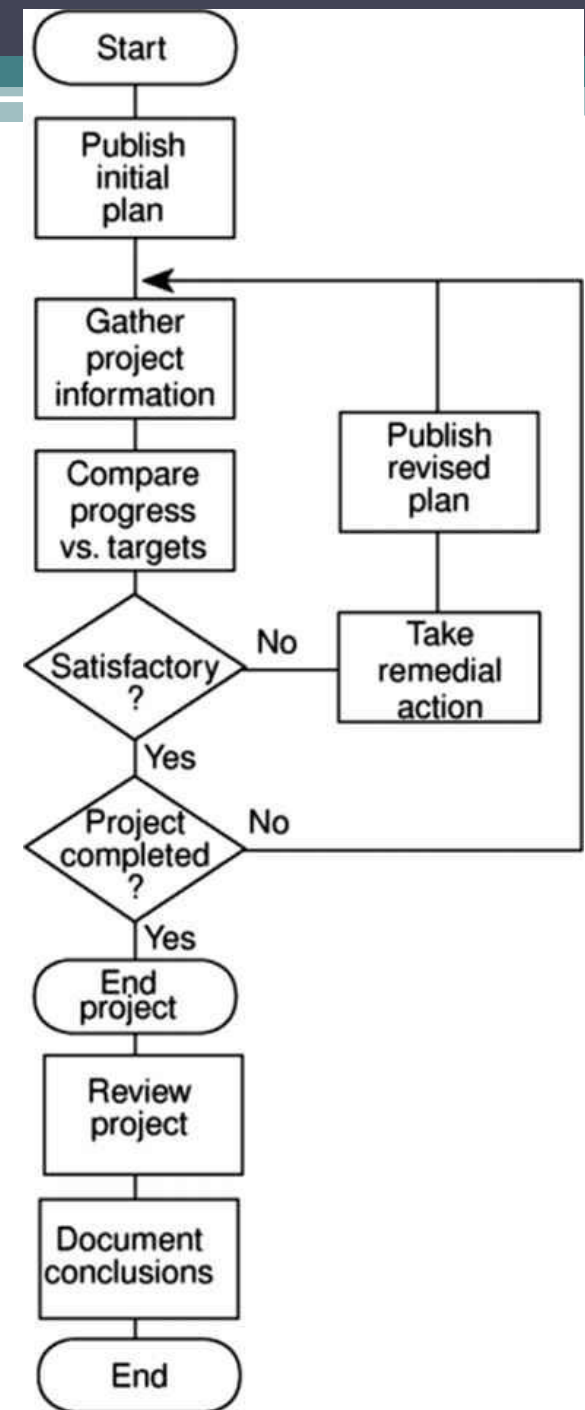
UNIT-4- part 1

Framework for Management and control

- Once work schedules have been published and the project is under way, attention must be focused on ensuring progress.
- This requires monitoring of what is happening, comparison of actual achievement against the schedule and, where necessary, revision of plans and schedules to bring the project as far as possible back on target.

Creating the framework

- Exercising control over a project and ensuring that targets are met is a matter of regular monitoring, finding out what is happening, and comparing it with current targets.
- If there is a mismatch between the planned outcomes and the actual ones then either replanning is needed to bring the project back on target or the target will have to be revised.



