



# IT Project Management

Topic 4

**Schedule  
Management**



# READING

Schwalbe Chapter 6



# LEARNING OBJECTIVES

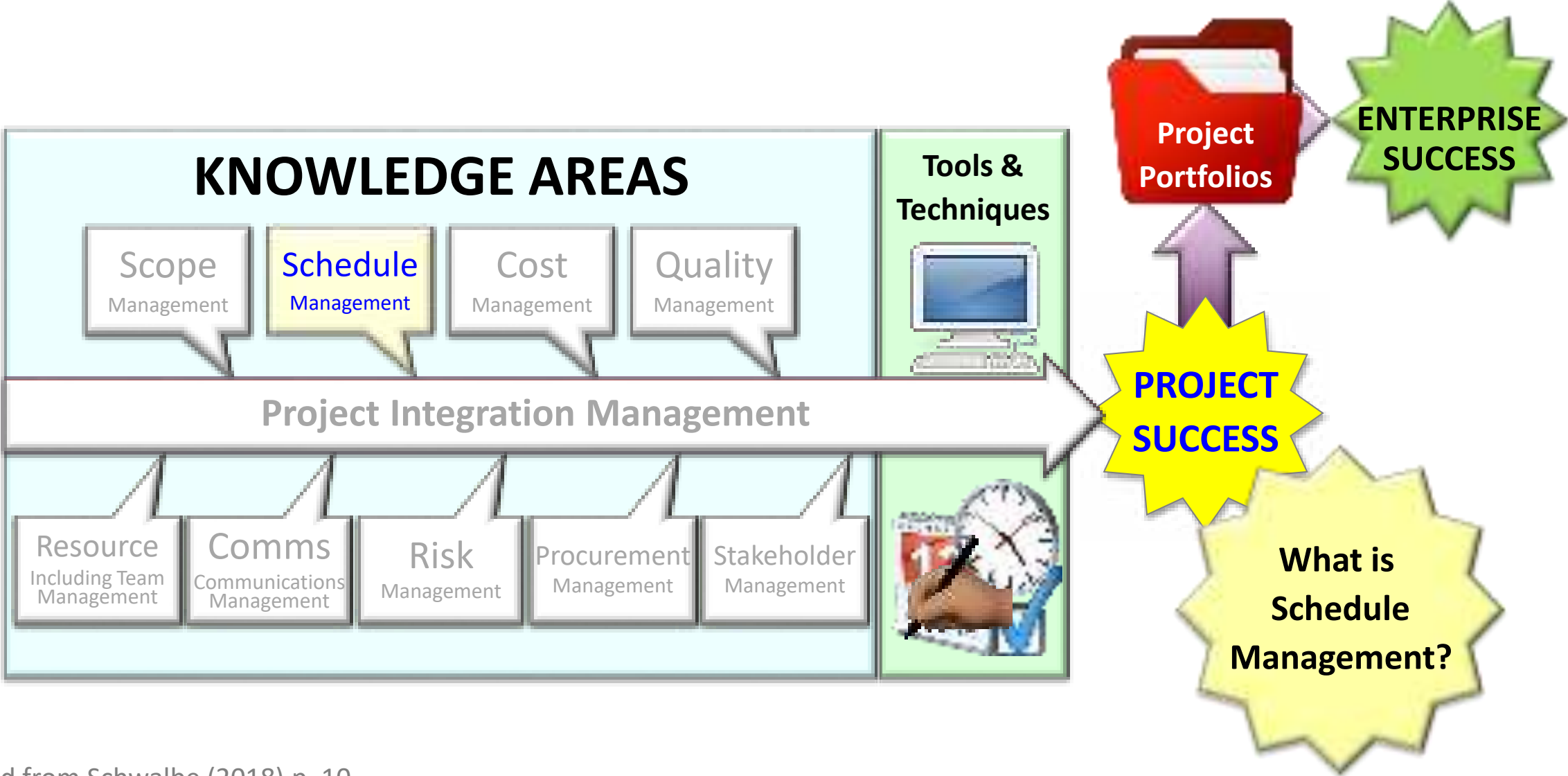
At the end of this topic you should be able to:

- ✓ **Discuss** the importance of project schedules and good project schedule management
- ✓ **Define** activities as the basis for developing project schedules
- ✓ **Describe** the relationship between estimating resources and project schedules
- ✓ **Apply** some tools and techniques used to determine activity sequencing and duration estimation
- ✓ **Discuss** how Critical Chain Scheduling (CCS) and the Program Evaluation and Review Technique (PERT) affect schedule development

# AN INTRODUCTION TO SCHEDULE MANAGEMENT

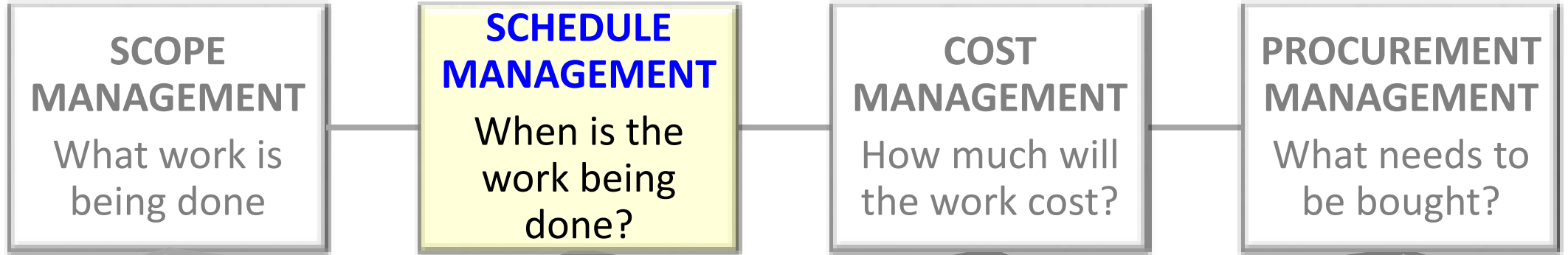
# OVERVIEW - PMBOK APPROACH

Stakeholders' needs & expectations



Source: Adapted from Schwalbe (2018) p. 10

# THE KNOWLEDGE AREAS



# WHY IS SCHEDULE MANAGEMENT IMPORTANT?



- ✓ Time flies on a project
- ✓ Time becomes one of your biggest problems (it impacts on flexibility and all aspects of delivery)

Therefore...

# WHAT DOES SCHEDULE MANAGEMENT DO?

- ✓ Impacts on every aspect of the project (Scope, Cost, Procurement, Quality Assurance, Resource, Risk, Comms & Stakeholder Management)
- ✓ Drives the setting of deadlines for delivery and planning of projects
- ✓ Defines the sequencing of activities (critical aspect of planning)





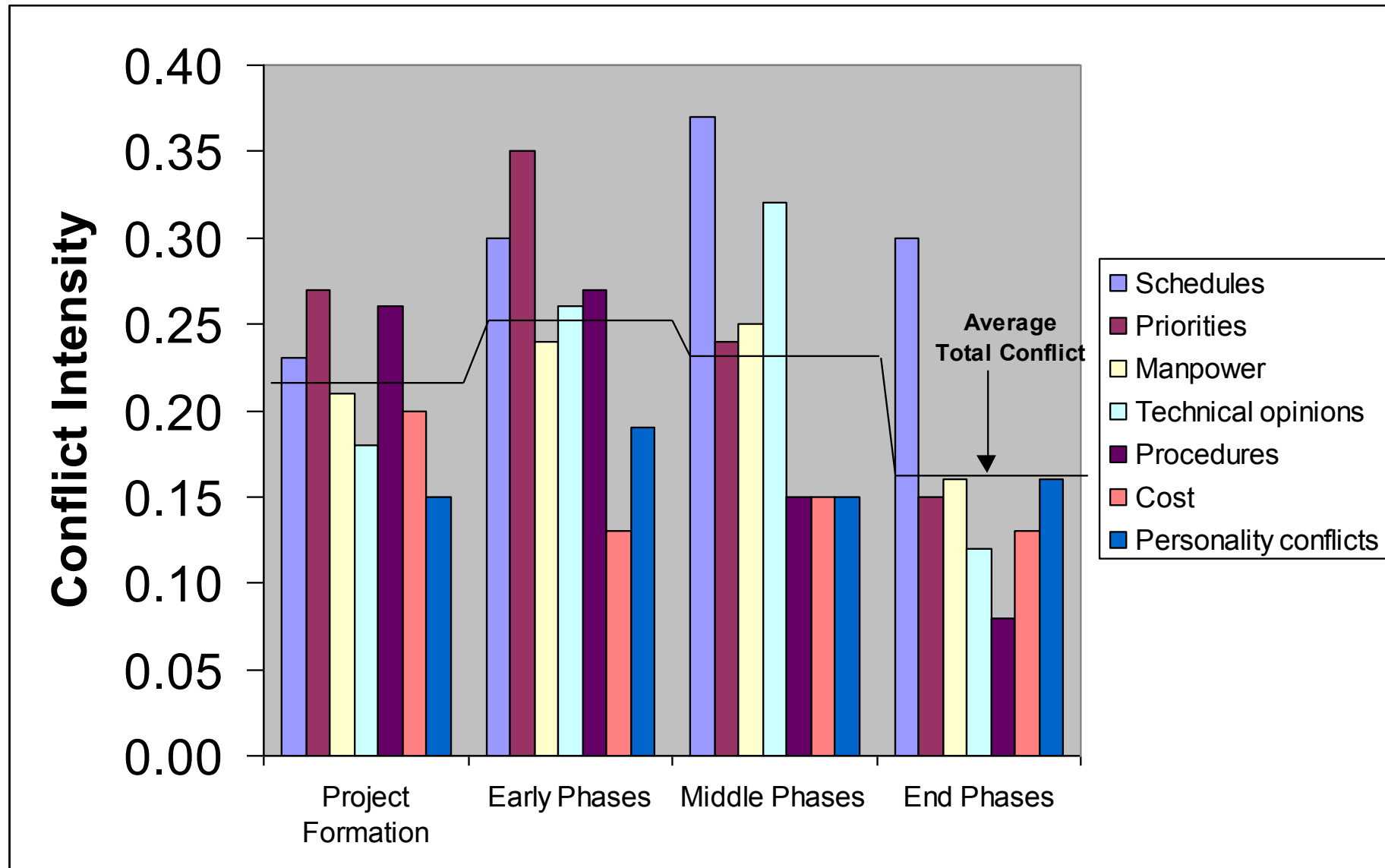
# WHAT DOES SCHEDULE MANAGEMENT DO?

- ✓ Helps to control pricing and cost of delivery (longer times cost more – time is money)
- ✓ Helps to ensure that conflicts between tasks can be managed properly (and proactively)

Let's look at this...

