UNIT 6:
MONITORING AND CONTROL

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Includes…

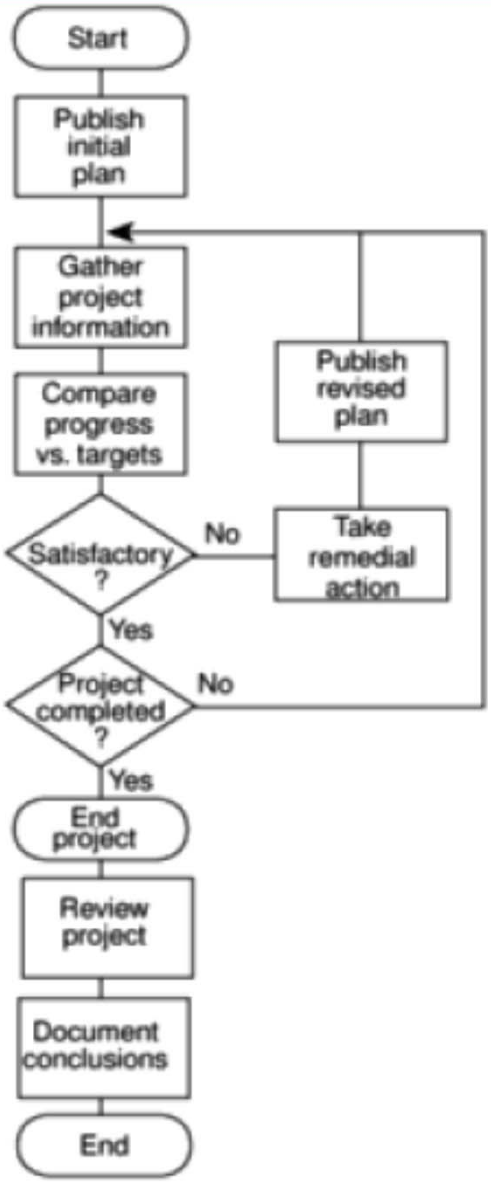
1. Software configuration management
2. SCM tasks and roles
3. Risk Management
4. Risk Management Process
5. SPM Tools

Prelude

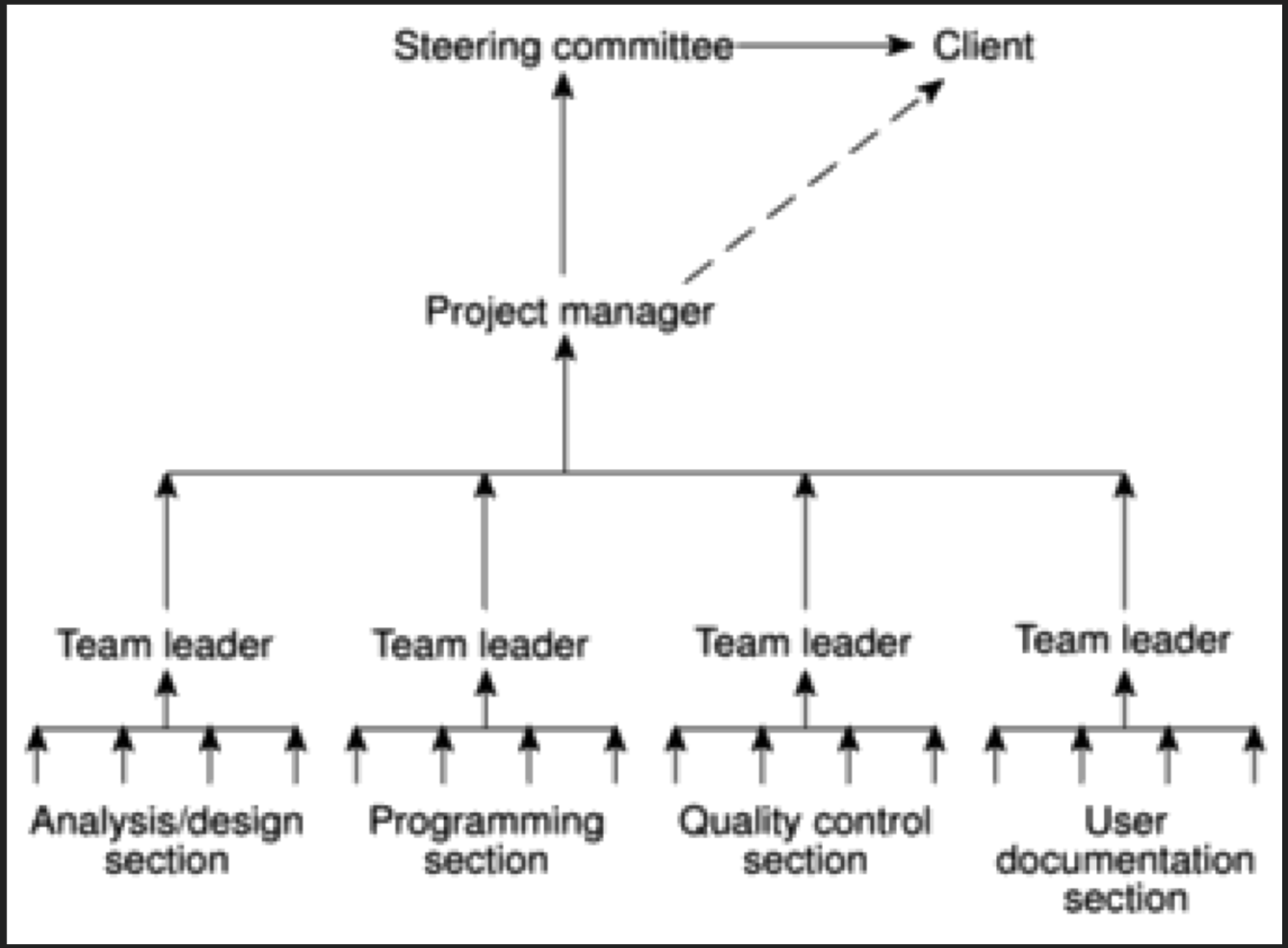
- Once work schedules have been published and the project is under way, attention must be focused on ensuring progress
- This requires **monitoring**
  - What is happening?
  - Comparison of actual achievement against the schedule
  - Revision of plans and schedules to bring project as far as possible back on target

