Technology Management Students Notes

TM Tools - S Curve

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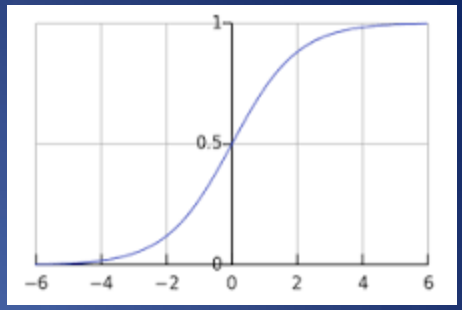
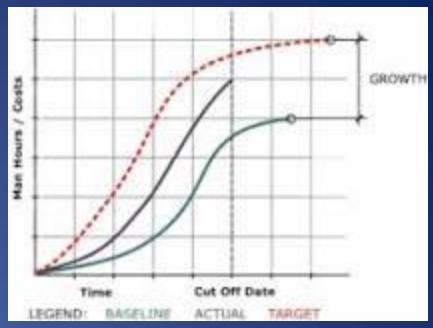
Technology Management
Students Notes

Definition



- a display of cumulative costs, labour hours or other quantities plotted against time. The name derives from the S-like shape of the curve, flatter at the beginning and end and steeper in the middle, which is typical of most projects.
- The beginning represents a slow, deliberate but accelerating start, while the end represents a deceleration as the work runs out

Types of S Curves



- **The Baseline S Curve.** This S Curve is generated from the Baseline Schedule and / or baseline fields in the Production Schedule.
- **The Target S Curve.** This S Curve is generated from the Production Schedule, assuming all tasks are completed as scheduled.
- **The Actual S Curve.** This S curve is also generated from the Production Schedule, using task percentage complete values to date. The Actual S Curve may also be referred to as the Progress or Progress To Date S Curve.