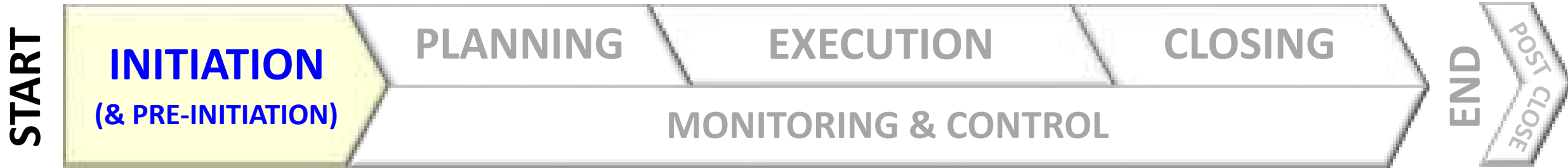


# CONFLICT OVER THE LIFE OF A PROJECT



# **ELEMENTS & PROCESSES FOR SCHEDULE MANAGEMENT**

# WHEN DOES SCHEDULE MANAGEMENT GET DONE?

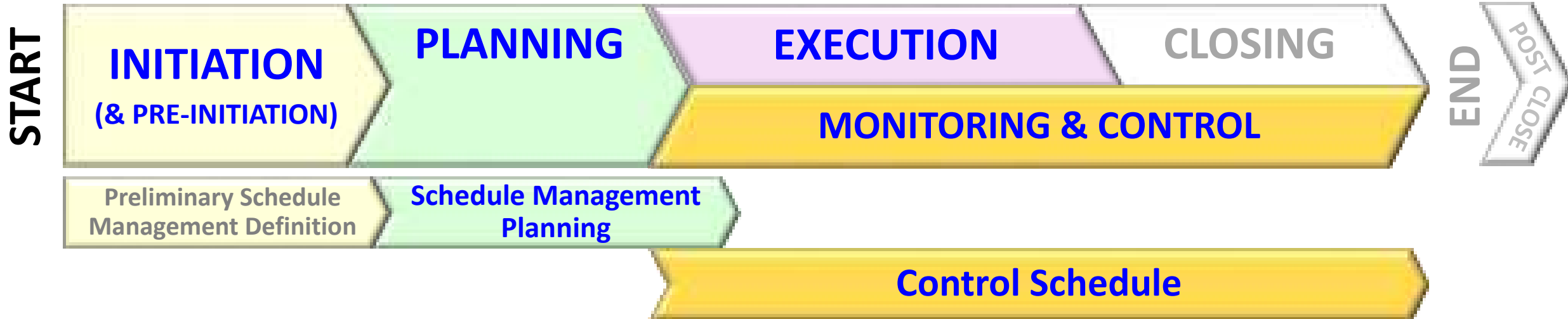


Preliminary Schedule Management Definition



- ✓ Initial estimates are done during the project analysis
- ✓ These inform the following Planning Phase (*and therefore need to be done carefully*)

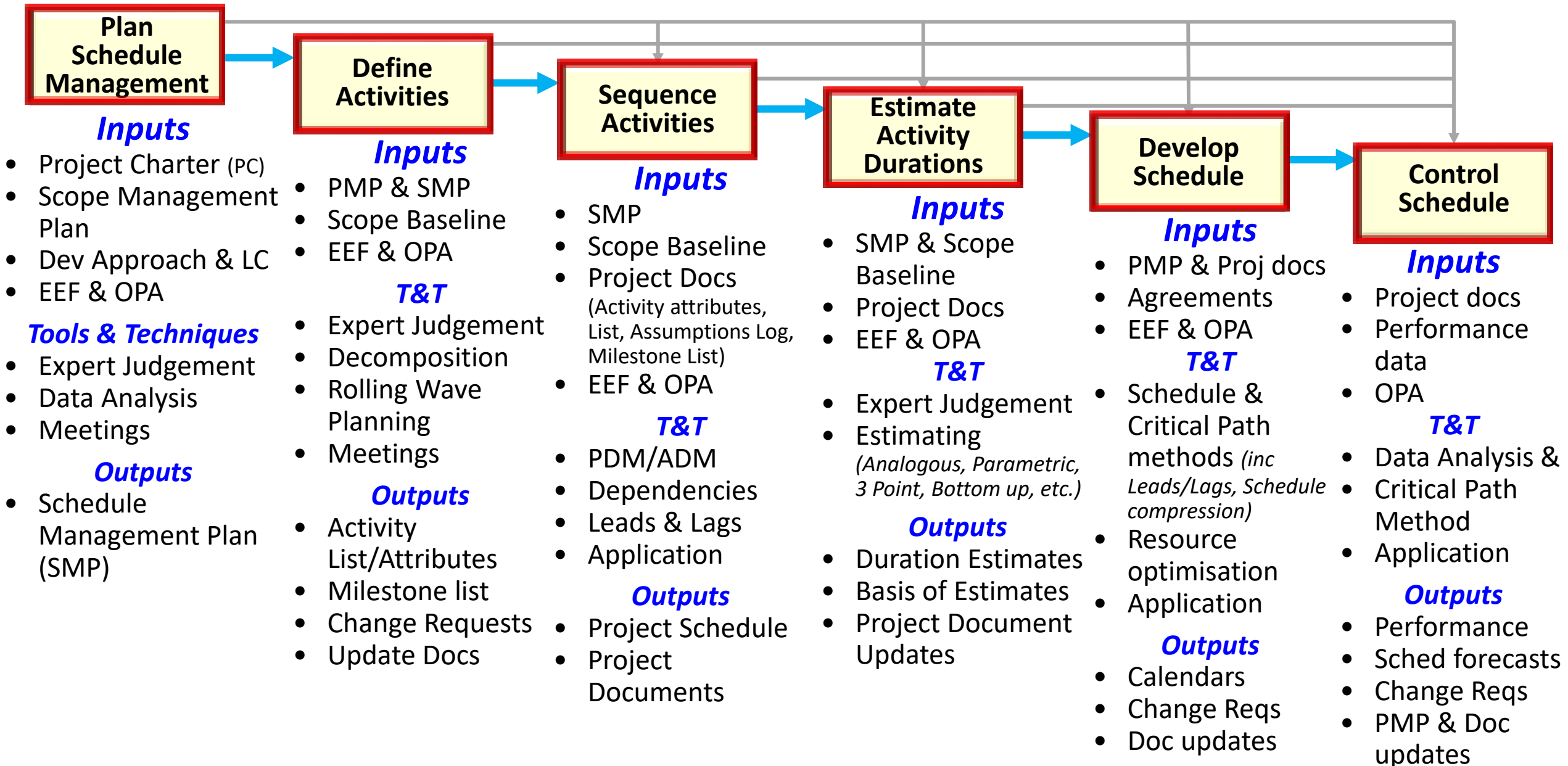
# WHEN DOES SCOPE MANAGEMENT GET DONE?



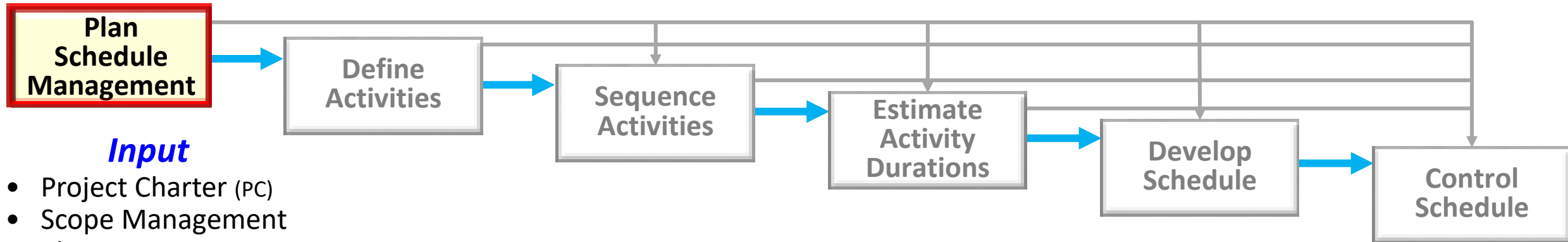
- ✓ Key scheduling gets **rationalised/clarified** during the Planning phase
- ✓ **Managed** during the Execution/Closing/Monitoring and Control phases

Let's look at the steps

# WHAT ARE THE STEPS?



# PLAN SCHEDULE MANAGEMENT



## *Input*

- Project Charter (PC)
- Scope Management Plan
- Dev Approach & LC
- EEF & OPA

## *Tools & Techniques*

- Expert Judgement
- Data Analysis
- Meetings

## *Outputs*

- Schedule Management Plan (SMP)

# PLAN SCHEDULE MANAGEMENT

- ✓ Create a Schedule Management Plan (SMP) which can include:
  - **Project schedule model** development (High level listing of project elements)
  - The scheduling methodology (information on the selected method – Task Lists, **Gantt Charts**, Calendars, etc.)
  - Level of accuracy, units of measure & control thresholds (states how accurate estimates/measures should be)





# PLAN SCHEDULE MANAGEMENT

- ✓ Create a Schedule Management Plan (SMP) which can include:
  - Rules for performance monitoring (determining granularity of measurement and control)
  - Reporting formats (format & frequency of scheduled reporting)
  - Process descriptions (Explains how the processes will work)



# PLAN SCHEDULE MANAGEMENT

- ✓ To create this - draw on previous experience and data from:
  - Previous similar project SMPs/schedules
  - Lessons Learnt
  - Other previous project documents and systems (*OPA: Organisational Process Assets*)

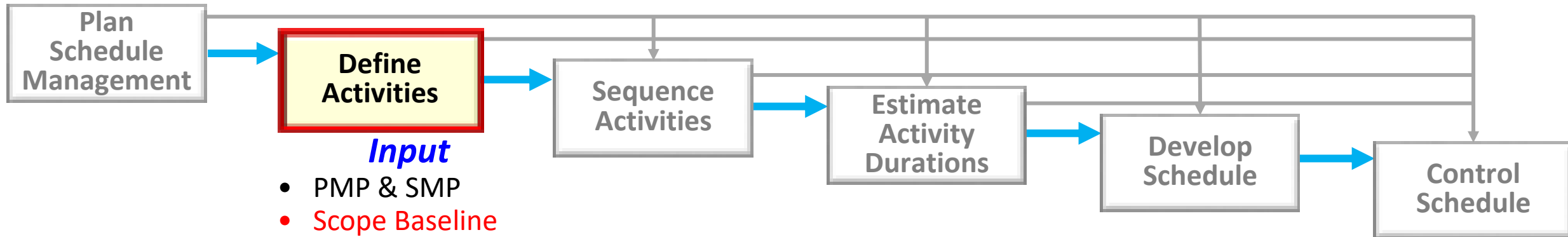
And – Just as importantly...



# PLAN SCHEDULE MANAGEMENT

- ✓ Use **expert judgment**, analytical techniques, and meetings to develop the Schedule Management Plan
- ✓ It's all about **talking to & listening to the experts** (*individually or in meetings*)

# DEFINE ACTIVITIES



## Define Activities

### *Input*

- PMP & SMP
- **Scope Baseline**
- EEF & OPA

### *T&T*

- Expert Judgement
- Decomposition
- Rolling Wave Planning
- Meetings

### *Outputs*

- **Activity List/Attributes**
- **Milestone list**
- Change Requests
- Update Docs

# WHAT IS AN ACTIVITY?

- ✓ An **activity** or **task** is an **element of work normally found in the WBS** that has an expected **duration**, a **cost**, and **resource** requirements
- ✓ Developed from preliminary documents – for example:
  - Project Charter (See Topic 2)
  - Project Management Plan (See Topic 2)
  - Scope Statements (See Topic 3)
  - Work Breakdown Structure (See Topic 3)

Define Activities/Tasks through...

# ACTIVITY LISTS & ATTRIBUTES

- ✓ An **Activity List** is a graphical/tabular system for defining activities/tasks (e.g. *Whiteboard*, *Excel*, *Word* or *Project*) that can include this type of information:
  - An activity identifier or number
  - The activity name (*Make sure it contains a definable achievement*)
  - An appropriate description and **Activity Attributes**



# ACTIVITY LISTS & ATTRIBUTES

- ✓ **Activity attributes** provide details, such as:
  - predecessors/successors
  - logical relationships
  - leads and lags
  - resource requirements
  - constraints/imposed dates
  - assumptions



# ACTIVITY LISTS & ATTRIBUTES

- ✓ **Activity Attributes** are:
  - sometimes provided in **separate documents**
  - **commonly defined in tools like MS Project** (they can be very complex particularly when not using tools like MS Project)





# MILESTONES

- ▶ A **milestone** is a significant event that normally has **no duration**
- ▶ Milestones are useful for **setting schedule goals** and monitoring progress (**typically takes numerous Activities to complete a milestone – Think about Hard/Soft wall**)
- ▶ Examples include completion and **customer sign-off** on **key documents** and **completion of specific products**