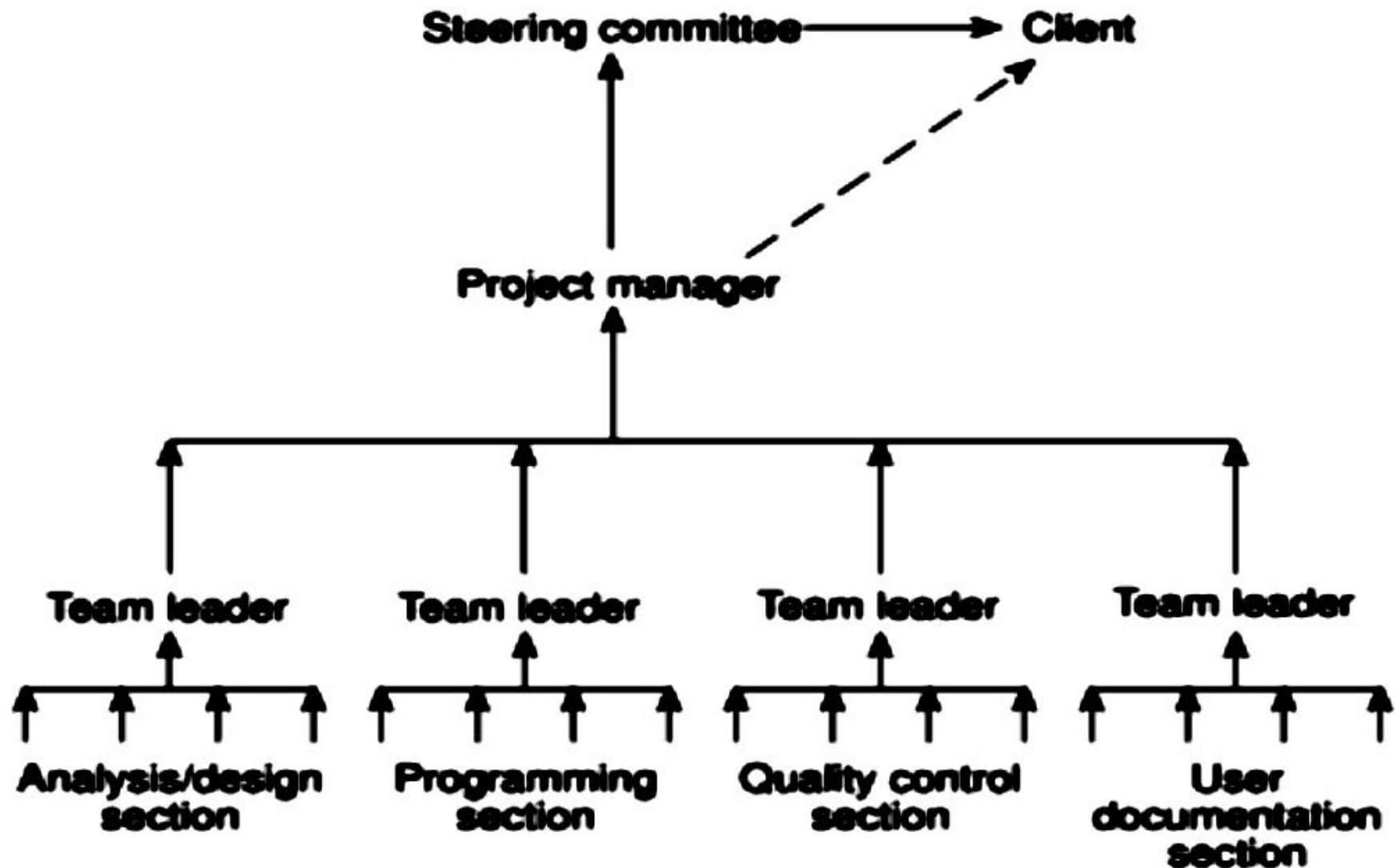
- The project control cycle shows how, once the initial project plan has been published, project control is a continual process of monitoring progress against that plan and, where necessary, revising the plan to take account of deviations.
- It also illustrates the important steps that must be taken after completion of the project so that the experience gained in any one project can feed into the planning stages of future projects, thus allowing us to learn from past mistakes.
- In practice we are normally concerned with delays in meeting target dates, shortfalls in quality, inadequate quality, functionality, and costs going over target.

Responsibility

The overall responsibility for ensuring satisfactory progress on a project is often the role of the project **steering committee or Project Board**.

- Day-to-day responsibility will rest with the project manager and, in all but the smallest of projects, aspects of this can be delegated to team leaders.
- In most cases team leaders will collate reports on their section's progress and forward summaries to the project manager.
- These, in turn, will be incorporated into project-level reports for the steering committee and, via them or directly, progress reports for the client.

Project Reporting Structure



- Reporting may be oral or written, formal or informal, or regular or ad hoc.

<i>Report type</i>	<i>Examples</i>	<i>Comment</i>
Oral formal regular	weekly or monthly progress meetings	while reports may be oral formal written minutes should be kept
Oral formal ad hoc	end-of-stage review meetings	while largely oral, likely to receive and generate written reports
Written formal regular	job sheets, progress reports	normally weekly using forms
Written formal ad hoc	exception reports, change reports	
Oral informal ad hoc	canteen discussion, social interaction	often provides early warning: must be backed up by formal reporting

Assessing progress-

- Progress assessment will normally be made on the basis of information collected and collated at regular intervals or when specific events occur.
- Wherever possible, this information will be objective and tangible - for example: whether or not a particular report has been delivered.
- However, such end-of-activity deliverables might not occur sufficiently frequently throughout the life of the project.
- Here progress assessment will have to rely on the judgement of the team members who are carrying out the project activities.