Creating the framework

Fig: The project control cycle



Creating the framework -- Responsibility



Creating the framework -- Responsibility

Table 9.1 *Categories of reporting*

Report type	*Examples*	*Comment*
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

Setting Checkpoints

- It is essential to set a series of checkpoints in the initial activity plan
- Check points may be:
  - Regular (monthly)
  - Tied to specific events such as the production of a report or other deliverables

Taking snapshots

- Formal weekly collection of information from staff carrying out activities.
- Collecting data at the end of each week ensures that information is provided while memory is relatively fresh and provides a mechanism for individual s to review and reflect upon their progress during the past few days
- **Short, Monday morning team progress meetings are a common way of motivating staff to meet short term targets**

Collecting data

- As a rule, managers will try to break down long activities into more controllable tasks of one or two weeks duration.
- But it is still necessary to **gather information** about partially completed activities and, in particular, forecasts of how much work is left to be completed.
- If there is a series of product, partial completion of activities is easier to estimate. >>>>>> counting the number of record specification or screen layout, for example can provide a reasonable measure of progress

Partial Completion Reporting

- Weekly time sheets are a valuable source of information about resources used
- They are often used to provide information about what has been achieved.

Time Sheet

Staff John Smith **Week ending** 26/3/99

Rechargeable hours

Project	Activity code	Description	Hours this week	% Complete	Scheduled completion	Estimated completion
P21	A243	Code mod A3	12	30	24/4/99	24/4/99
P34	B771	Document take-on	20	90	1/4/99	29/3/99

Total recharged hours	32

Non-rechargeable hours

Code	Description	Hours	Comment & authorization
z99	day in lieu	8	Authorized by RB

Total non-rechargeable hours	8

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 team members' estimate of the likelihood of meeting the planned target date.
- Traffic Light Method (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 assessment
  - Review first and second level assessments to produce an overall assessment

Visualizing Progress

- Having collected data about project progress, a manager needs a way for presenting tat data to greatest effect
- Gantt Chart
- Slip Chart
  - 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 fro the plan
- Ball Charts
  - More striking way of showing whether or not targets have been met.
  - The circles initially contain the original schedule 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.
  - Circle will contains only two dates: the original and most recent target dates or the original and actual dates.