These should be designed in line with SMART

# MILESTONES



**S** **Specific:** Be clear and give basic knowledge of the issues

**M** **Measurable:** Help determine the degree to which the project is progressing

**A** **Achievable:** Must be realistic, practical & attainable

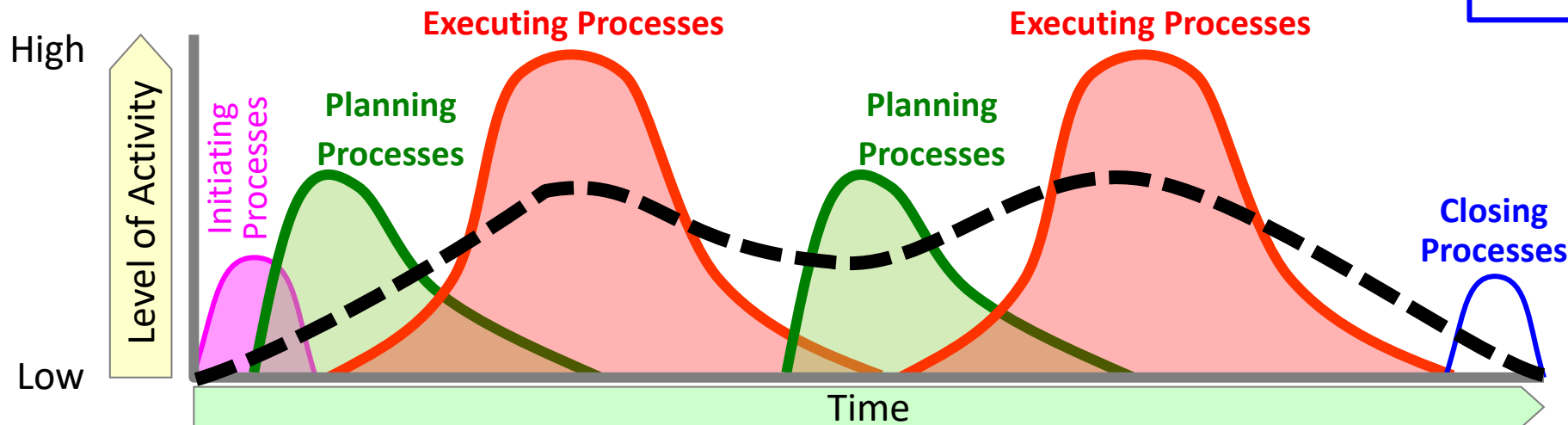
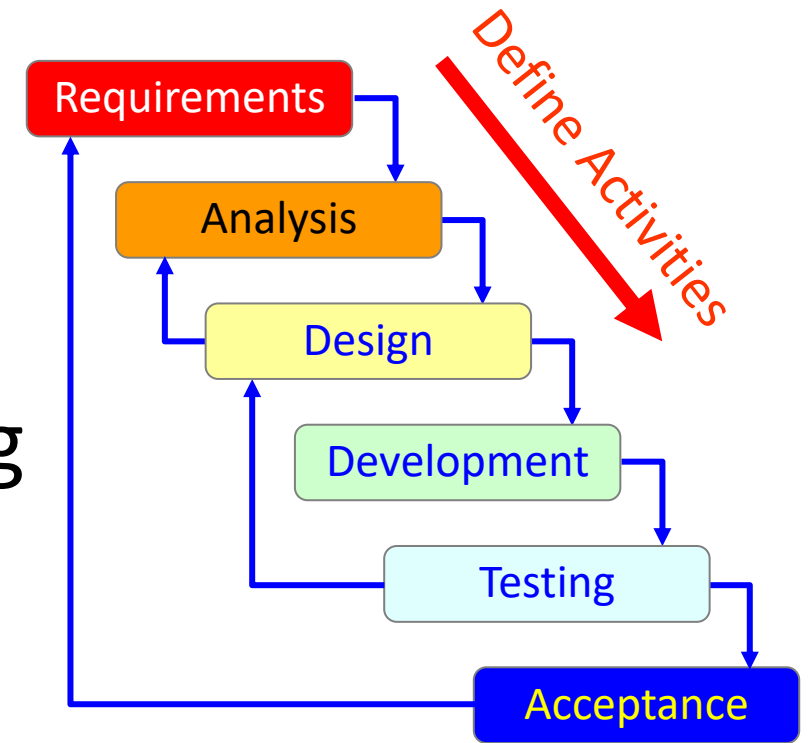
**R** **Relevant:** Tied to priorities designed to deliver the required outcome

**T** **Time-Bound:** Should provide clear deadlines

Refined in  
Sequence

# IS THIS ALL DONE AT THE BEGINNING?

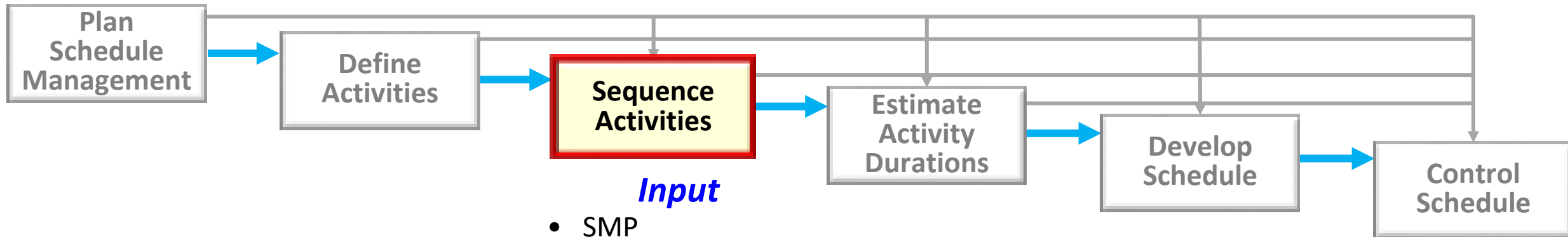
- ✓ Sometimes (e.g. Waterfall Lifecycle)
- ✓ But nowadays Rolling Wave Planning is common (For other Lifecycles)



Rolling wave used for all steps

Monitor & Control Processes

# SEQUENCE ACTIVITIES



## *Input*

- SMP
- Scope Baseline
- Project Docs  
(Activity attributes, List, Assumptions Log, Milestone List)
- EEF & OPA

## *T&T*

- PDM/ADM
- Dependencies
- Leads & Lags
- Application

## *Outputs*

- Project Schedule
- Project Documents

# SEQUENCE ACTIVITIES

- ✓ Activities/Milestones defined in the preceding steps are now sequenced
- ✓ Involves determining how tasks fit together
- ✓ Done by determining dependencies/relationships (what goes first, next, last, etc.)
- ✓ You **must determine dependencies** in order to use critical path analysis



What are the types of dependency?

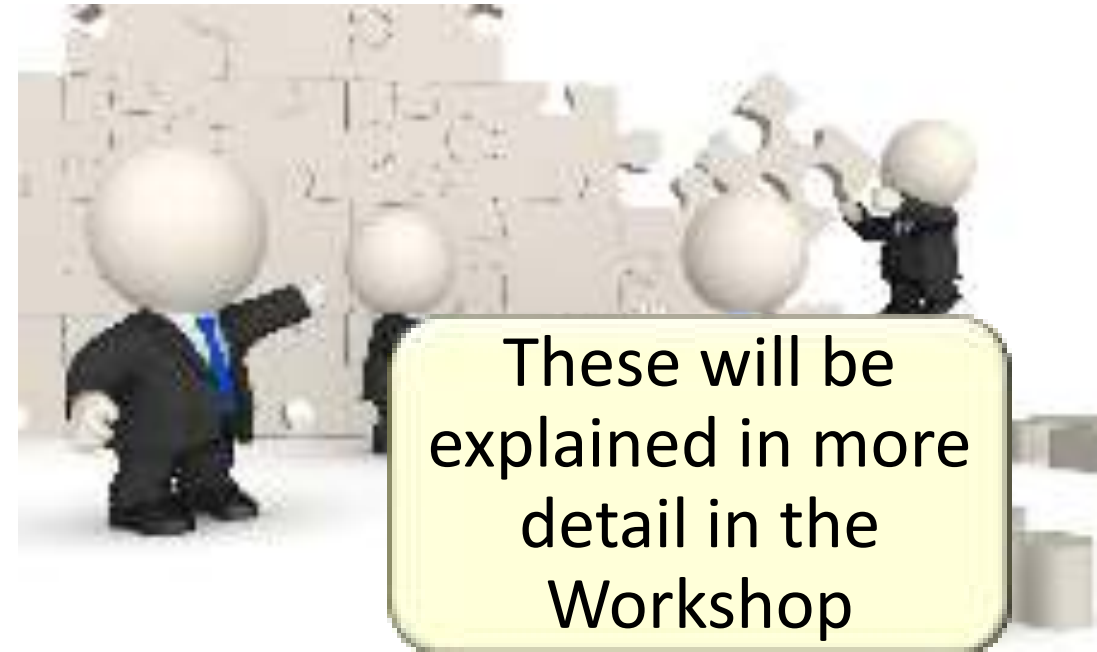
# TYPES OF DEPENDENCIES

- 1. Mandatory dependencies:** inherent in the nature of the work being performed on a project (sometimes referred to as hard logic)
- 2. Discretionary dependencies:** defined by the project team based on choices (sometimes referred to as soft logic – care should be used with this one as it can cause ‘project bloat’)
- 3. External dependencies:** involve relationships between project and non-project activities (e.g. vendor or third-party activities)

What’s a good way to understand these?

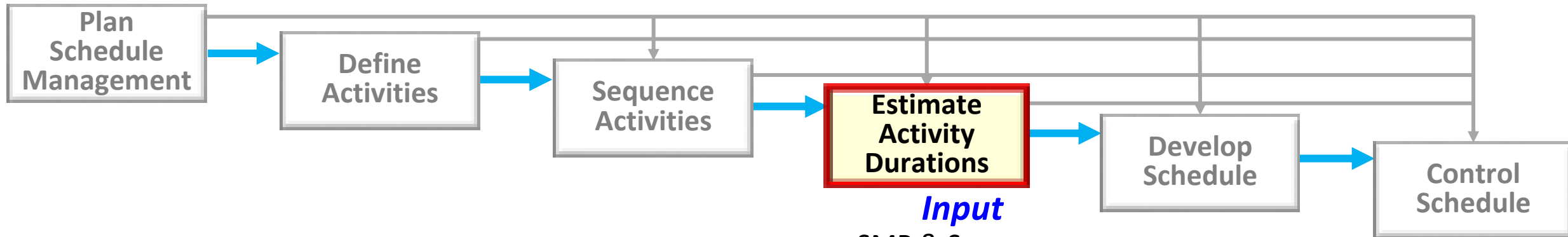
# NETWORK DIAGRAMS

- ✓ A **network diagram** shows the logical relationships among, or sequencing of, project activities (allows you to put the pieces together logically)
- ✓ Network diagrams are often the preferred technique for showing activity sequencing
- ✓ Two main formats are the:
  - *Arrow Diagramming Method (ADM)*
  - *Precedence Diagramming Method (PDM)*



These will be explained in more detail in the Workshop

# ESTIMATE ACTIVITY DURATIONS



## *Input*

- SMP & Scope Baseline
- Project Docs
- EEF & OPA

## *T&T*

- Expert Judgement
- Estimating  
(Analogous, Parametric, 3 Point, Bottom up, etc.)

## *Outputs*

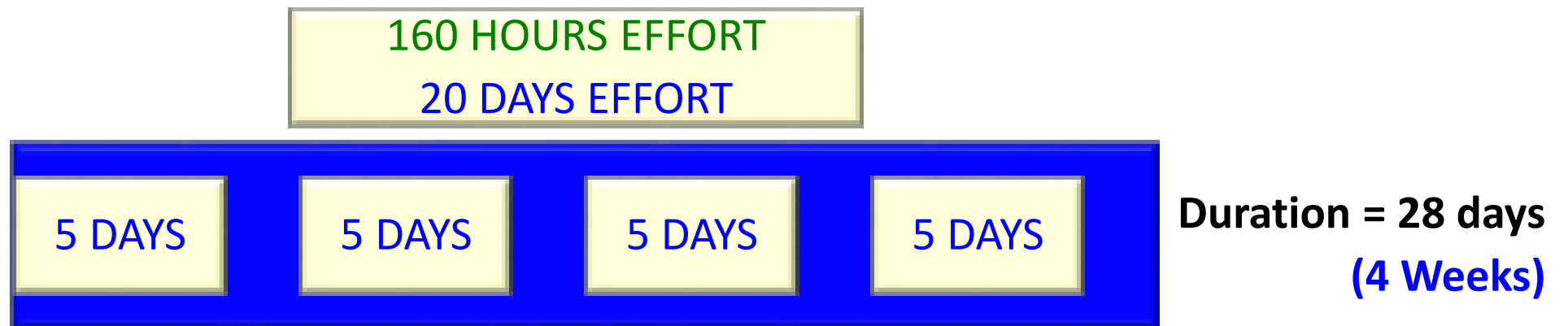
- Duration Estimates
- Basis of Estimates
- Project Document Updates