Setting checkpoints-

- It is essential to set a series of checkpoints in the initial activity plan. Checkpoints may be:
 - regular
 - tied to specific events such as the production of a report or other deliverable.

Taking snap-shots-

- The frequency with which the a manager needs to receive information about progress will depend upon the size and degree of risk of the project or that part of the project under their control.
- Team leaders, for example, need to assess progress daily (particularly when employing inexperienced staff) whereas project managers may find weekly or monthly reporting appropriate.
- In general, the higher the level, the less frequent and less detailed the reporting needs to be.

Collecting the data

- As a rule, managers will try to break down long activities into more controllable tasks of one or two weeks duration.
- However, it will still be necessary to gather information about partially completed activities and, in particular, forecasts of how much work is left to be completed.
- It can be difficult to make such forecasts accurately.

Partial completion reporting-

- Weekly time sheets, for example, are frequently adapted by breaking jobs down to activity level and requiring information about work done in addition to time spent.
- Weekly timesheets are a valuable source of information about resources used. They are often used to provide information about what has been achieved.

Time Sheet						
Staff: <u>Paul</u>				Week ending: <u>14/05/99</u>		
Rechargeable hours						
Project	Act. code	Desc.	Hours	% done	Sch. date	Est. date
P20	A267	Code mod A7	24	90	01/06/99	20/05/99
P35	B397	Testing mod B8	12	30	24/06/99	24/06/99
Total			36			
Non-rechargeable hours						
Code	Desc.	Hours	Comments and Authorization			
L90	hours in Lieu	4	Authorized by Peter			
Total		4				

Risk reporting-

One popular way of overcoming the objections to partial completion reporting is to avoid asking for estimated completion dates, but to ask instead for the team members' estimates of the likelihood of meeting the planned target date.

One way of doing this is the traffic-light method. This consists of the following steps:

- identify the key (first level) elements for assessment in a piece of work;
- break these key elements into constituent elements (second level);

assess each of the second level elements on the scale green for 'on target', amber for 'not on target but recoverable', and red for 'not on target and recoverable only with difficulty';

- review all the second level assessments to arrive at first level assessments;
- review first and second level assessments to produce an overall assessment.

cont... example

Activity Assessment Sheet

Staff : Zobel

Ref:IoE/P/100

Activity: Code and test module A

Week number	13	14	15	16	
Activity summary	G	A	R		
Component					Comments
Screen handling procedures	G	G	A		
File updating	G	A	R		
Compilation	G	G	A		
Run test data	G	A	A		

Monitoring progress

- monitoring time of each activity &
- monitoring cost in parallel
- To monitor time we need tool to visualize the progress project from collected data and present them in way that is easy to understand
- Further helps to identify the problem activities and areas to be taken care of.