S-Curve Quantities

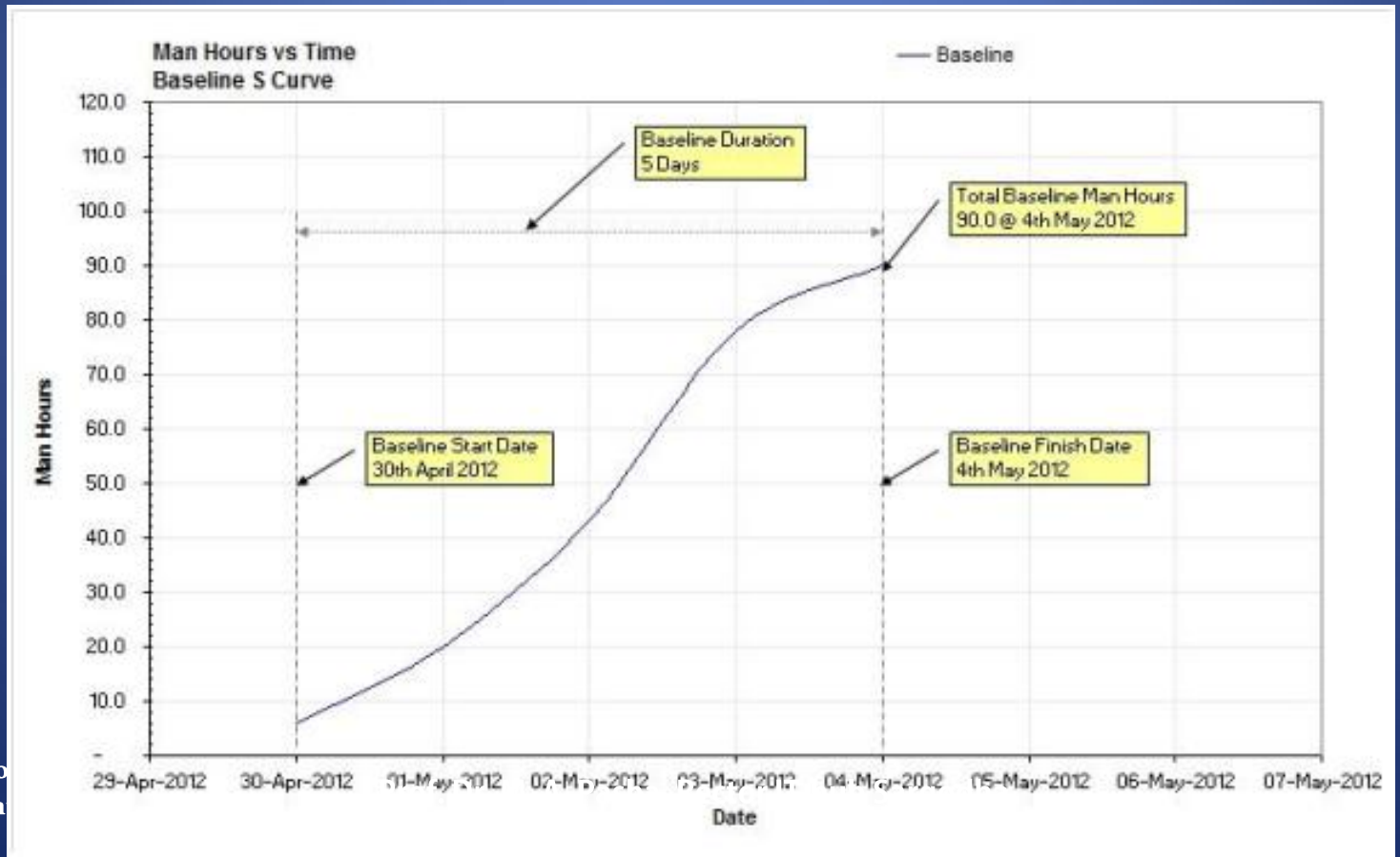
- Man Hours
- Costs

S Curve Quantity Units

- Absolute Values for man hours and / or costs
- Percentage Values for man hours and / or costs

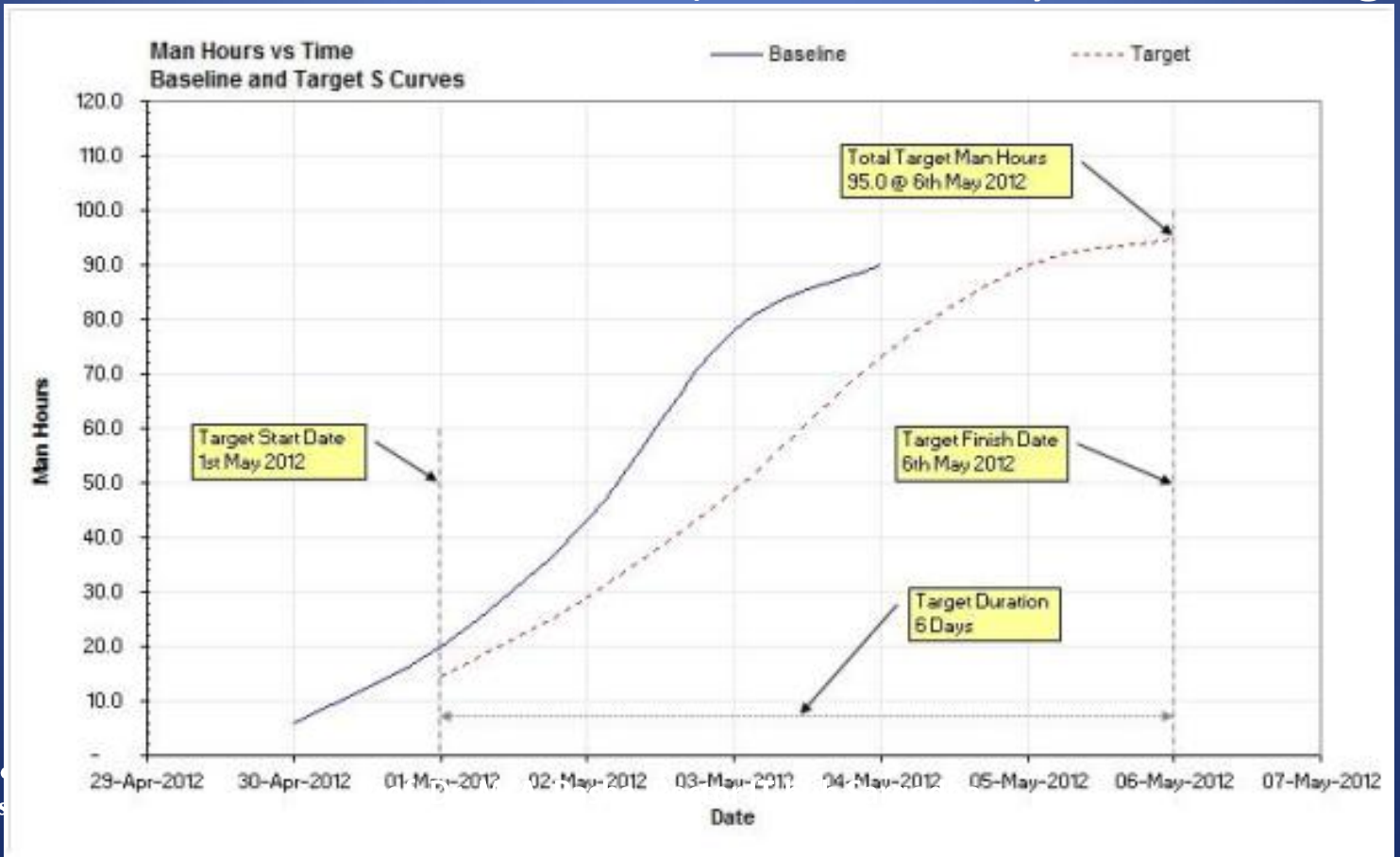
The Baseline S Curve

Prior to project commencement, a schedule is prepared outlining the proposed allocation of resources and the timing of tasks necessary to complete the project within a set time frame and budget. This schedule is referred to as the Baseline Schedule.



