Summary of 30SEPT19

Chapter 3 : Time

- **Planning Building** : **Other Methods**

  - **Critical Chain Method :**
    Critical Chain Method, developed by Dr. Eliyahu M. Goldratt (1997), is **a schedule network analysis technique that takes account of task dependencies, limited resource availability & buffers**.
    This method is based on the **Theory of Constraints (TOC)**

    This method allows the project team **to place buffers** :
    ⇨ To account for limited resources
    ⇨ To manage uncertainty

  - **Schedule Compression :**
    To reduce the duration of a project, you have to reduce the duration of activities on the Critical path.
    Two ways of Schedule compression :
    - **Fast Tracking** : Doing activities in parallel
    - **Crashing Technique** : costs and schedules trade-offs are analysed to add more resources by increasing Project cost.

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- **How to control schedule : Techniques and Tools**
  - **Performance reviews :** They measure, compare and analyze schedule performance → Project Metrics can be developed to compare the plan versus the actual.
    Using the planned versus actual information and analyzing the critical path provides a good way to track the performances.
    - **Trend Analysis : P**roject performance over time is examined to determine if performance is improving or deteriorating. Graphical Analysis techniques are used.

    - **Critical Path Method** : Comparing the progress along the critical path can help to understand schedule status

    - **Critical Chain Method** : Comparing the amount of buffers remaining versus the amount of buffers needed to reach the end date.

    - **Control of schedule by Earn Value Analysis (PMBOK Guide)**

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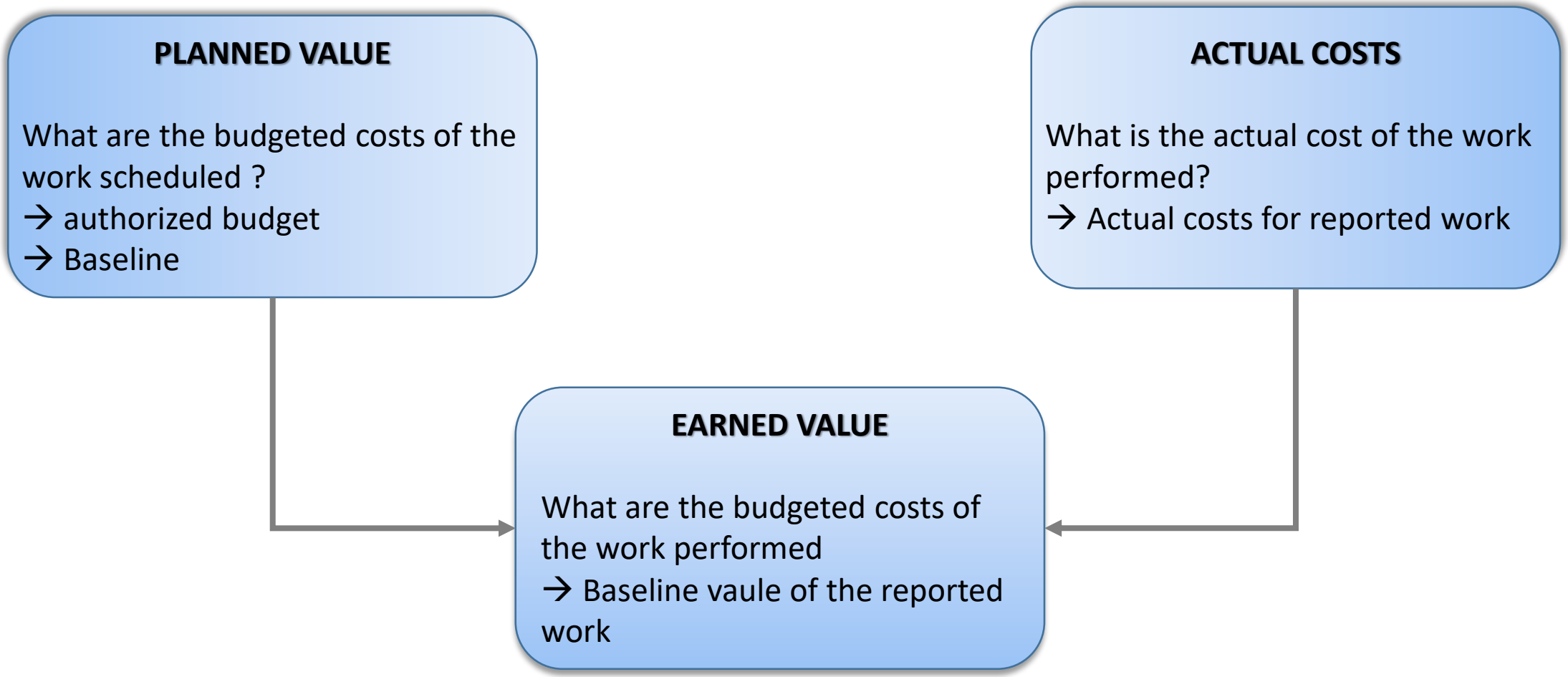
- **Earned Value Management**