# ESTIMATE ACTIVITY DURATIONS

## (SOME KEY DEFINITIONS)

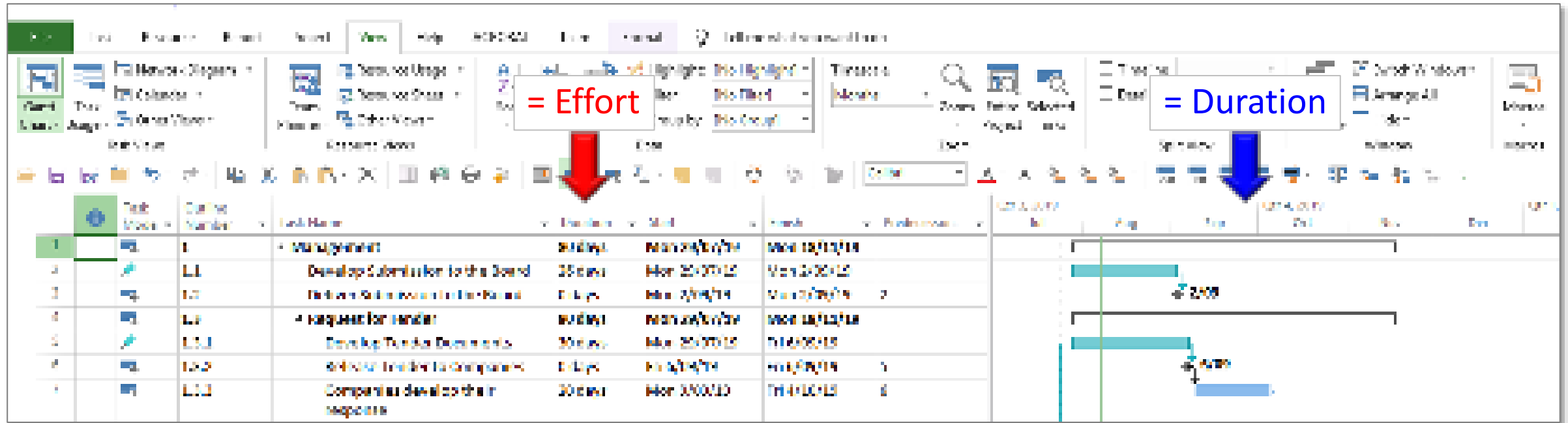
- ✓ **Effort** is the **number of workdays or work hours** required to complete a task (effort does not normally equal duration)
- ✓ **Duration** includes the **Effort plus the elapsed time** (not only the work time required but time needed for collateral activities, interruptions, weekends, holidays, time off, etc.)



# ESTIMATE ACTIVITY DURATIONS

## (A CAVEAT FOR MS PROJECT)

- ✓ MS Project treats the column for **Duration** as **Effort**, but plots it in the Gantt chart as **Duration**



# ESTIMATE ACTIVITY DURATIONS

- ✓ Start by identifying the quantity and type of resources needed for Activities (people, equipment, money, etc.)
- ✓ Think about:
  - How difficult will it be to complete specific activities on this project?
  - What is the organisation's history in doing similar activities?
  - Are the required resources available?



This is done as a part of Resource Management (discussed in Topic 7)

# ESTIMATE ACTIVITY DURATIONS



Next:

- apply information in the Scope Baseline;
- Enterprise Environment Factors (EEF):  
*(Cultural & Social, International & Political, Physical Environment)*
- Organisational Process Assets (OPA):  
*(Plans, processes, Policies, Procedures & Knowledge Base: Templates, Proformas, registers, etc.)*
- **And ...**

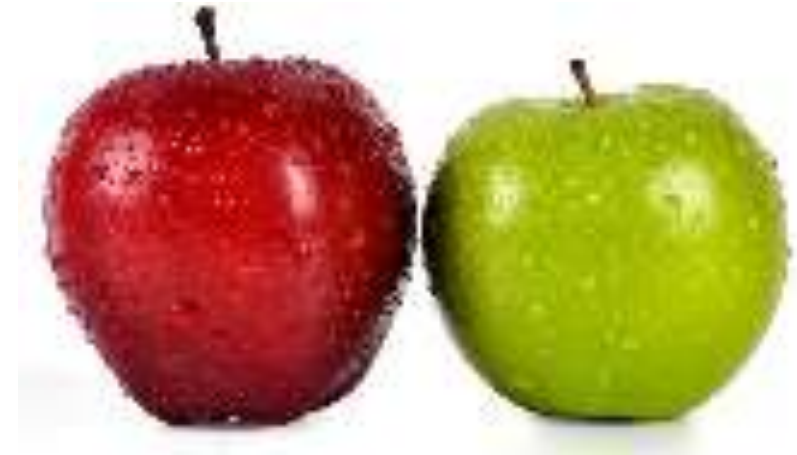


# ESTIMATE ACTIVITY DURATIONS

- ✓ Use **expert judgment**, and meetings to develop the **estimates of the Effort required** (Talk to and listen to experts)
- ✓ Apply appropriate **estimation techniques**, which include...

# TECHNIQUES FOR ESTIMATION

- ✓ **Analogous (Top Down approach is typical)**
  - Use information from previous projects
  - Can provide useful insights **(but only if good records are kept)**
  - **Be careful** – small differences can have major schedule implications



# TECHNIQUES FOR ESTIMATION

- ✓ **Bottom up estimates**
  - Identify likely durations for individual Work Packages (WP)
  - Aggregate these into a common estimate
  - **Be careful** – can include duplication of effort, but **it is commonly used**



# TECHNIQUES FOR ESTIMATION

- ✓ **Parametric modelling**
  - There are a range of different parametric models
  - Examples include **Function Points (FP)**, **Source Lines of Code (SLOC)** and the **Constructive Cost Model (COCOMO)**



We will discuss these in Topic 5



# TECHNIQUES FOR ESTIMATION

## THREE POINT ESTIMATE

### Best Case

(Most optimistic)

- ✓ Instead of providing activity estimates as a discrete number, such as 20 days, it's often helpful to create a **three-point estimate**

### Likely Case

(Most likely?)

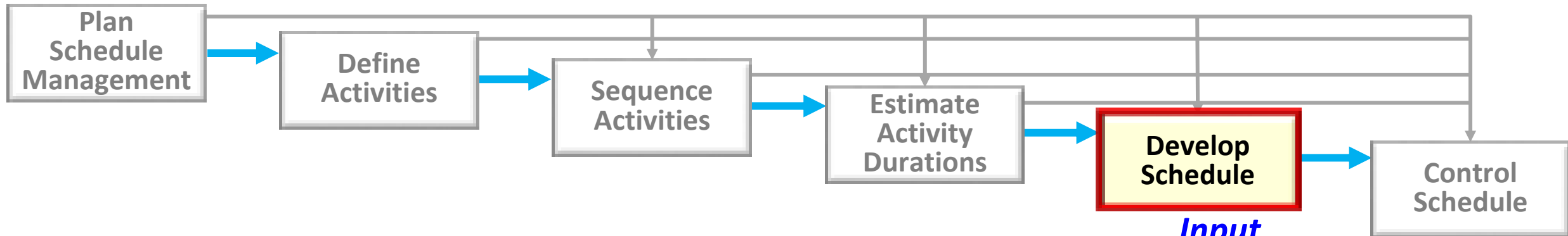
- ✓ Estimate includes an **optimistic, most likely, and pessimistic estimate** (e.g. 15 days for best case, 20 days for the most likely, and 25 days for worst case)

### Worst Case

(Most pessimistic)

- ✓ Three-point estimates are required for **PERT estimates** (Earliest Start (ES), Earliest Finish (EF), Latest Start (LS), Latest Finish (LF) – to **determine Slack & Develop the Schedule**)

# DEVELOP SCHEDULE



## ***Input***

- PMP & Proj docs
- Agreements
- EEF & OPA

## ***T&T***

- Schedule & Critical Path methods (*inc Leads/Lags, Schedule compression*)
- Resource optimisation
- Application

## ***Outputs***

- Calendars
- Change Reqs
- Doc updates

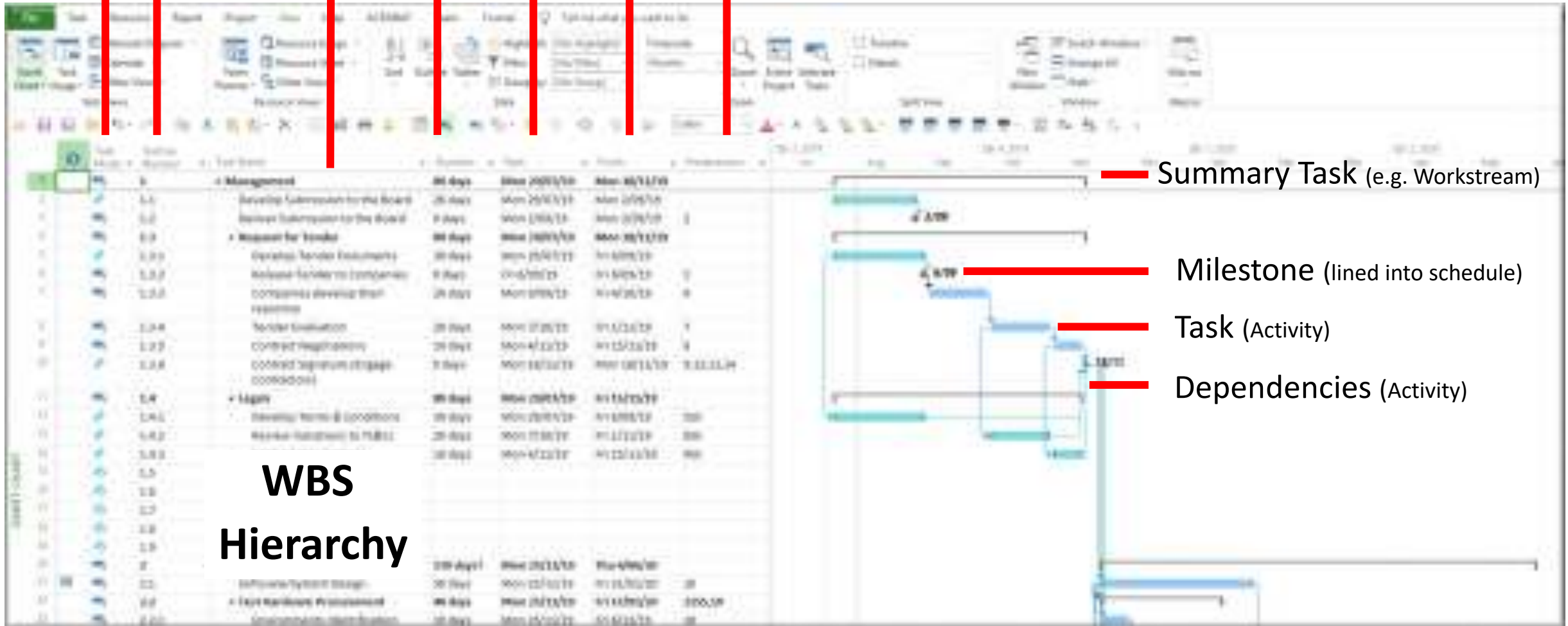
# DEVELOP SCHEDULE

- ✓ Uses results of the other schedule management processes to determine the **start and end dates** of the project
- ✓ To create a realistic project schedule that provides a **basis for monitoring** project progress for the Schedule dimension of the project
- ✓ Important tools and techniques include **Gantt charts**, Critical Path analysis, Critical Chain Scheduling (CCS), and Program Evaluation and Review (PERT) analysis

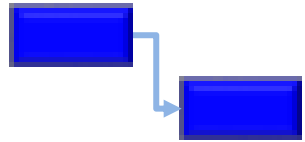
# AN EXAMPLE GANTT CHART IN MS PROJECT

Task Name  
 Start Finish  
 (Duration)  
 Predecessors  
 (Dependencies)

Task Mode  
 Outline Number  
 Effort

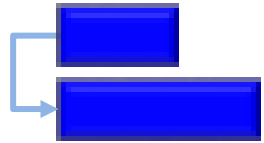


# TYPES OF DEPENDENCIES



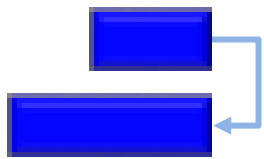
**Finish to Start (FS)**

This is the default dependency. Predecessor must finish before the successor can start.



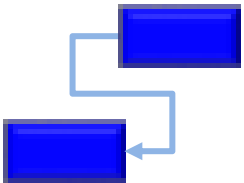
**Start to Start (SS)**

This is used commonly to start parallel activities at the same time (e.g. the predecessor must start before the successor can start).