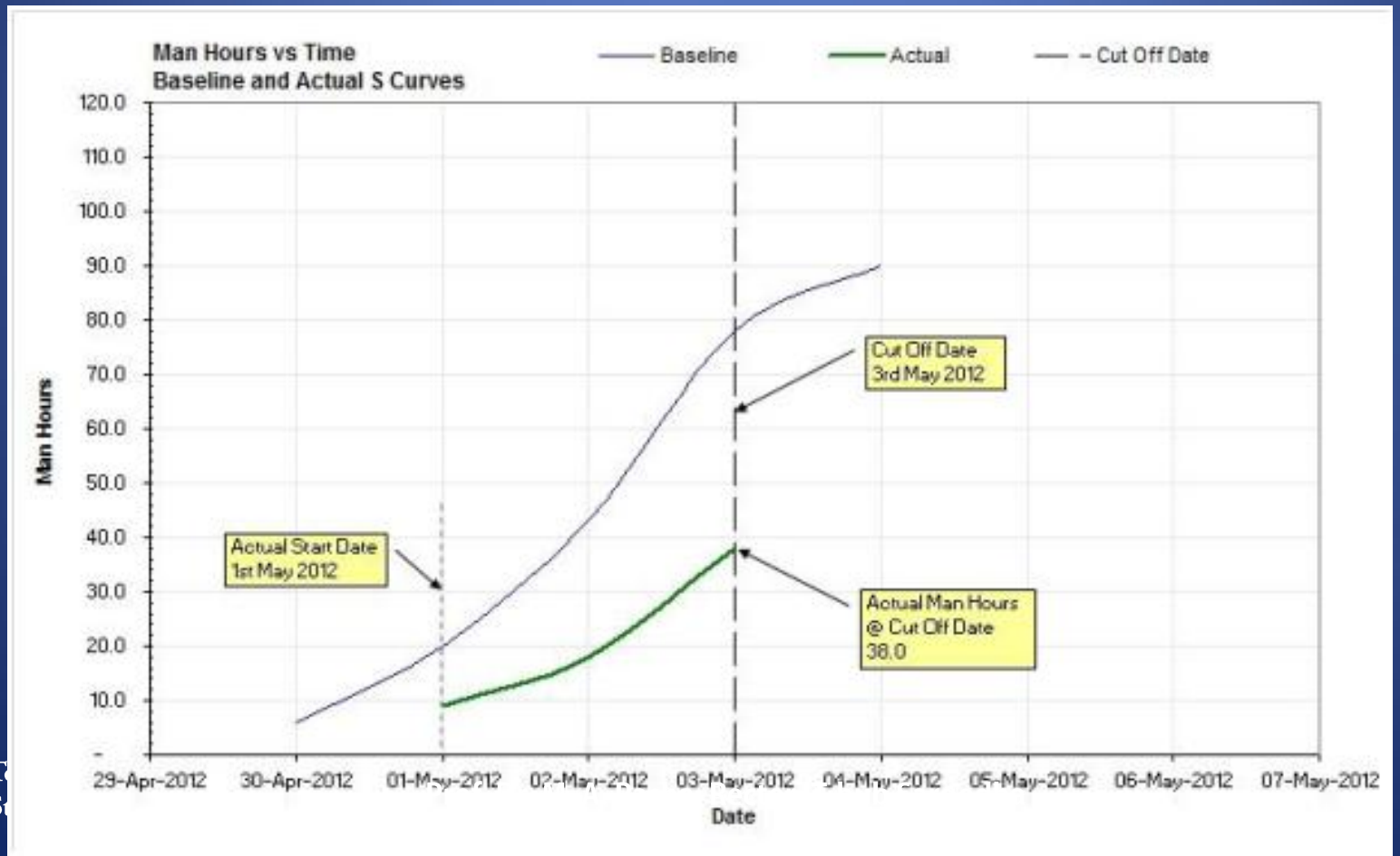
The Target S Curve

The Target S Curve reflects the progress of the project if all tasks are completed as scheduled. In an ideal world, the Target S Curve will meet the Baseline S Curve at the end of the project (On Time, On Budget) or finish below and to the left of the Baseline S Curve (Finished Early, Under Budget).

