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COMP3219 Week 10.1 Project Evaluation, Control and Termination

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Text book

- Pinto, J (2019) Project Management: Achieving Competitive Advantage. 5th ed. Harlow: Pearson ---- Chapter 13 and Chapter 14

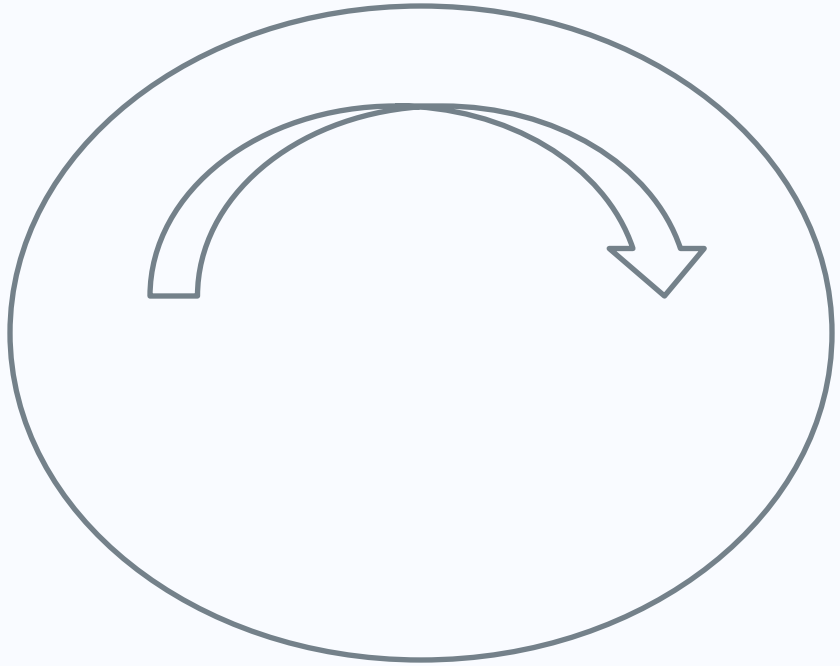
Project Evaluation and Control

- Identify the appropriate cues that signal project status / What information concerning the project should be measured?

- Understand the best times across the project's life cycle / When are the best time to measure it?

Control Cycles – a continuous cycle

1. Setting a goal



2. Measuring progress

3. Comparing actual with planned performance

4. Taking action and recycling the process

Project Evaluation and Control Methods

- The project S-Curve: a basic tool
- Milestone analysis
- The tracking Gantt Chart
- Earned value management