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- **Earned Value Management :**

  With the help of these three elements, you can calculate the following variances and performance index:

  - **Schedule Variance (SV)**= Earned Value – Planned Value

    SV = EV – PV

  - **Cost Variance (CV)** = Earned Value – Actual Cost

    CV = EV – AC

  - **Schedule Performance Index (SPI)** = (Earned Value) / (Planned Value)

    SPI = EV/PV

  - **Cost Performance Index (CPI)** = (Earned Value) / (Actual Cost)

    CPI = EV/AC

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- During the project the schedule can start to be on the critical path as :
  - Slippage of activities
  - Changes to activities (new activities / new dependencies …)
  - Reduction of time allocated
  - Problems of resources availability :
    - Issue to find some special competencies
    - Inexperienced personnel …

- To allow to respect initial commitment, the PM can control :
  - the resource allocation
  - The duration
  - Control the end date

If any change of the initial commitment :

→ **new BASELINE is defined**

→ **New BASELINE has to be approved by Customer (internal or external**)

EXAM PREPARATION

1. A **SMART objective** is :
A – Open-ended (ouvert, sans spécification de date d'achèvement)
B – Intelligent
C – Measurable (mesurable)
D – Flexible

2. All the following are characteristics of a project **except** :
A – Unique
B – No Time limitation (pas limité dans le temps)
C – Clear objective with Specific Delivery
D – Temporary

3. To create the **WBS** for the project, you can use as technique :
A – Top-Down
B – Bottum Up
C – Mind-mapping Technique
D – All of the above (Tout ce qui précède)

4. **Critical path** is:
A – The time it takes to finish the project completing only the critical activities
B – Difference between end time and start time of project
C – The sequence of activities that represents the longest path through a project, which determines the shortest possible project duration
D – The sequence of activities that represents the shortest path through a project, which determines the longest possible project duration

5. When there are **multiple critical paths** in a project:
A – The risk is less as it is divided between the paths
B – The risk is more as the risk of delay is more
C – Risk depends on how the critical path is calculated
D – There is no risk as the paths cancel it out

6. Software Project A took 5 months to complete. Project B, very similar to Project A will probably take about 5 months to complete. This expert judgement technique is:
A – Analogous estimating
B – Critical path method
C – Parametric estimation
D – "What if " Scenario

7. **Crashing Technique** :
A – Is a schedule compression technique
B – Increases cost
C – Is achieved by adding resources
D – All of the above (Tout ce qui précède)

8. **Lag** results in _____ of successor activity:
A – Acceleration
B – Delay (by adding waiting time)
C – Tracking
D – Regression

9. A **float** is :

A – The reduction of the overall project duration by using buffers

B – The addition of time to delay the start of an activity

C – The period of time which a task has available for flexibility in its start or finish.

D – The reduction of the overall project duration by adding additional resources

10 - **Fast tracking** means to :

a – Speed up a project through parallel tasks

b – Swap one task for another

c – Reduces the number of tasks if possible

d- Accelerate resources allocation