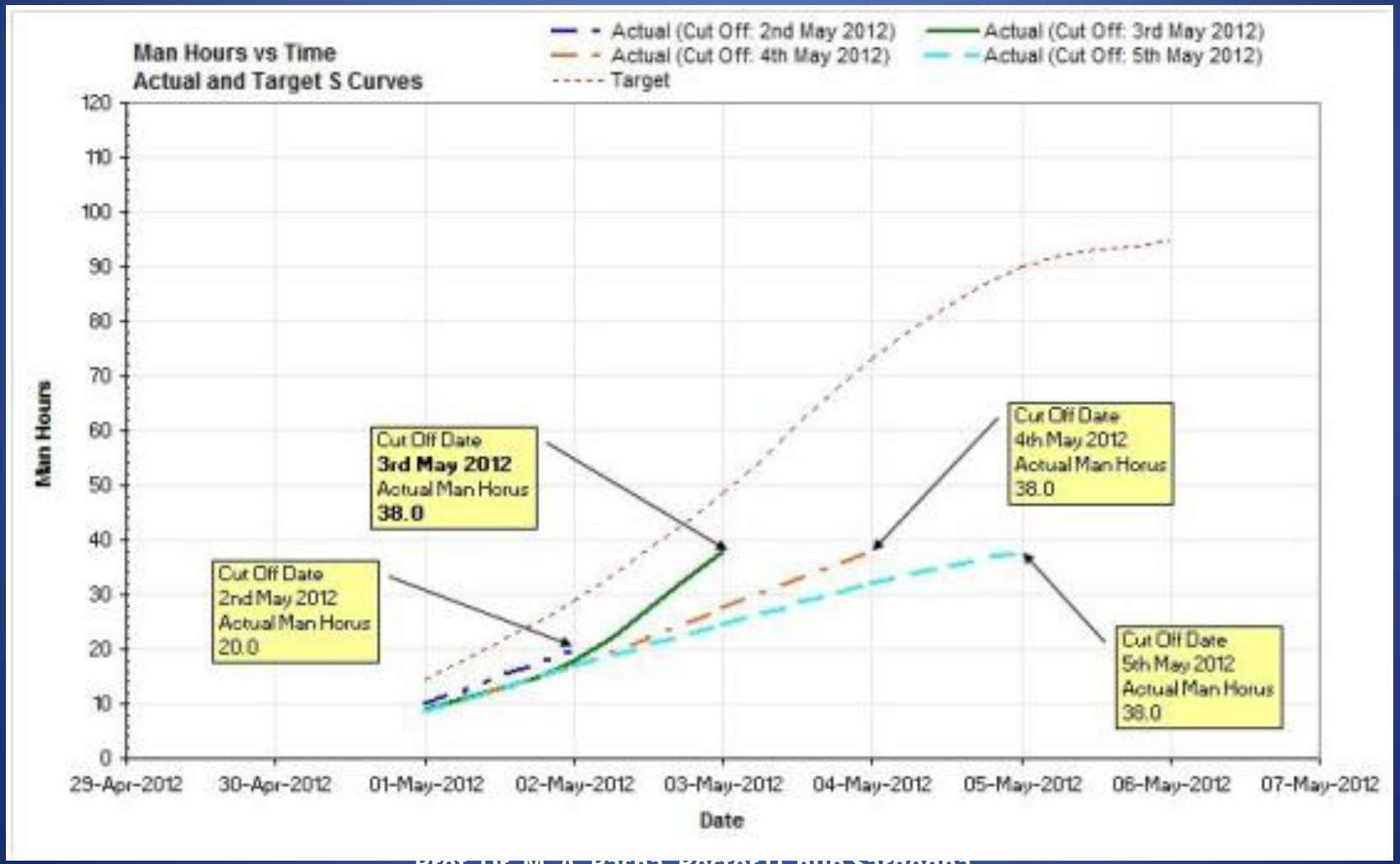


What Is The Cut Off Date?

- The Cut Off Date is the date on which the tasks were physically inspected to determine their percentage complete values.