**Finish to Finish (FF)**

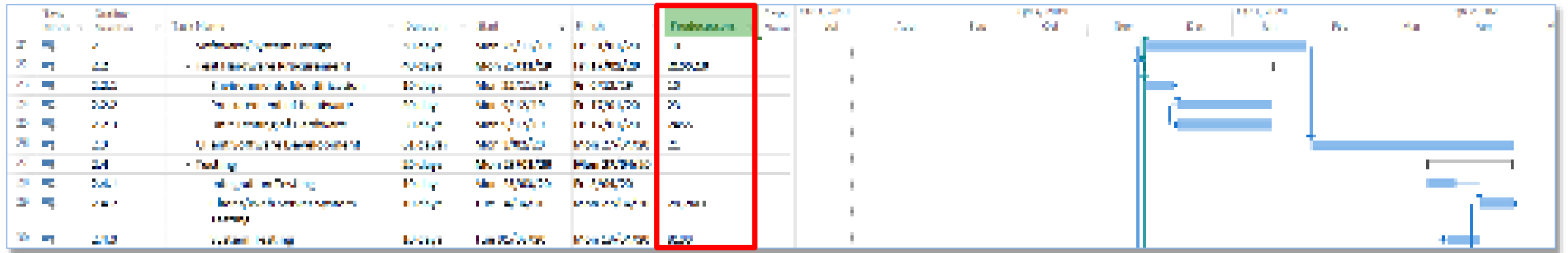
This indicates that a predecessor must finish before the successor can finish (commonly used for some parallel activities).



**Start to Finish (SF)**

In this type of dependency the predecessor must start before the successor can finish

# CAN BE ADJUSTED IN THE GANTT CHART VIEW



# OR THROUGH PREDECESSOR TASK INFORMATION

Task Information

General | **Predecessors** | Resources | Advanced | Notes | Custom Fields

Name: Client/Web Server System Testing      Duration: 10 days

Predecessors:

ID	Task Name	Type	Lag
28	Integration Testing	Finish-to-Start (FS)	0d
26	Client Software Development	Finish-to-Finish (FF)	0d

Double click on a Task in Project to expose this Dialogue box

# DEFINING THE DEPENDENCIES ALLOWS CRITICAL PATH MANAGEMENT TO BE IMPLEMENTED

This is the Critical Path



The first key is to understand what it means

# WHAT IS A CRITICAL PATH?

- ✓ A critical path is the **longest stretch of dependent activities** (tasks) from the beginning to the end of the project/elements.
- ✓ Adding the time required to complete all of the tasks on the project critical path/s **defines the total time that will be needed for the project.**
- ✓ **It is essential to know this**, so you know how long a project will take **(and where we can't afford to have slippage).**

**This is coordinated through Critical Path Management (CPM)**



# UNDERSTANDING CPM

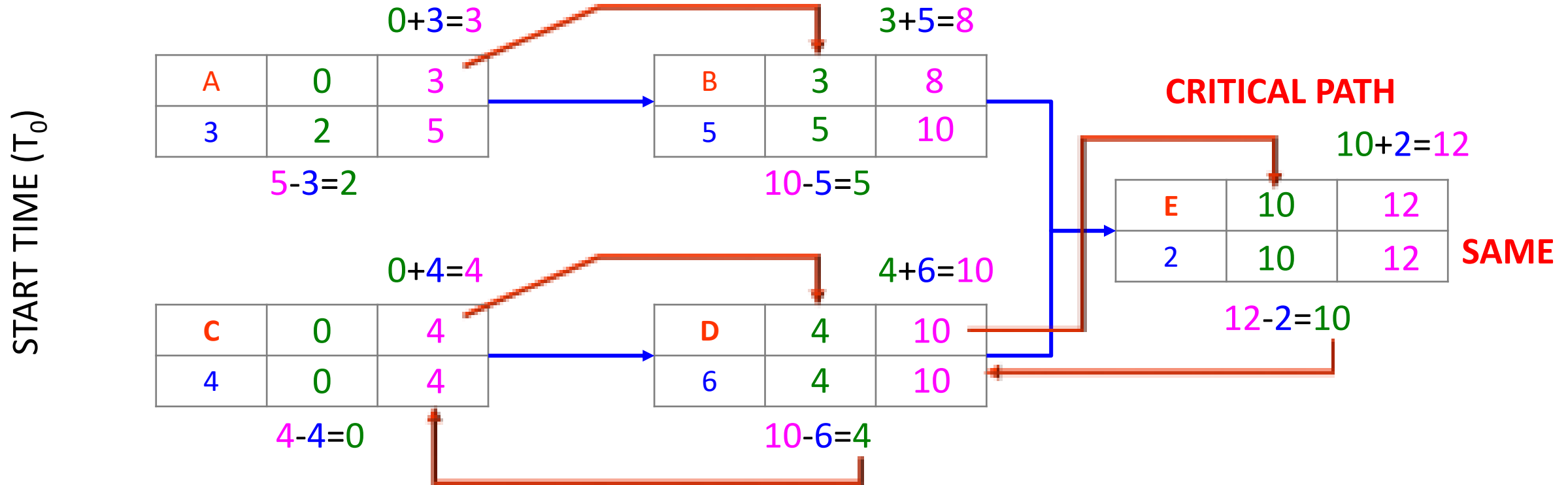
- ✓ **Critical Path Management (CPM)** allows critical paths to be determined, as well as:
  - **Slack (Free slack or free float)** is the amount of time an activity can be delayed **without delaying the early start of any immediately following activities**
  - **Total slack or total float** is the amount of time an activity can be delayed from its early start **without delaying the planned project finish date**
- ✓ This is typically identified through:
  - A **forward pass** through the network diagram determines the early start and finish dates (Early Start (ES), Early Finish (EF))
  - A **backward pass** determines the late start and finish dates (Late Start (LS), Late Finish (LF))

Can be calculated through PERT Analysis

# PERT ESTIMATES

(SHOWN AS A FORM OF PDM)

ACTIVITY ID	EARLIEST START (ES)	EARLIEST FINISH (EF)
ACTIVITY EFFORT	LATEST START (LS)	LATEST FINISH (LF)



The spare time off the critical path is known as **slack**

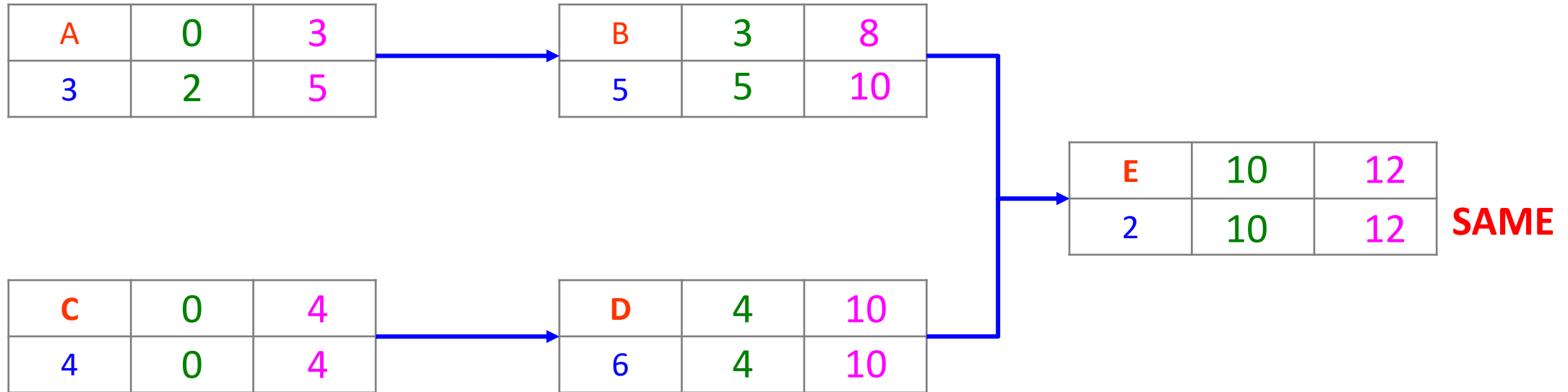
Worked out as:  $\text{Slack} = \text{LF} - \text{EF}$  or  $\text{Slack} = \text{LS} - \text{ES}$

# PERT ESTIMATES

(SHOWN AS A FORM OF PDM)

ACTIVITY ID	EARLIEST START (ES)	EARLIEST FINISH (EF)
ACTIVITY EFFORT	LATEST START (LS)	LATEST FINISH (LF)

START TIME ( $T_0$ )



## CRITICAL PATH

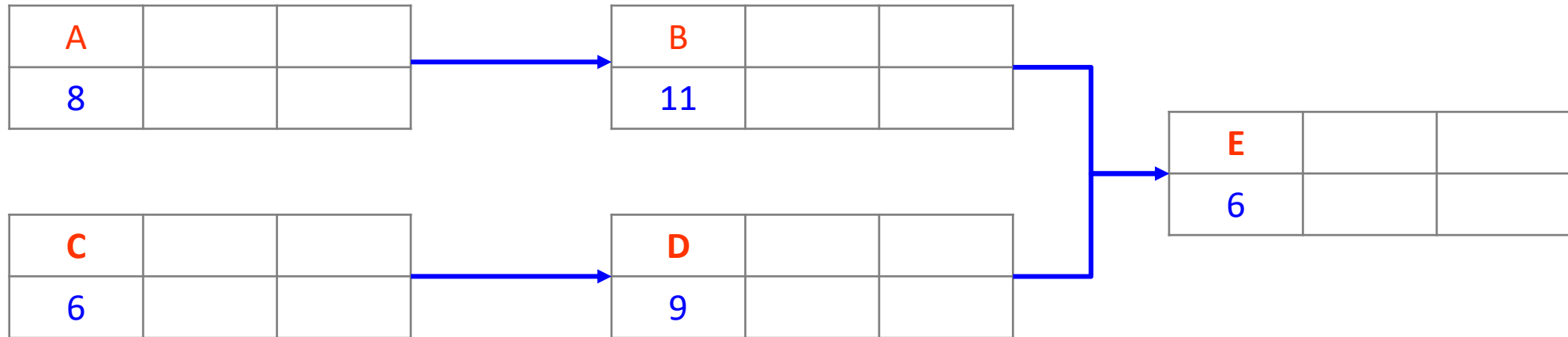
A (LF-EF)	B (LF-EF)	C (LF-EF)	D (LF-EF)	E (LF-EF)	Slack
5-3 = 2	10-8 = 2	4-4 = 0	10-10 = 0	12-12 = 0	2 days in A/B Workstream

# InClassActivity

ACTIVITY ID	EARLIEST START (ES)	EARLIEST FINISH (EF)
ACTIVITY EFFORT	LATEST START (LS)	LATEST FINISH (LF)

1. What is the minimum period of effort for this project?
2. What is the critical path?
3. What is the amount of slack time and in which Workstream is the slack?

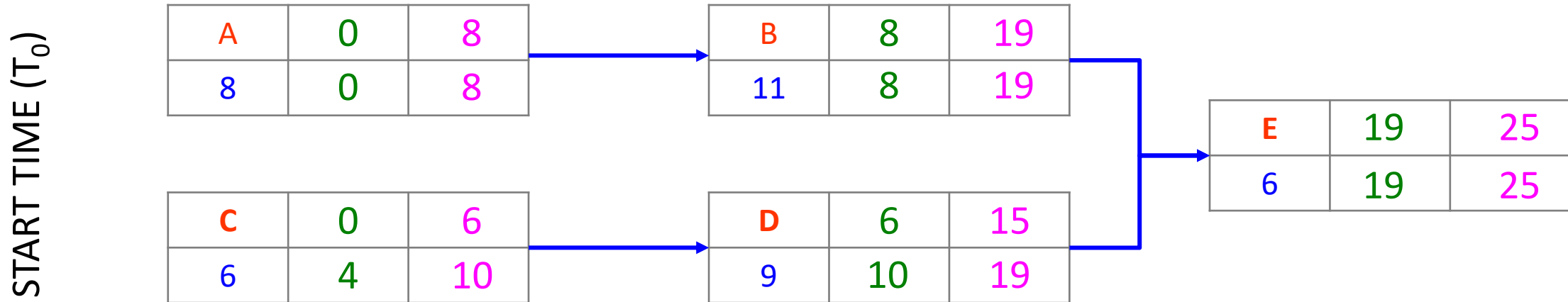
START TIME ( $T_0$ )



# InClassActivity

ACTIVITY ID	EARLIEST START (ES)	EARLIEST FINISH (EF)
ACTIVITY EFFORT	LATEST START (LS)	LATEST FINISH (LF)

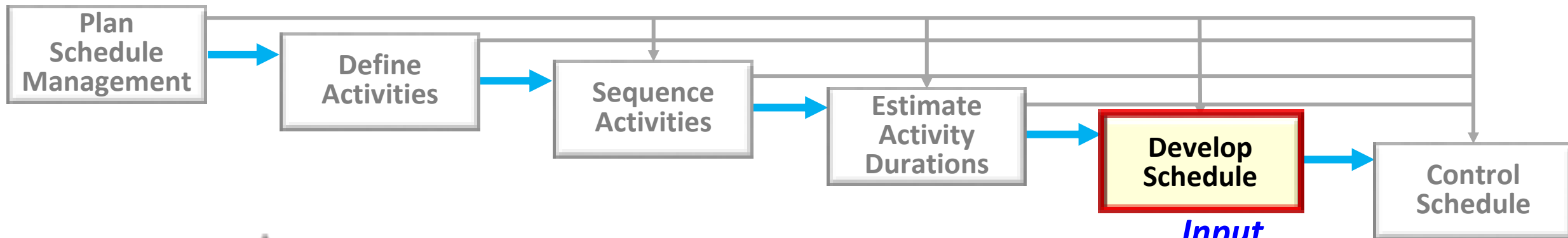
1. What is the minimum duration of this project?
2. What is the critical path?
3. What is the amount of slack time and in which Workstream is the slack?