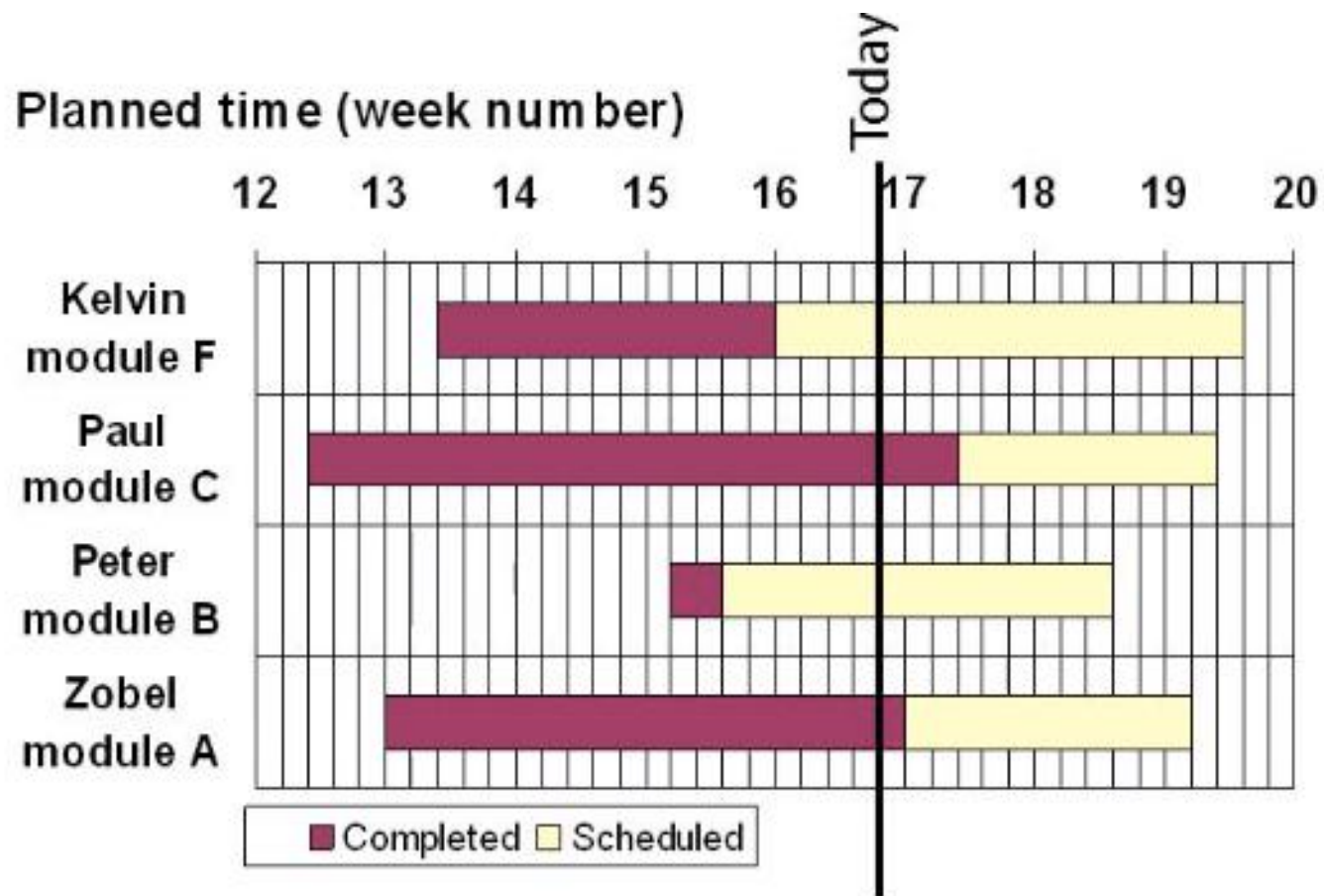
Visualizing progress

- Having collected data about project progress, a manager needs some way of presenting that data to greatest effect.

The Gantt chart

- One of the simplest and oldest techniques for tracking project progress is the Gantt chart.
- This is essentially an activity bar chart indicating scheduled activity dates and durations frequently augmented with activity floats.
- Reported progress is recorded on the chart (normally by shading activity bars) and a 'today cursor' provides an immediate visual indication of which activities are ahead or behind schedule.