Example of Actual S Curves Using Different Cut Off Dates



The Man Hours versus Time S Curve

The Costs versus Time S Curve

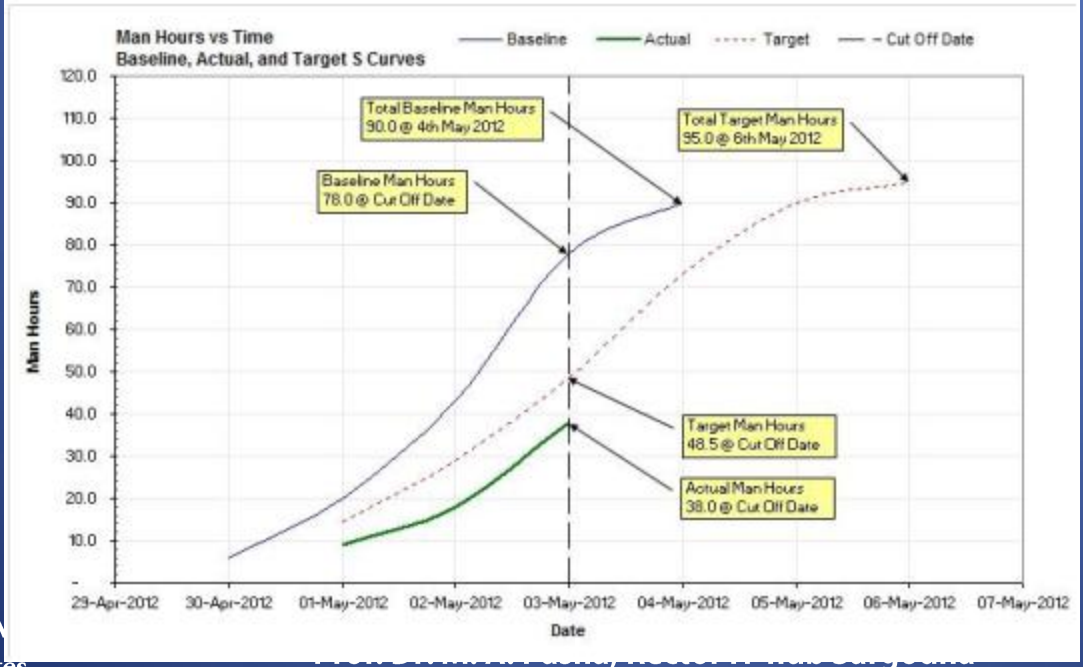
- The Costs versus Time S Curve is shows cumulative costs expended over time for the duration of the project, and may be used to assist in the calculation of the project's cash flow, and cost to complete.

Value and Percentage S Curves

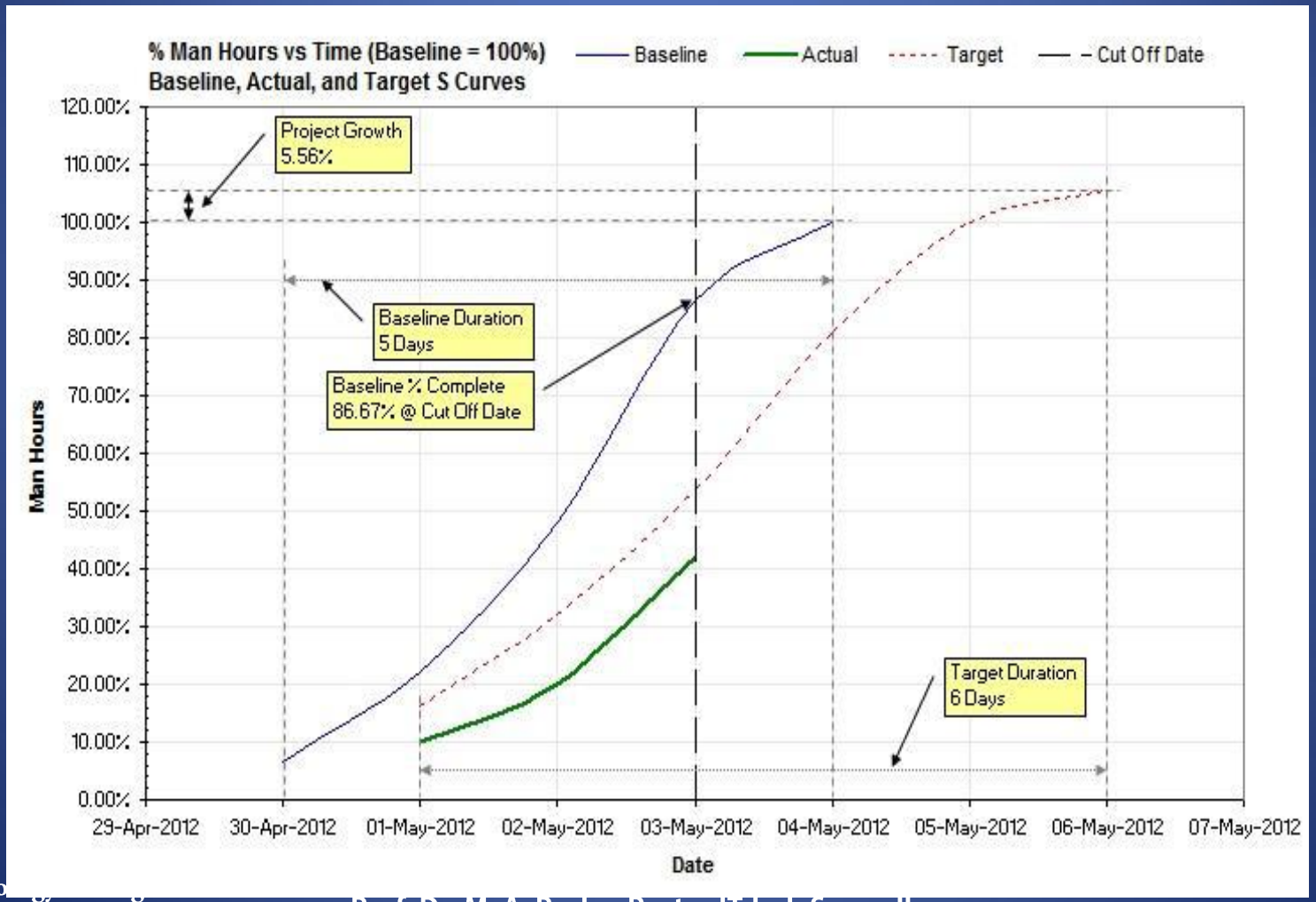
- S Curves may be graphed as absolute values (i.e. Man Hours or Costs) versus Time, or as percentage values versus Time.