Slip Chart

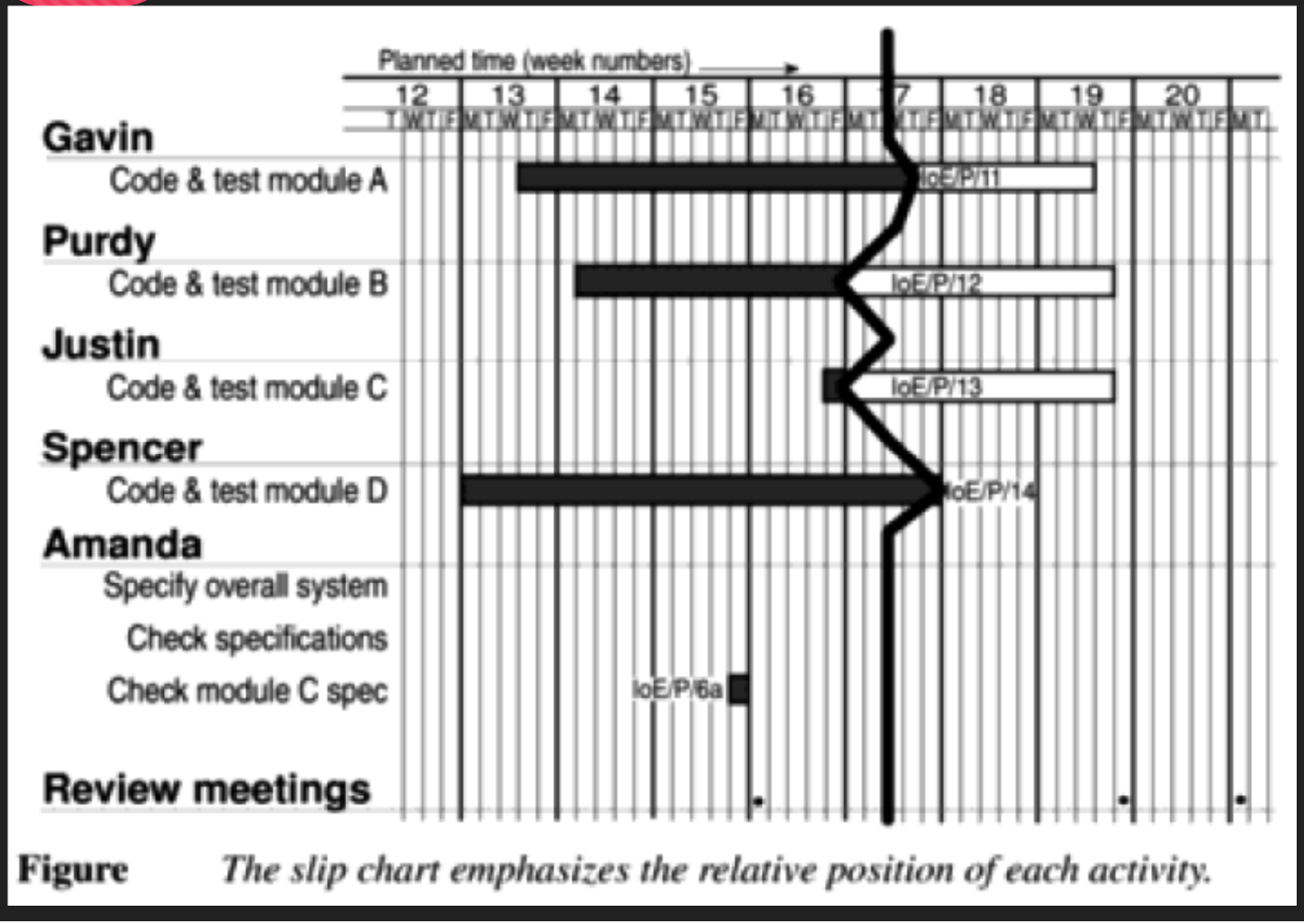


Figure *The slip chart emphasizes the relative position of each activity.*

Ball Chart

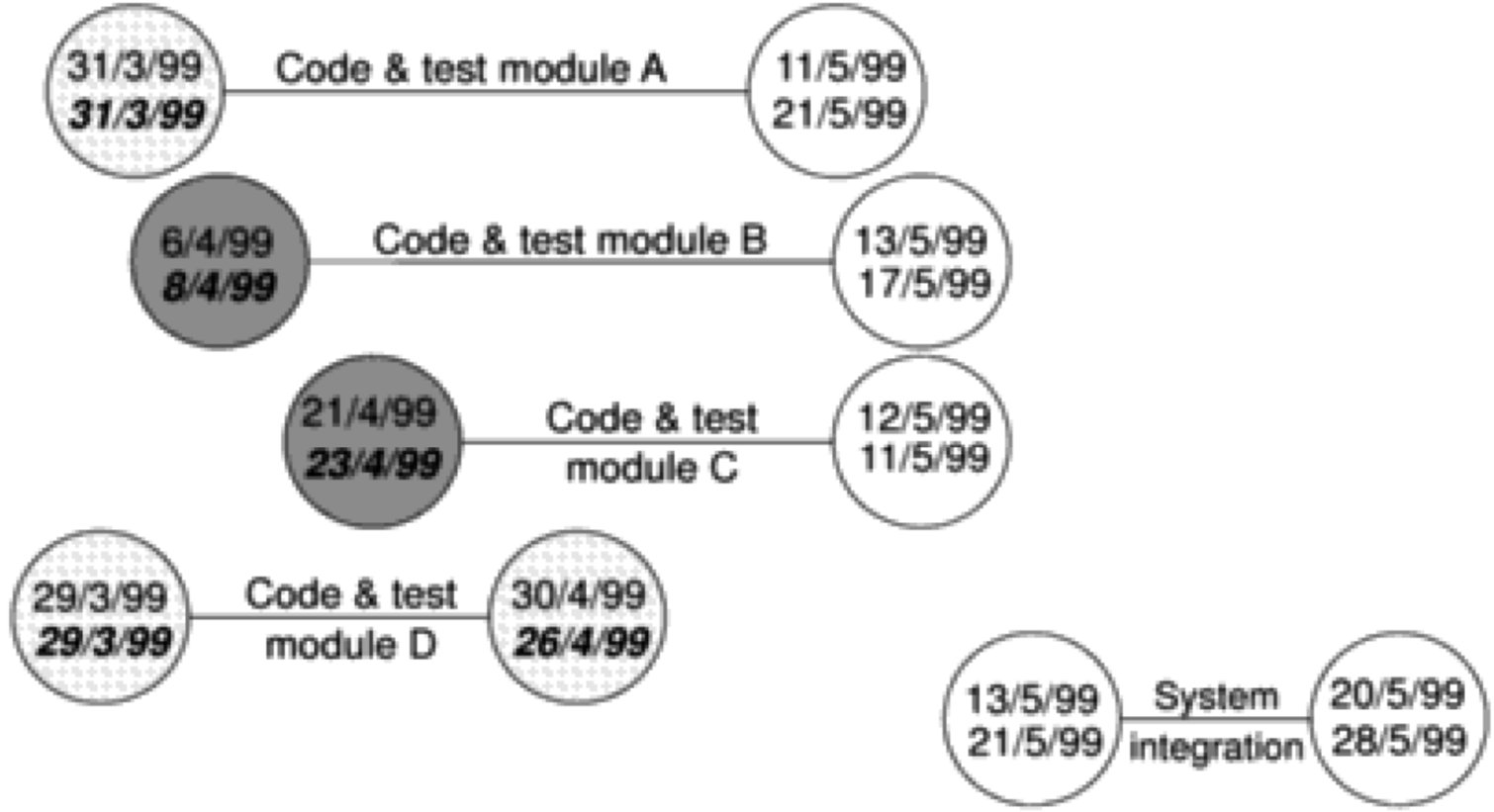


Figure *The ball wall chart provides an incentive for meeting targets.*

Cost Monitoring

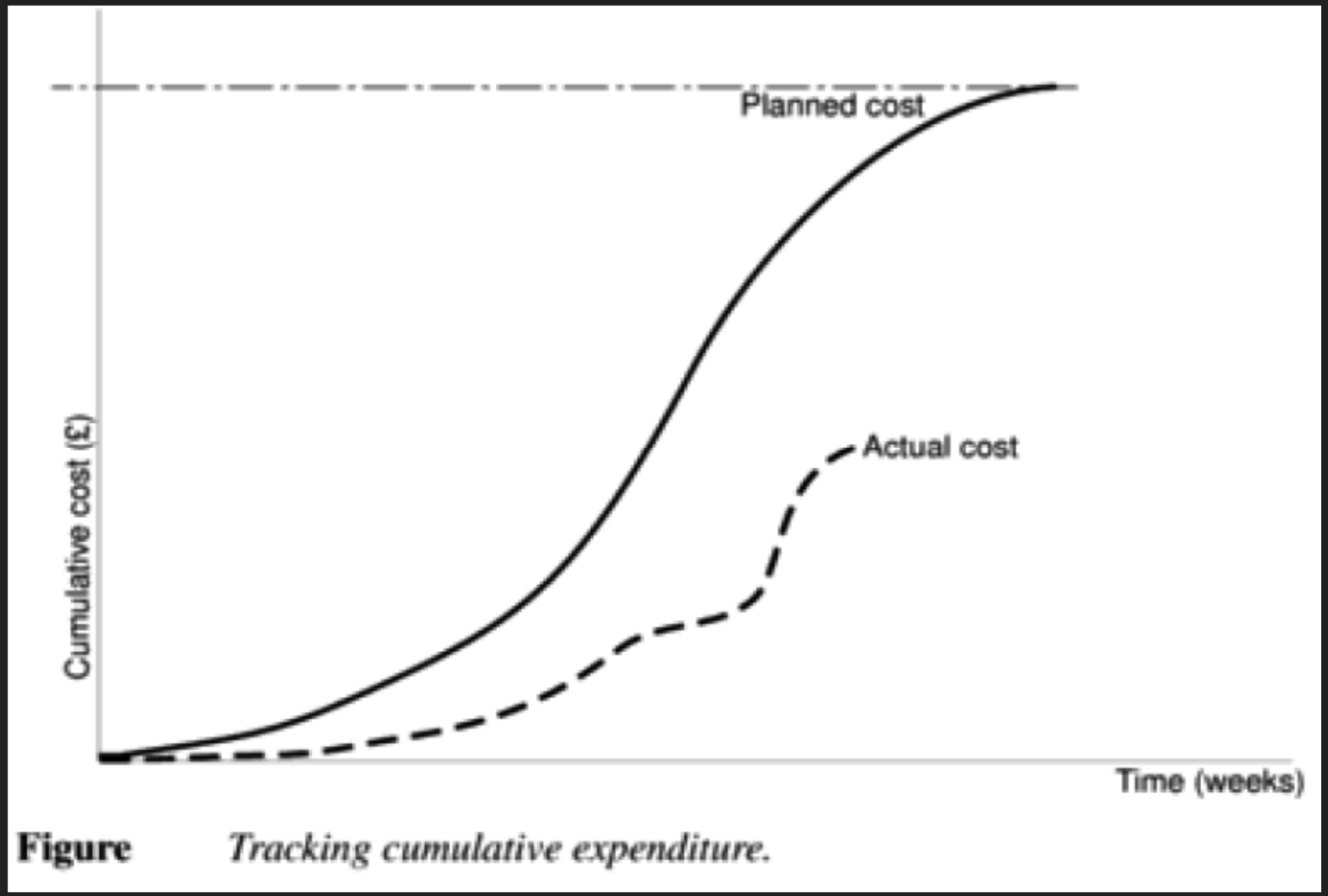


Figure *Tracking cumulative expenditure.*

Prioritizing Monitoring

- Monitoring takes time and uses resources that might sometimes be put to better use!
- **Critical Path Activities:** Any delay in an activity on the critical path will cause a delay in the completion date for the project. Critical path activities therefore are likely to have a very high priority for close monitoring.
- **Activities with no free float :** A delay in any activity with no free float can have serious effects on resource schedule. (Free float is the amount of time an activity may be delayed without affecting any subsequent activity)
- **Activities with less than a specified float:** It is common practice to monitor closely those activities with less than, say one week free float
- **High Risk Activities:** These activities will be given close attention because they are most likely to overrun or overspend
- **Activities using critical resources:** Activities can be critical because they are very expensive. In any event, an activity that demands a critical resource requires a high level of monitoring.

Getting the project back to target

- Shortening the Critical path
  - The overall duration of a project is determined by the current critical path, so speeding up non critical path activities will not bring forward a project completion date.
- Reconsider the precedence network
  - If attempting to shorten critical activities proves insufficient, the next step is to consider the constraints by which some activities have to be deferred pending completion of others

Change Control

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.

Thank your for listening patiently

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Any Queries?