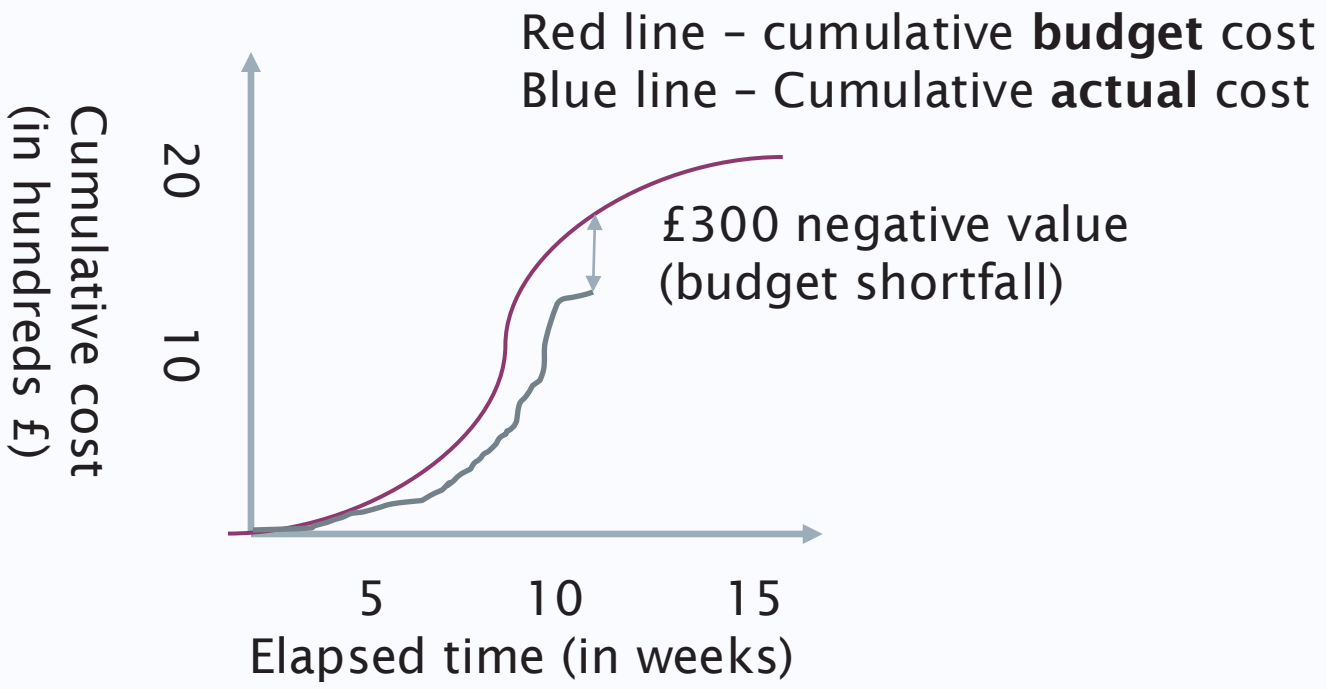
The project S-Curve: a basic tool

- The S-Curve represents the project budget baseline against which actual budget expenditures.

Table 1 Budgeted costs for a project (in hundreds £)

	Duration (in weeks)		
	5	10	15
Design	6	2	
Engineer		4	8
Install			
Test			
Total	6	6	8
Cumulative	6	12	20

Figure 1 Project S-curves



The project S-Curve: Pros and Cons

- Pros
  - A simple tracking problem
  - Provides real-time tracking information
  - A easy-to-read evaluation of the project's status in a timely manner.
- Cons
  - Provides reactive data
  - Lead us into making inaccurate assumptions about project performance
  - Do not allow the team to forecast project expenditures or other performance metrics to completion.

Milestone Analysis

- A milestone is an event or stage of the project that represents a significant accomplishment on the road to the project's completion.
  - Completion of a deliverable
  - An important activity on the project's critical path
  - A calendar date can all be milestones

Milestone Analysis - Pros

- Milestones signal the completion of important project steps
- Milestones can motivate the project team
- Milestones offer points at which to re-evaluate client needs and any potential change requests
- Milestones help coordinate schedules with vendors and suppliers
- Milestones identify key project review gates
- Milestones tell other team members when their participation is expected to begin
- Milestones can delineate the various deliverables developed in the WBS and thereby enable the project team to develop overall view of the project.

Milestone Analysis - Cons

- A reactive control system
- Problem can be compounded
- Push the project event further behind

The Tracking Gantt Chart

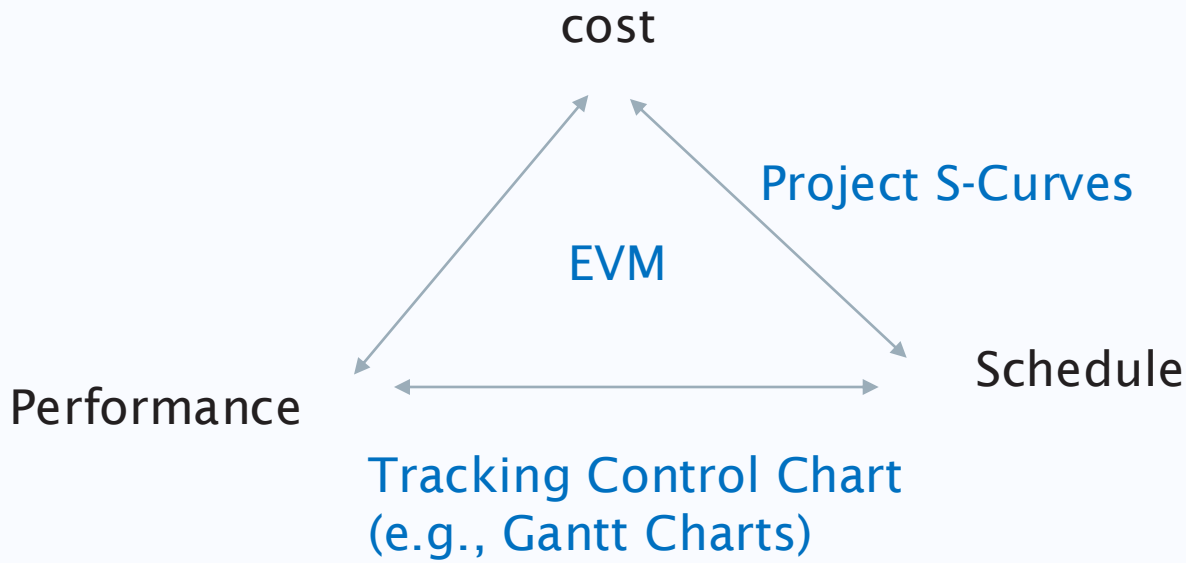
- A training Gantt chart is one form of the Gantt chart for evaluating project performance at specific points in time.
- The tracking Gantt chart allows the project team to constantly update the project's status by linking task completion to the schedule baseline.
- Rather than monitor costs and budget expenditures, a tracking Gantt chart identifies the stage of completion each task has attained by a specific date within the project.