Value S Curves

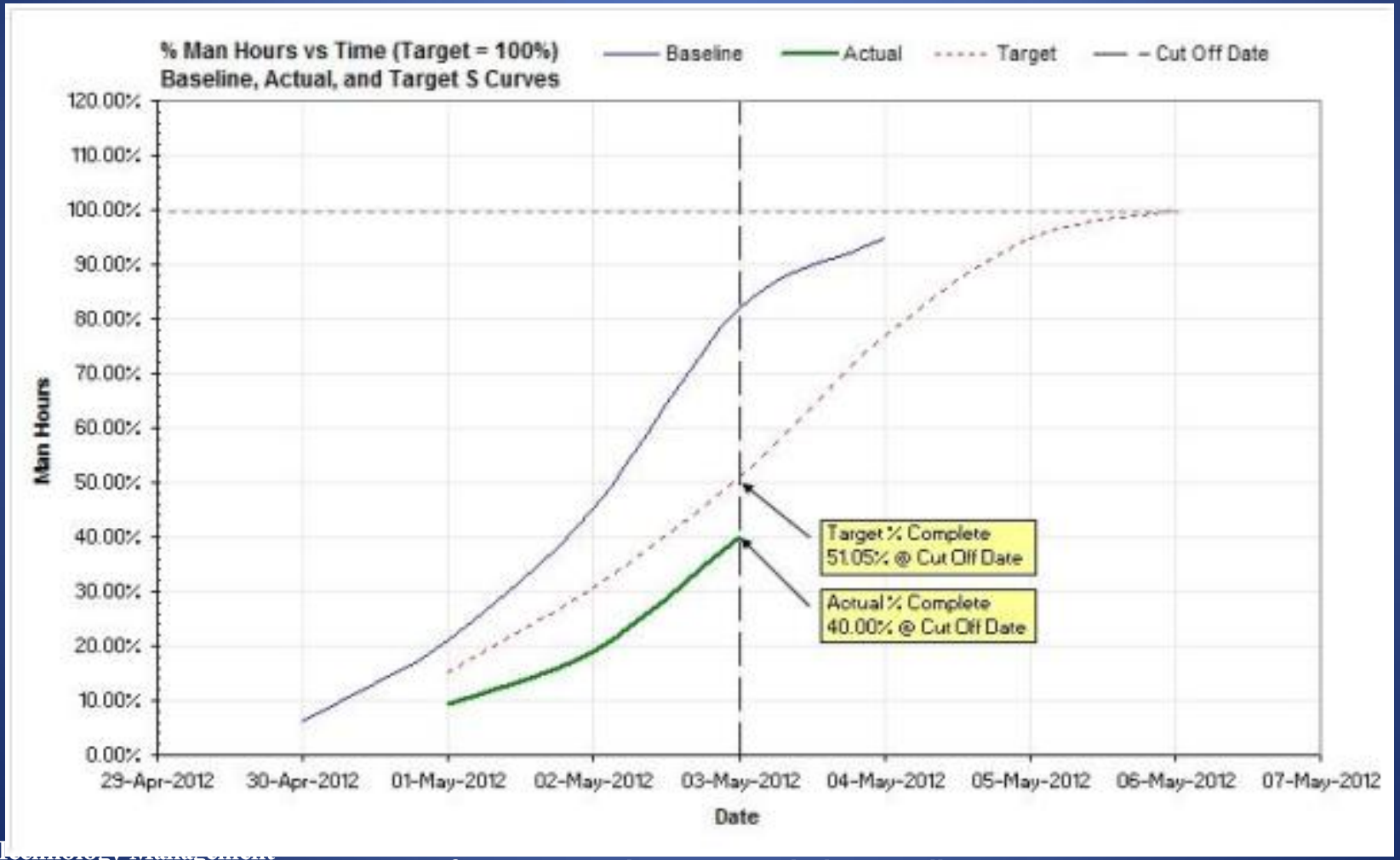
- Value S Curves are useful for determining the project's man hours or costs expended to date, and man hours or costs to complete.