## CRITICAL PATH

A (LF-EF)	B (LF-EF)	C (LF-EF)	D (LF-EF)	E (LF-EF)	Slack
8-8 = 0	19-19 = 0	10-6 = 4	19-15 = 4	25-25 = 0	4 days (on C & D)

# DEVELOP SCHEDULE



## Some real world issues

- Critical Chain Scheduling
- Estimation & PERT
- Shortening a Schedule

### *Input*

- PMP & Proj docs
- Agreements
- EEF & OPA

### *T&T*

- Schedule & Critical Path methods (*inc Leads/Lags, Schedule compression*)
- Resource optimisation
- Application

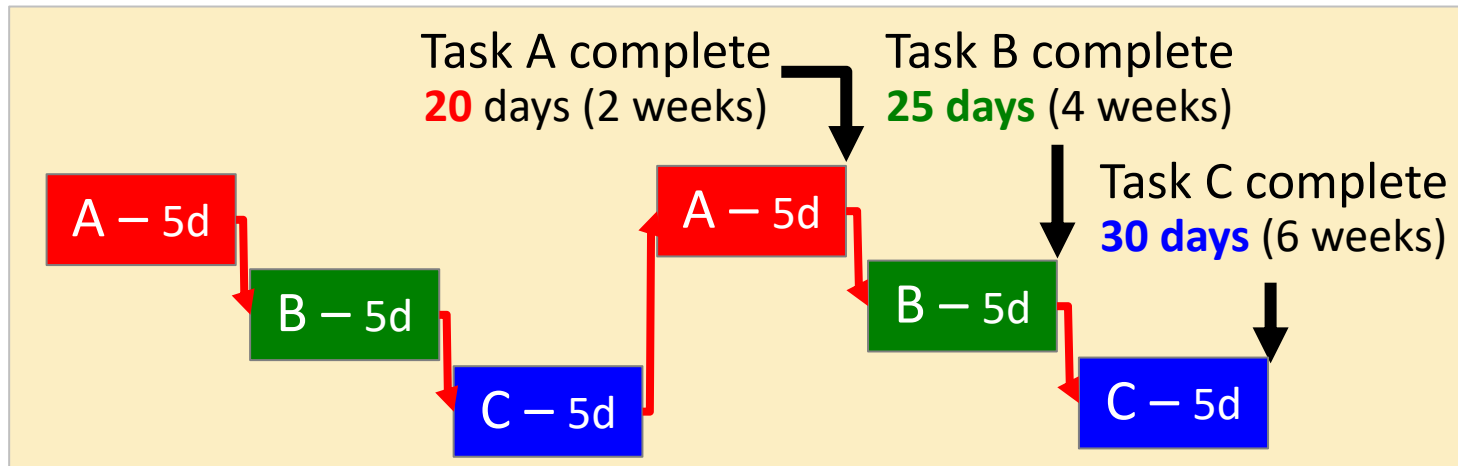
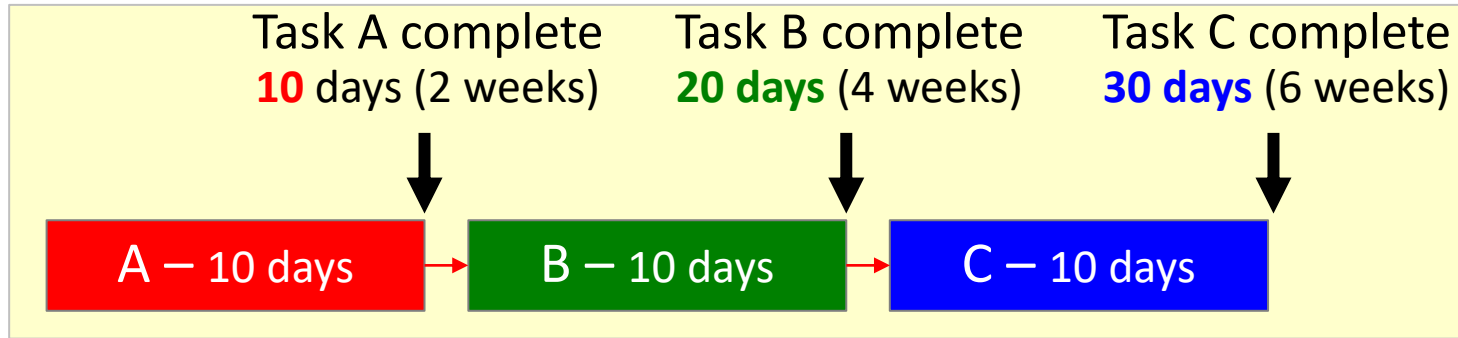
### *Outputs*

- Calendars
- Change Reqs
- Doc updates

# CRITICAL CHAIN SCHEDULING

- ✓ The **Theory of Constraints (ToC)** takes into account **limited resources** & includes **buffers** (extra time to complete Activities)
- ✓ **Critical Chain Scheduling (CCS)** works within the **ToC** framework, but adds both **project overall time and feeding buffers** (feeding buffers are explained shortly)
- ✓ **CCS** also identifies that **team members may not be able to multitask** (often true) - so manages multitasking & buffers

# MULTITASKING EXAMPLE



- ✓ Multi-tasking can be useful is if there is slack/buffers, and where other tasks can benefit from shifting people (e.g. critical path tasks)

## SEQUENTIAL SCHEDULE

### Pros

- ✓ Easier linear management
- ✓ Easy for team to follow

### Cons

- ✗ Can sometimes take longer
- ✗ Can be less flexible

## MULTI-TASKING SCHEDULE

### Pros

- ✓ Project can be shortened (e.g. when there are delays in WPs)
- ✓ Can provide critical path flexibility (sometimes)

### Cons

- ✗ Harder to manage (Team & PM)
- ✗ Can create phasing problems



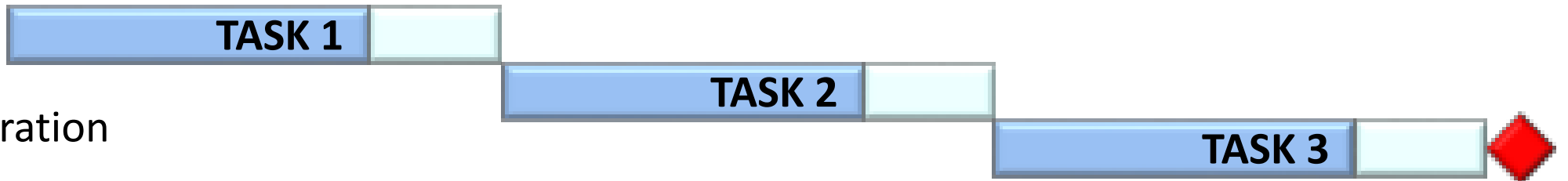
# CCS BUFFERS

✓ CCS uses:

- A **project buffer** or additional time added before the project's/task's **due date**
- **Feeding buffers** or additional time added **before** tasks on the critical path

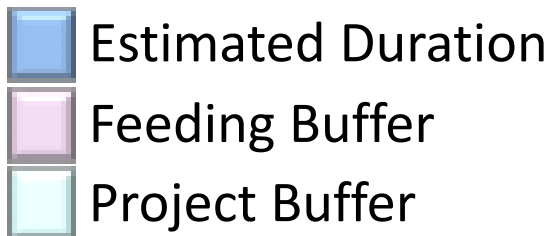
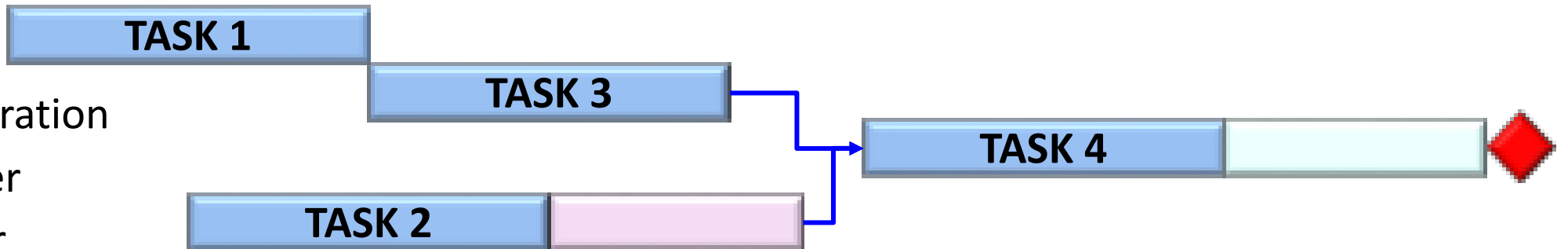
---

## CONVENTIONAL SCHEDULE



---

## CRITICAL CHAIN SCHEDULE



# ESTIMATION

Estimation **must be done carefully** (it is not easy)

➤ Under-estimation leads to:

- ✗ under-staffing
- ✗ too short a schedule
- ✗ poor quality
- ✗ loss of credibility & custom (**bad for business**)

➤ Over-estimation is just as bad:

- ✗ **scope** will fill to fit the available resources
- ✗ **costs** are greater than they should be
- ✗ **resources** are tied up for too long
- ✗ following **projects/elements** will be delayed

➤ Estimation is **often not done well** (even for experienced teams)



So how do you get around this?

# USING PERT FOR ESTIMATION

**Best Case**  
(Most optimistic)

**Likely Case**  
(Most likely?)

**Worst Case**  
(Most pessimistic)

✓ PERT uses **probabilistic time estimates** -  
Duration estimates based on using:

- Best Case (Optimistic)
- Most Likely Case, and
- Worst Case (Pessimistic)

of activity durations

**This uses the  
3 Point Estimate  
Technique**

# APPLYING THE PERT FORMULA

---

Weighted Average  
Duration =

$$\frac{\text{Most optimistic Time} + 4 \times \text{Most Likely Time} + \text{Most Pessimistic Time}}{6}$$