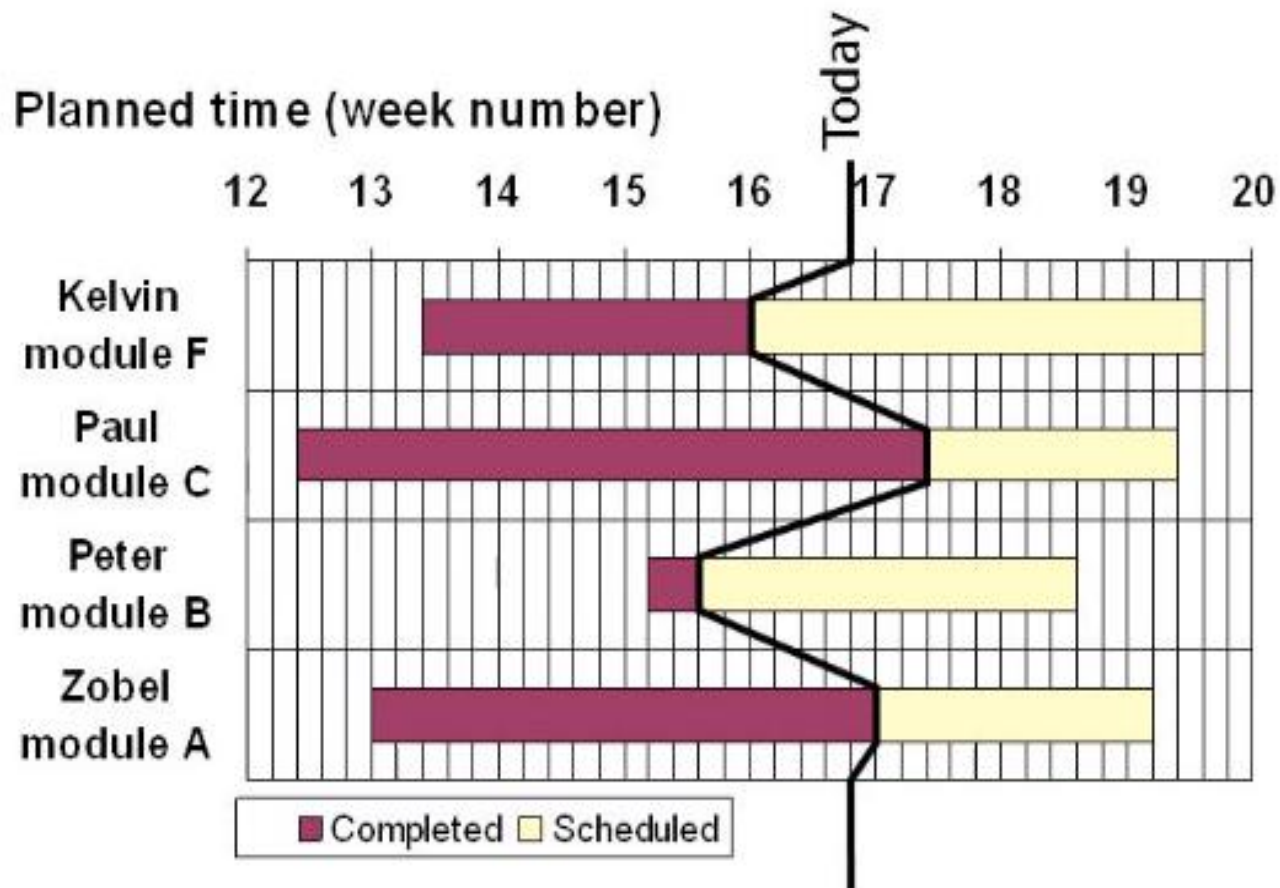
Gantt chart



The slip chart

- A slip chart is a very similar alternative favoured by some project managers who believe it provides a more striking visual indication of those activities that are not progressing to schedule - the more the slip line bends, the greater the variation from the plan.
- Additional slip lines are added at intervals and, as they build up, the project manager will gain an idea as to whether the project is improving (subsequent slip lines bend less) or not.
- A very jagged slip line indicates a need for rescheduling.