The Tracking Gantt Chart – Pros and Cons

- Pros
  - Easy to understand
  - The visual nature of the feedback report is easy to assimilate and interpret.
  - This type of control chart can be updated very quickly
- Cons
  - Although the charts show the tasks are ahead of the schedule, on schedule, and behind schedule, these charts do not identify the underlying source of problems.
  - The charts do not allow for future projection of the project's status.
  - Tracking charts should be used along with other techniques that offer more prescriptive power.

Earned Value Management (EVM)

- EVM jointly considers the impact of time, cost, and project performance on any analysis of current project status.
- Earned value (EV) directly links all three primary project success metrics (cost, schedule, and performance).



EVM – Five Steps

1. Clearly define each activity or task that will be performed on the project, including its resource needs as well as a detailed budget.
2. Create the activity and resource usage schedules.
3. Develop a “time-phased” budget that shows expenditures across the project’s life.
4. Total the actual costs of doing each task to arrive at the actual cost of work performed (AC).
5. Calculate both a project’s budget variance and schedule variance while it is still in progress.

EVM – Key Terminology

- PV – Planned value
- EV – Earned value
- AC – Actual cost of work performance
- SV – Schedule variance
- CV – Cost variance

More detailed could be found on Page 483-484 of Pinto (2019).

EVM – An Example

Table 1 Earned Value Table (end of June) for a project planned for 6.3 months (in thousands £)

Activity	Jan	Feb	Mar	Apr	May	June	July	Plan	% Comp.	Value
Staffing	8	7						15	100	15
Blueprinting			4	6				10	80	8
Prototype Development			2	8				10	60	6
Full Design				3	8	10		21	33	7
Construction					2	30		32	25	8
Transfer							10	10	0	0
Punch List						15	5	20	0	0
						Σ=		118		44
Monthly Plan	8	7	6	17	10	55	15			
Cumulative	8	15	21	38	48	103	118			
Monthly Actual	8	11	8	11	10	30	0			
Cumulative Actual	8	19	27	38	48	78				

EVM – An Example Continued

Table 2 Schedule Variances for the project EVM

Schedule Variances	
Planned Value (PV)	103
Earned Value (EV)	44
Schedule Performance Index	EV/PV = 44/103 = 0.43
Estimated Time to Completion	(1/0.43 x 7) = 16.3 months

Table 3 Cost Variances for the project EVM

Cost Variances	
Cumulative Actual Cost of Work Performance (AC)	78
Earned Value (EV)	44
Cost Performance Index	EV/AC = 44/78 = 0.56
Estimated Cumulative Cost to Completion	(1/0.56 x £118,000) = £210,714

Types of Project Termination

- Termination by extinction
- Termination by addition
- Termination by integration
- Termination by starvation

Natural Termination – 7 steps closure process

1. Finishing the work
2. Handing over the project
3. Gaining acceptance for the project
4. Harvesting the benefits
5. Reviewing how it all went
6. Putting it all to bed
7. Disbanding the team

Project Termination – Lessons Learned

- Do
  - Establish clear rules of behaviour for all parties to the lessons learned meeting
  - Describe, as objectively as possible, what occurred
  - Fix the problem, not the blame
- Don’t do
  - Misidentify systematic errors
  - Misapply or misinterpret appropriate lessons based on events
  - Failing to pass along lessons learned conclusions

Project Termination – Putting it all to bed

- Documentation
- Legal
- Cost
- Personnel

Making the early termination decision

- When costs exceed business benefits
- When the project no longer meets strategic fit criteria
- When deadlines continue to be missed
- When technology evolves beyond the project’s scope

Preparing the final project report

1. Project performance
2. Administrative performance
3. Organizational structure
4. Team performance
5. Techniques of project management
6. Benefits to the organization and the customer