---

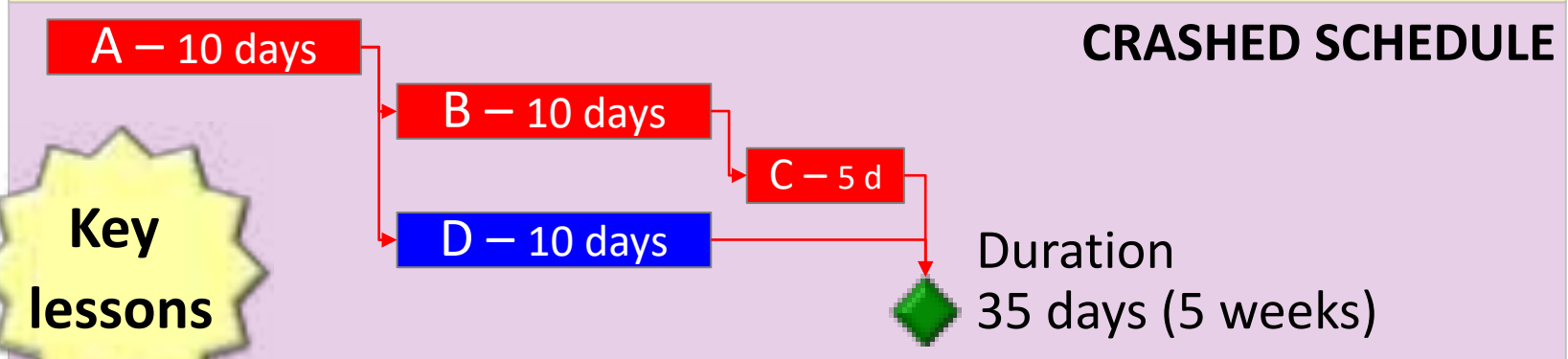
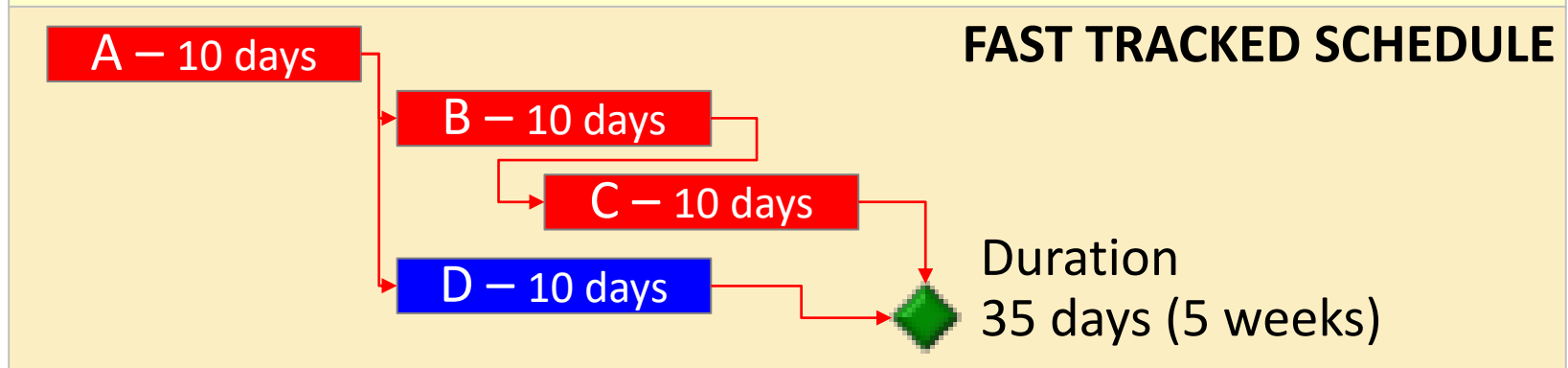
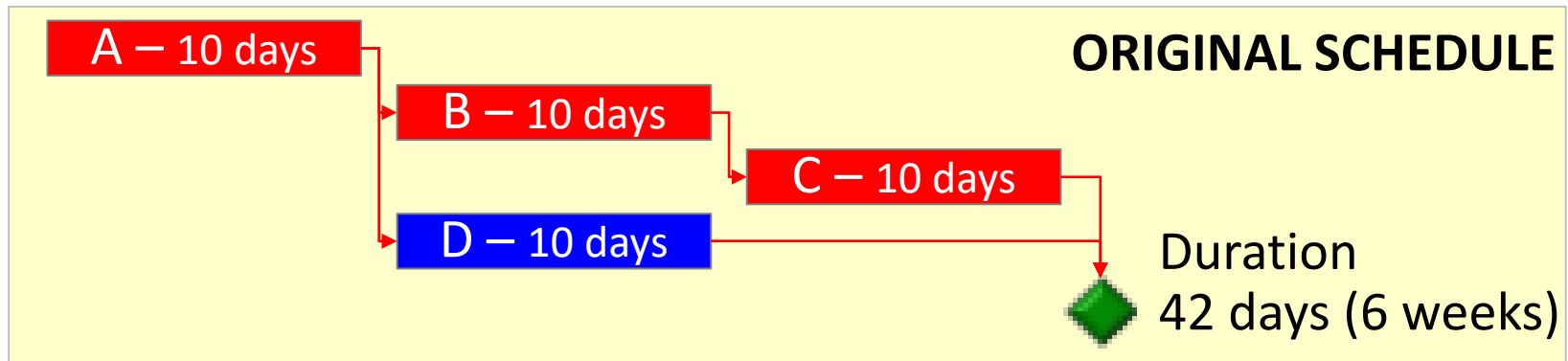
Example Weighted  
Average Duration

$$\frac{\text{Most Optimistic } 8 + 4 \times \text{Most Likely } 10 + \text{Most Pessimistic } 24}{6} = 12$$

# SHORTENING A SCHEDULE

- ✓ Three main techniques for shortening schedules:
  - **Shortening the duration** of critical activities or tasks by **adding more resources** or **changing their scope** (often not feasible due to team knowledge or the nature of the job)
  - **Fast tracking** activities by **doing them in parallel** or **overlapping them** (split Activities & move some things forward to do them in parallel)
  - **Crashing** activities by obtaining the greatest amount of schedule compression for the least incremental cost (**Shortening & sometimes including Fast Tracking** - reassign members, parallel activities, splitting activities, etc.)

# EXAMPLES: CRASH/FAST TRACK



## Problem

Milestone must be brought forward one week - 5 days of effort (35 days/5 weeks)

## Solution Option 1 (Fast Tracking)

Phasing of Activity C changed to start earlier

(Cost/Schedule/Resource implications)

## Solution Option 2 (Crashing)

Duration of Activity C shortened from 10 to 5 days

(Cost/Schedule/Resource/Capability implications)

# REAL WORLD ISSUES

- ✓ Focus these on the **critical path** activities
- ✓ Crashing and fast tracking can cause more problems (cost, scheduling, resources)
- ✓ Make sure that the crash or fast track is **realistic** (take into account real world issues)
- ✓ This requires a lot more integrated management and communication (doing, reporting, managing)



# TO FIND OUT MORE

## Introduction & Fast Tracking

<https://www.izenbridge.com/blog/what-is-fast-tracking-and-crashing/>

<https://www.youtube.com/watch?v=uJD4G9EDH8w>

<https://www.youtube.com/watch?v=v0iXU6Ay0W4>



## Project Crashing

Part 1: <https://www.youtube.com/watch?v=yLPzSyBQ3-k>

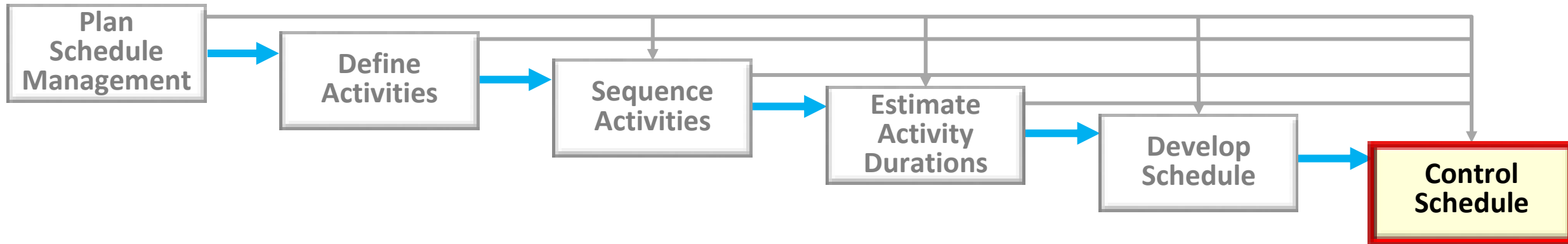
Part 2: [https://www.youtube.com/watch?v=ZOW2QU\\_sbJ4](https://www.youtube.com/watch?v=ZOW2QU_sbJ4)

Part 3: <https://www.youtube.com/watch?v=0oBUxrpzWhM>

These techniques  
can help with the  
**Control of the  
Schedule**



# CONTROL SCHEDULE



## *Input*

- Project docs
- Performance data
- OPA

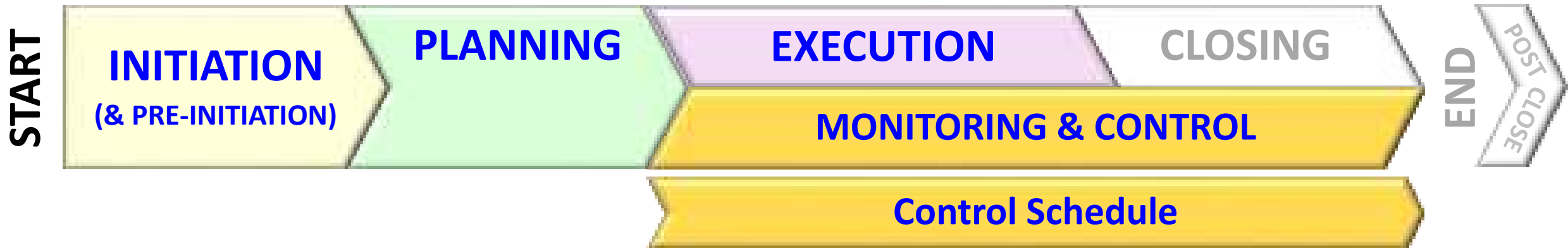
## *T&T*

- Data Analysis &
- Critical Path Method
- Application

## *Outputs*

- Performance
- Sched forecasts
- Change Reqs
- PMP & Doc updates

# CONTROL SCHEDULE



- ✓ Perform reality checks on schedules
- ✓ Allow for contingencies (Don't plan for everyone to work at 100 percent capacity all the time)
- ✓ Hold progress meetings with stakeholders and be clear and honest in communicating schedule issues

# CONTROL SCHEDULE

Goals are to:

- ✓ **know the status** of the schedule
- ✓ **identify changes early** that affect changes
- ✓ **proactively influence factors** that cause schedule changes
- ✓ **manage changes** when they occur

Apply tools and techniques, which include:


- ✓ progress **reports**
- ✓ a formal schedule **change control** system
- ✓ project management **software**
- ✓ **variance analysis**, such as analysing float or slack
- ✓ **performance management (engage your team & stakeholders)**

# REALITY CHECKS ON SCHEDULING

- ✓ Continue to **review the schedule** and estimated completion date (make sure they align with the Project Charter)
- ✓ **Monitor and evolve** the detailed schedule with the project team and other stakeholders (make sure the schedule remains realistic)
- ✓ Make sure people **follow the project timelines** (and let you know early if they can't)
- ✓ **Alert** key stakeholders **well in advance** if there are schedule problems (don't hide key issues from stakeholders)

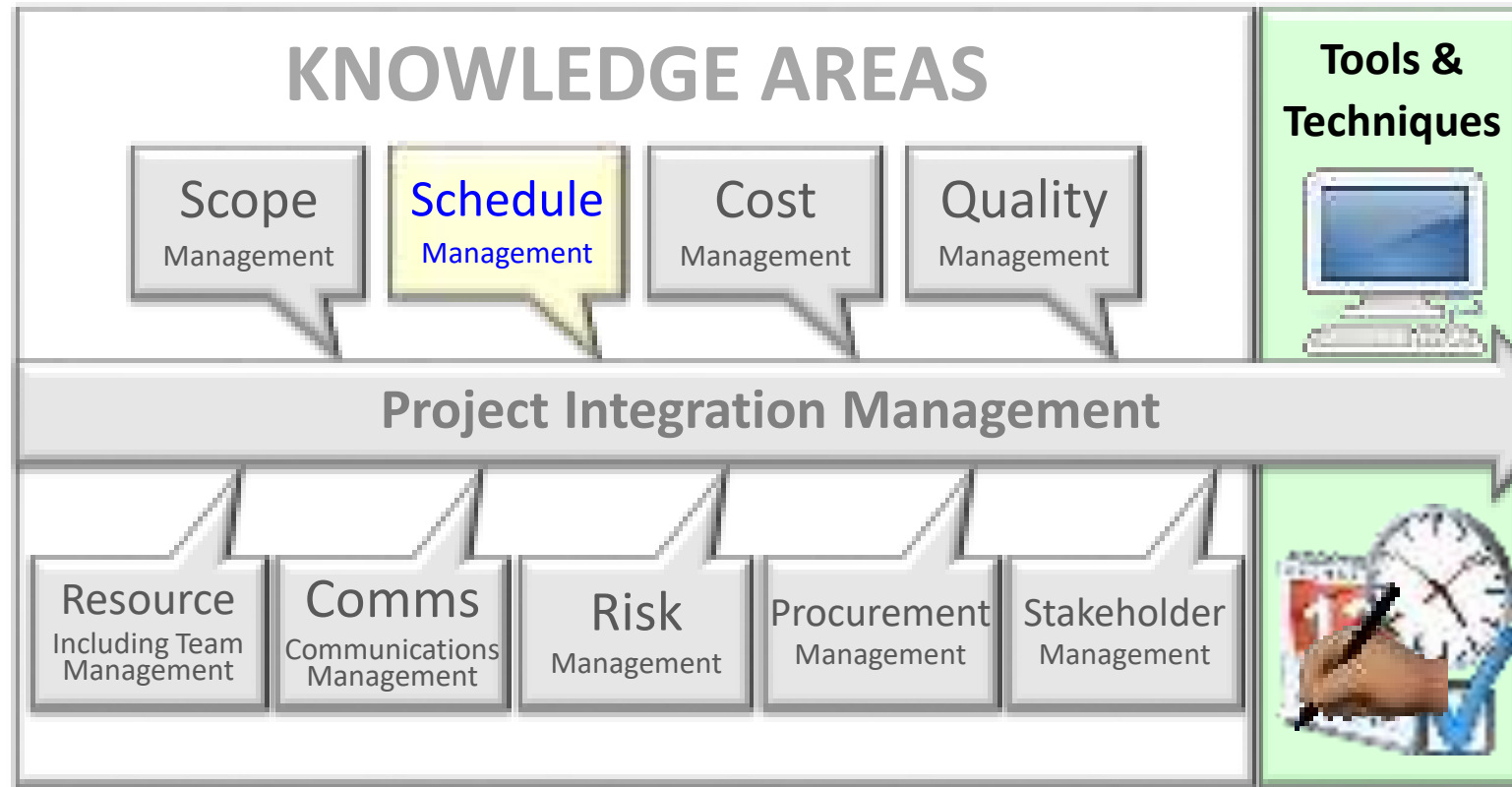
# WORKING WITH PEOPLE IS CRITICAL TO ACHIEVE THIS

- ✓ Can be more important than hard skills
- ✓ Good Project Managers use:
  - Empowerment
  - Incentives
  - Discipline/Performance Management
  - Negotiation