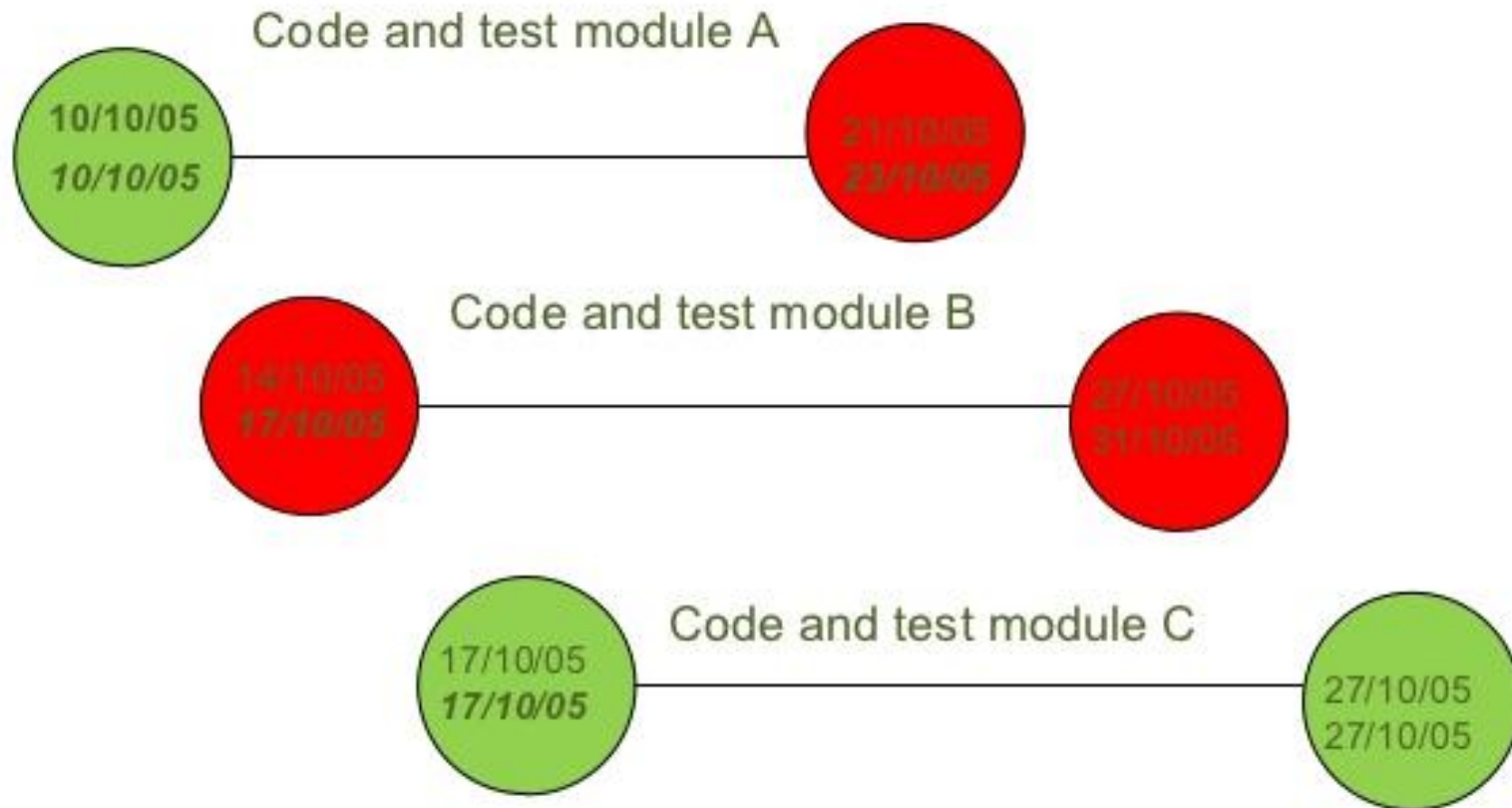
Slip chart



Ball charts

- A somewhat more striking way of showing whether or not targets have been met is to use a ball chart.
- In this version of the ball chart, the circles indicate start and completion points for activities.
- The circles initially contain the original scheduled dates.
- Whenever revisions are produced these are added as second dates in the appropriate circle until an activity is actually started or completed when the relevant date replaces the revised estimate.
- Circles will therefore contain only two dates, the original and most recent target dates, or the original and actual dates.