Percentage Man Hours versus Time (Baseline = 100%) S Curves



Percentage Man Hours versus Time (Target = 100%) S Curves

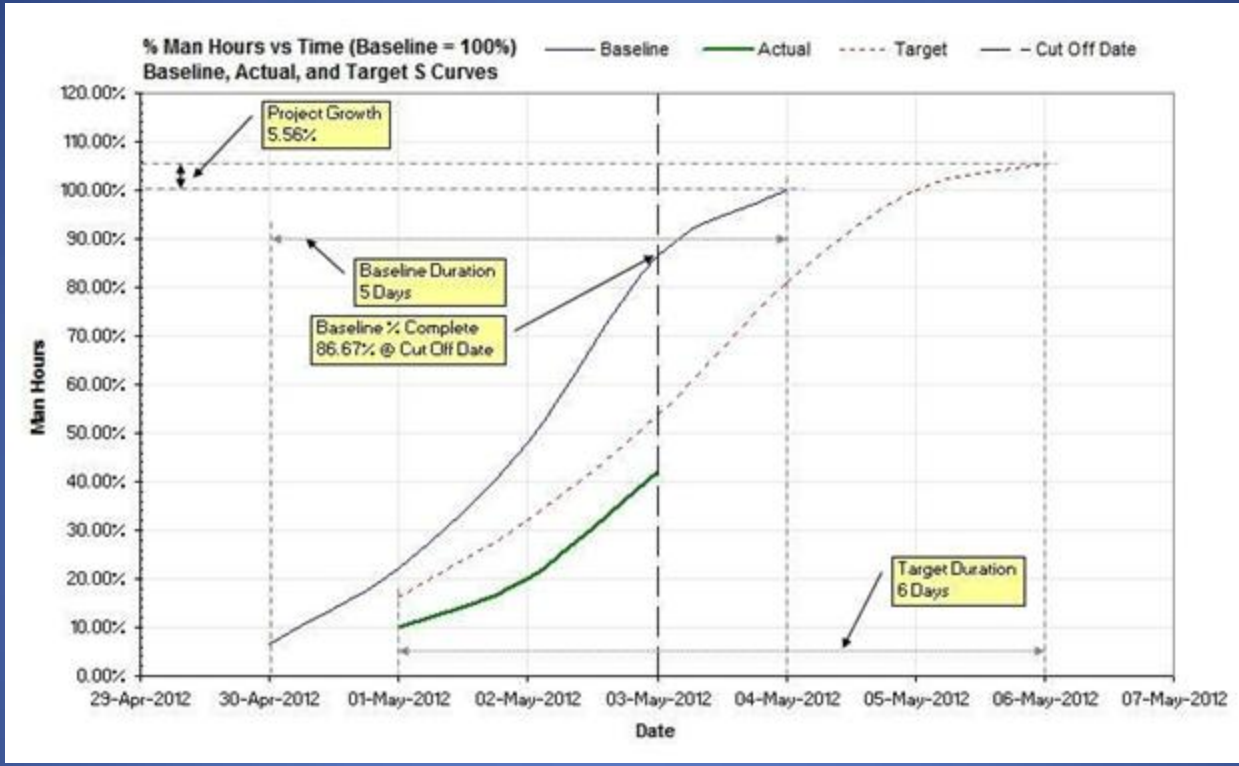


Why Use an S Curve?

S Curves allows project managers to quickly identify:

- Project Progress
- Project Growth or Contraction (Man Hours and / or Costs, Duration)
- Project Start and / or Finish Slippage