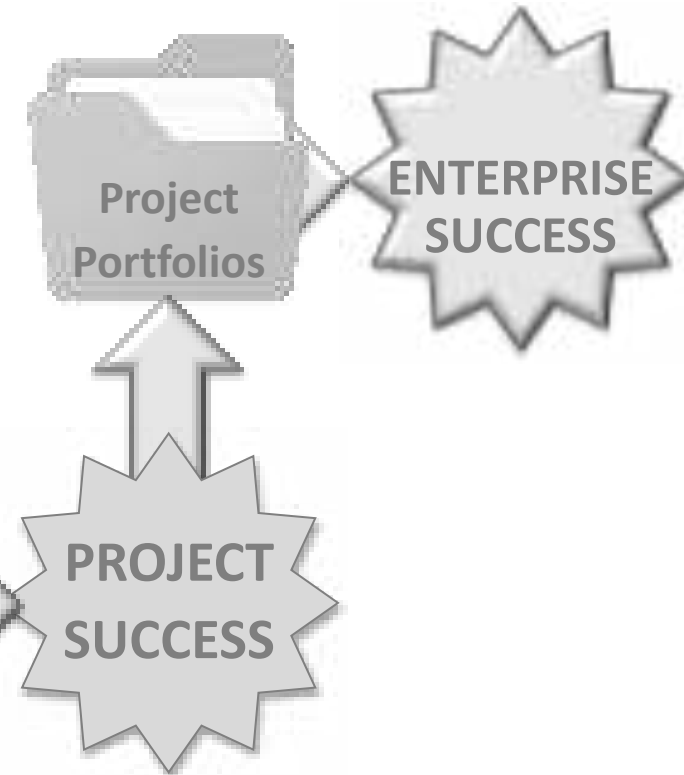


The tools  
can help you  
do this

# SOFTWARE



Stakeholders' needs & expectations



# SOFTWARE FOR SCHEDULE MANAGEMENT

- ✓ Project management **software can help** in various Schedule management areas
- ✓ Software for **facilitating communication** helps people **exchange schedule-related information**
- ✓ **Decision support models** help **analyse trade-offs** that can be made

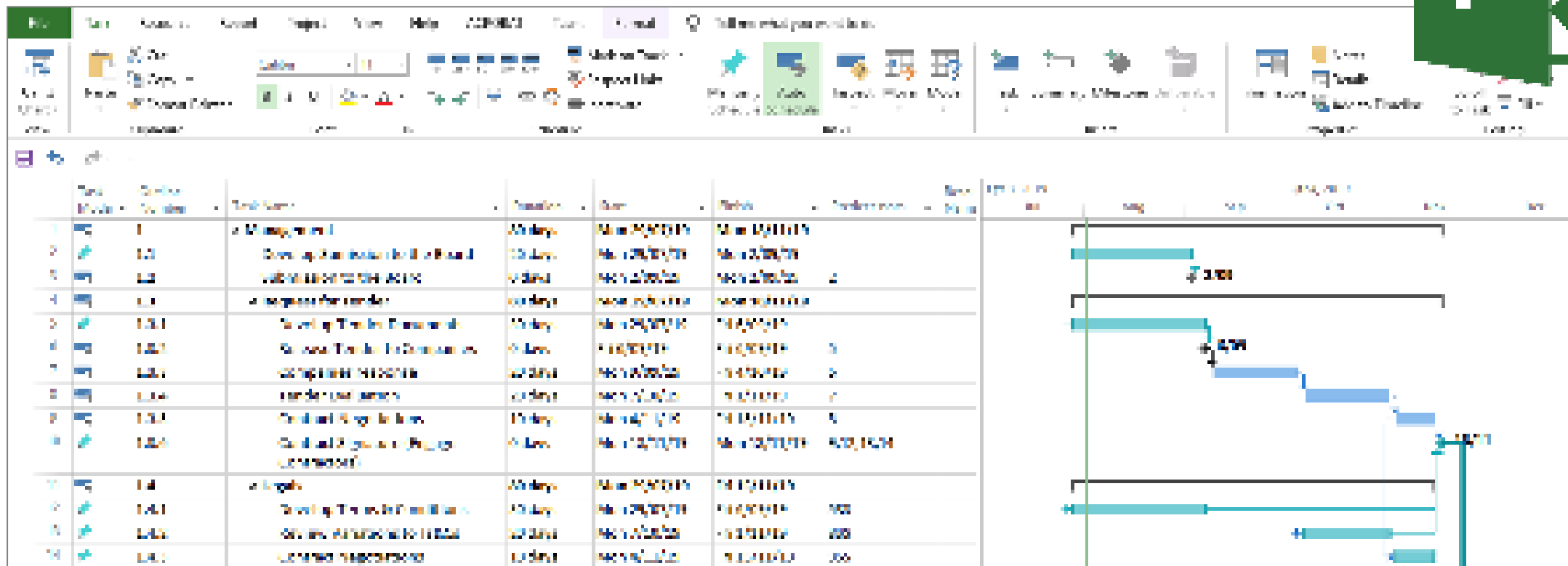
# USING PROJECT MANAGEMENT SOFTWARE

- ✓ Many people **misuse project management software** because they don't understand important concepts and have not had training
- ✓ You must **enter dependencies to have dates adjust automatically and to determine the critical path**
- ✓ You must **enter actual schedule information** to compare planned and actual progress



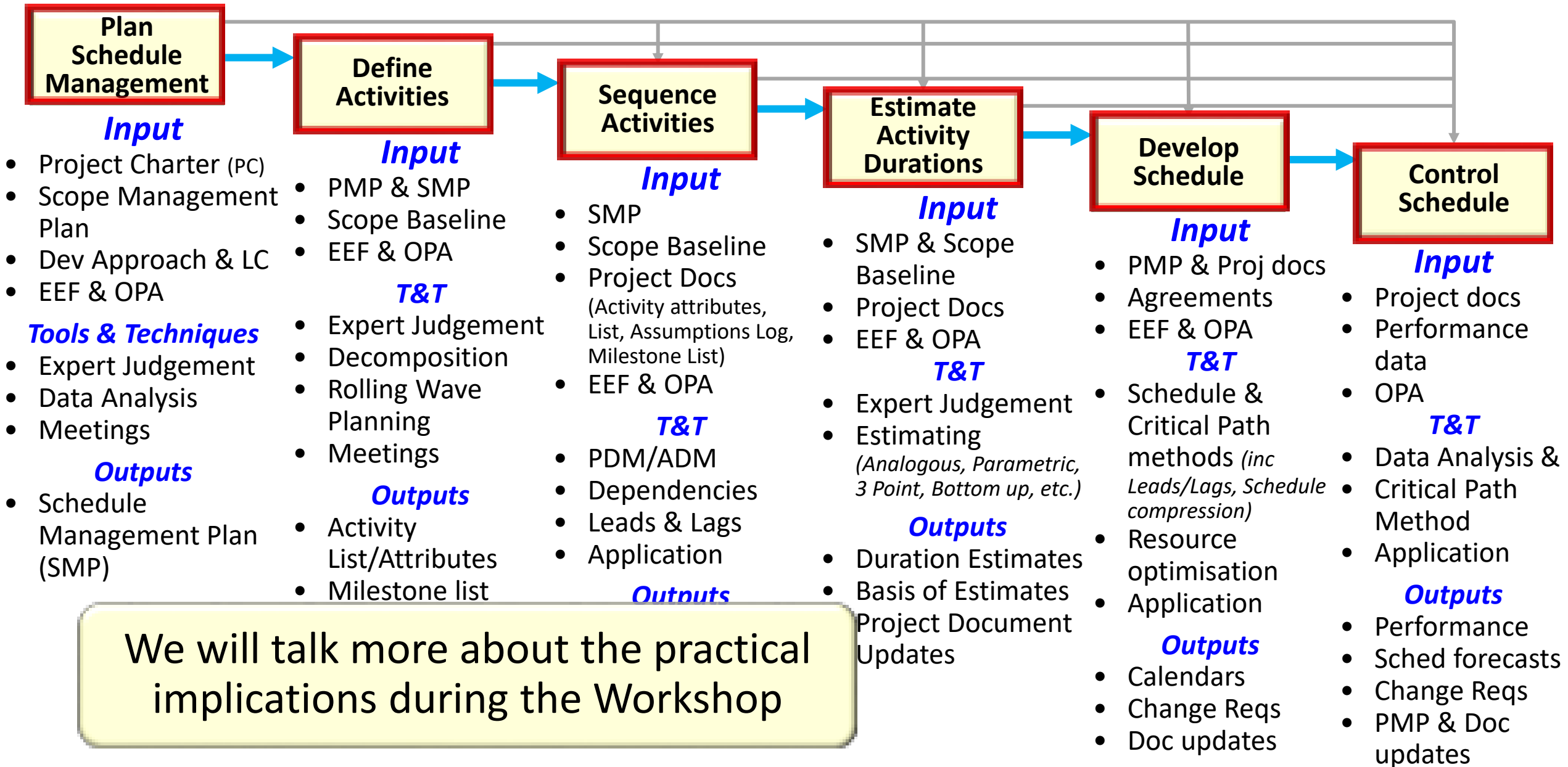
# SOFTWARE FOR SCOPE MANAGEMENT & CONTROL

- ✓ The most commonly used one is MS Project



# TOPIC SUMMARY

# TOPIC SUMMARY



# UNIT PROJECT MILESTONES

# PRIOR TO THE NEXT SESSION

- ✓ Read Schwalbe – Chapter 7
- ✓ Finalise your PMP
- ✓ Finalise your WBS in MS Project (Follow the instructions in the 'How to Develop your WBS')
- ✓ Be prepared to discuss all of the above during Topic Week 5



# ASSIGNMENT ONE

- ✓ Due by week 6
- ✓ Upload into the LMS prior to that time  
(see the [Unit Information Guide](#))
- ✓ If you have followed the Project Plan  
you should nearly be finished



# ASSIGNMENT TWO

- ✓ Get your group of 5 or 6 finalised
- ✓ Do your Team Charter prior to Week 7 (you will need to have a meeting to do this)
- ✓ Get the Team Charter to me as soon as possible



# ASSISTANCE WORKSHOP

## ✓ **Covering MS Project**

- Predecessors/Sequencing
- Start/End Dates & Durations

Participate in your booked session if you would like assistance to build the WBS using MS Project





**ANY**

**QUESTIONS**

A large, 3D green question mark graphic is positioned on the left side of the slide, partially overlapping the word 'QUESTIONS'. The question mark has a thick, rounded stem and a circular top with a small dot. It is rendered with a slight shadow on the surface below it.

# CONTACT

[ict201@murdoch.edu.au](mailto:ict201@murdoch.edu.au)

Or relevant teaching staff