Ball charts



Green: On time

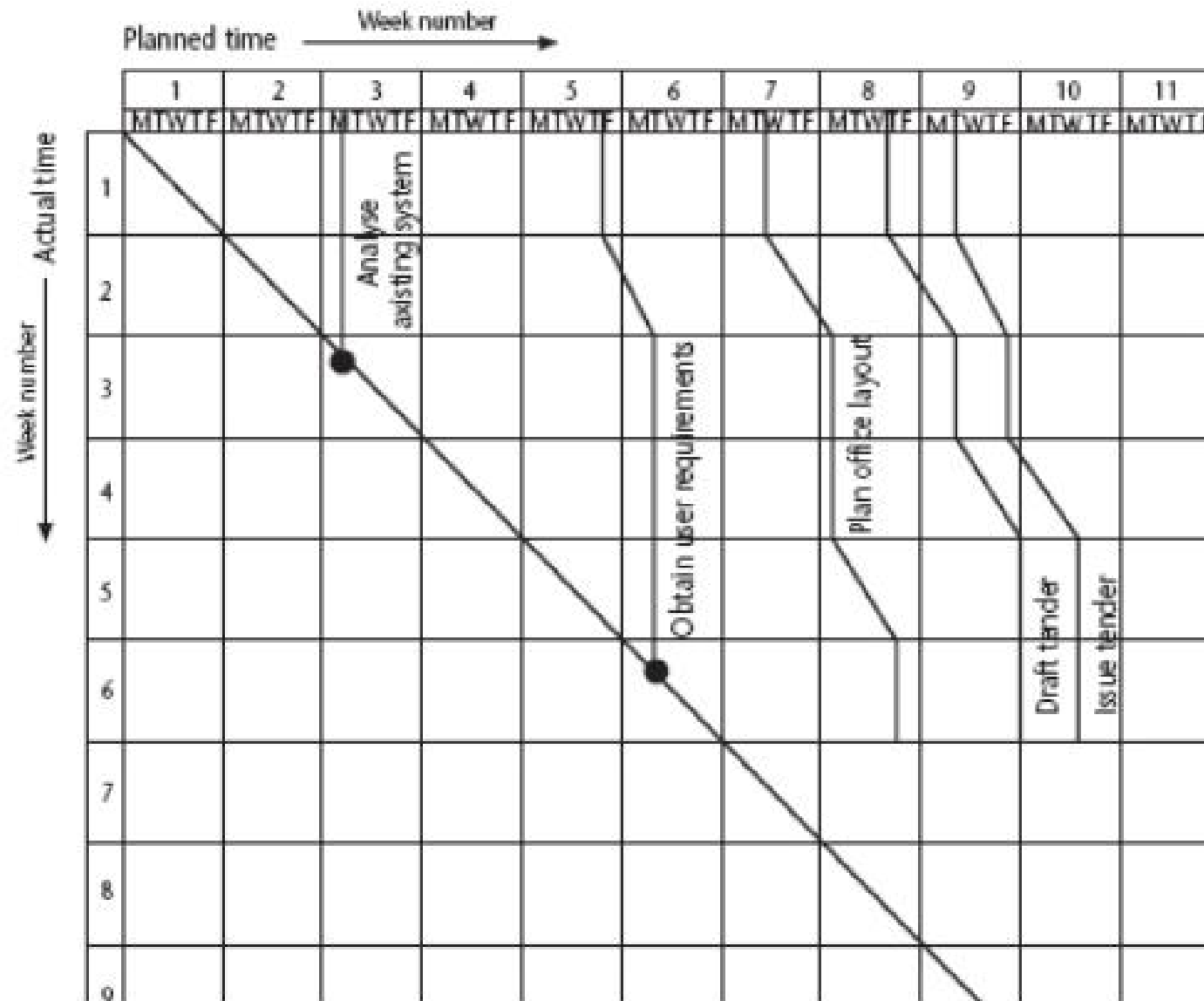
Red: Missed the target

Timeline

- One disadvantage of the charts described so far is that they do not show clearly the slippage of the project completion date through the life of the project.
- Knowing the current state of a project helps in revising plans to bring it back on target, but analysing and understanding trends helps to avoid slippage in future projects.
- The timeline chart is a method of recording and displaying the way in which targets have changed throughout the duration of the project.
- The timeline chart is useful both during the execution of a project and as part of the post-implementation review. Analysis of the timeline chart, and the reasons for the changes, can indicate failures in the estimation process or other errors that might, with that knowledge, be avoided in future.

The timeline

Records the way targets have changed throughout the project



Change control

- Requirements are modified because of changing circumstances or because the users get a clearer idea of what is really needed.
- The payroll system that is implementing might, for instance, need to be adjusted if the staffing structure at the college is reorganized.
- Careful control of these changes is needed because an alteration in one document often implies changes to other documents and the system products based on that document.
- A change in a program specification will normally be carried through into changes to the program design and then changed code.

Change control procedures

A simple change control procedure for operational systems might have the following steps.

1. One or more users might perceive a need for a modification to a system and ask for a change request to be passed to the development staff.
2. The user management consider the change request and if they approve it pass it to the development management.
3. The development management delegate a member of staff to look at the request and to report on the practicality and cost of carrying out the change. They would, as part of this, assess the products that would be affected by the change.
4. The development management report back to the user management on the findings and the user management decide whether, in view of the cost quoted, they wish to go ahead.

5. One or more developers are authorized to take copies of the master products that are to be modified.
6. The copies are modified. In the case of software components this would involve modifying the code and recompiling and testing it.
7. When the development of new versions of the product has been completed the user management will be notified and copies of the software will be released for user acceptance testing.
8. When the user is satisfied that the products are adequate they will authorize their operational release. The master copies of configuration items will be replaced.