Calculating Project Progress

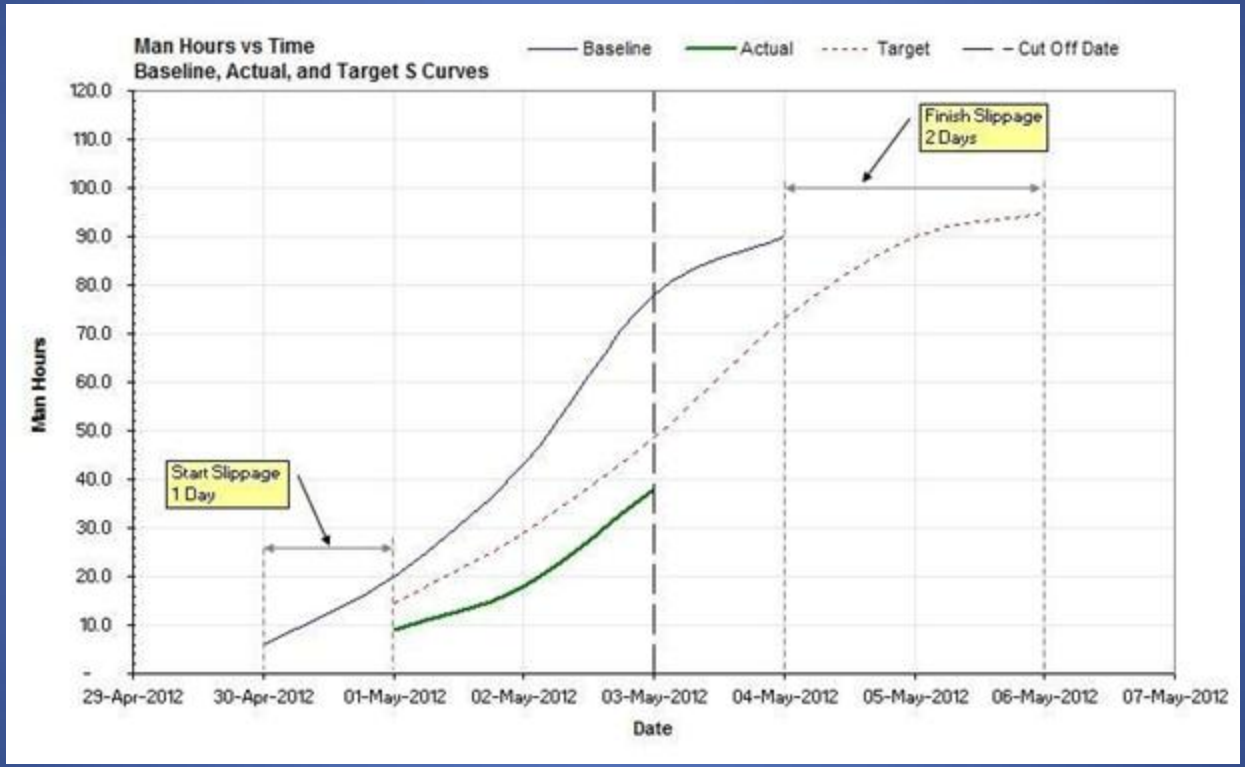


- Analysis of the above S Curves reveals the project as of the 3rd of May 2012:
- Has grown in man hours by 5.56% (105.56 – 100.00)
- Has grown in duration by 1 day (6 days – 5 days)

Slippage

- Slippage is defined as "*the amount of time a task has been delayed from its original baseline schedule. The slippage is the difference between the scheduled start or finish date for a task and the baseline start or finish date. Slippage can occur when a baseline plan is set and the actual dates subsequently entered for tasks are later than the baseline dates or the actual durations are longer than the baseline schedule durations*".

Calculating Project Start / Finish Slippage



S Curve Analysis

- **The progress of the project is behind target .** The Actual S Curve sits below the Target S Curve at the Cut Off Date.
- **The project has grown in man hours.** The Target S Curve finishes above the Baseline S Curve.
- **The project has grown in duration.** The Target S Curve duration is longer than the Baseline S Curve duration.
- **The project has experienced start slippage, and thus started later than planned .** The Target S Curve starts to the right of the Baseline S Curve.
- **The project has experienced finish slippage, and thus will finish later than planned.** The Target S Curve finishes to the right of the Baseline S Curve

Project Progress

Actual % Complete =

Actual YTD Man Hours @ Cut Off Date / Target Man Hours x 100%

= 38.0 / 95.0 x 100%

= 40.00%

Target % Complete =

Target YTD Man Hours @ Cut Off Date / Target Man Hours x 100%

= 48.5 / 95.0 x 100%

= 51.05%

Project Growth (Man Hours)

- Analysis of the Baseline and Target S Curve data at project completion reveals the project has grown in scope by 5.0 man hours, or 5.56% as compared to the Baseline Schedule.

Project Growth (Man Hours) = Total Target Man Hours – Total Baseline Man Hours
= 95.0 – 90.0
= 5.0
Project % Growth (Man Hours) = ((Target Man Hours / Baseline Man Hours) - 1) x 100%

= ((95.0 / 90.0) - 1) x 100%
= 5.56%

Project Growth (Duration)

Analysis of the Baseline and Target S Curve data reveals the project has experience a growth in duration of 1 day, or 20.00% as compared to the Baseline Schedule.

Project Growth (Duration) = Target Duration - Baseline Duration

= 6 days – 5 days

= 1 day

Project % Growth (Duration) = ((Target Duration / Baseline Duration) - 1) x 100%

= ((6 days / 5 days) - 1) x 100%

= 20.00%

Project Start Slippage

Analysis of the Baseline and Target S Curve data reveals the project has a start slippage of 1 day, or 20.00% as compared to the Baseline Schedule.

Start Slippage = Target Start Date – Baseline
=Start Date1st May 2012 – 30th April 2012
=1 day

Start Slippage % = Start Slippage / Baseline Duration x 100%
=1 day / 5 days x 100%
=20.00%

Project Finish Slippage

Analysis of the Baseline and Target S Curve data reveals the project has a finish slippage of 2 days, or 40.00% as compared to the Baseline Schedule.

Finish Slippage = Target Finish Date - Baseline Finish Date

= 6th May 2012 – 4th May 2012

= 2 days

Finish Slippage % = Finish Slippage / Baseline Duration x 100%

= 2 days / 5 days x 100%

= 40.00%