



## Critical Path Method

**Critical Path Method (CPM)** is one of the basic deterministic methods of the network analysis. Its aim is to determine the duration of the project based on the **critical path** length, which is a sequence of interdependent activities with the least float. CPM allows to facilitate effective time coordination of individual, mutually consecutive activities within the project.

**The critical path** is defined as the (time) longest possible path from start point to end point of the chart. Each project has at least one critical path. Each critical path consists of the list of activities to which the project manager should focus the most, if he wants to ensure timely completion of the project. Date of the completion of the last task on the critical path is also the date of the completion of the project. For critical tasks to be applied, the total time reserve and thus free time reserve is equal to zero, i.e. that the start delay of this task or to extend its duration will affect the final date of the the project. The critical path is reflected in the schedule and project management in all phases of the project lifecycle.

**The use of the CPM in practice:** this method can serve as a tool mainly for estimating the **duration of the project**. It is used for linear projects where the duration can be estimated with a high degree of accuracy, such as the construction industry. The duration of the project activities is usually known by past experience and knowledge from data on past projects. The durations are not statistically determined. The method can be used also in the field of logistics and transportation.

Laws of the critical path:

- › Delayed task on the critical path is hundred percent translated into the delay of the project as a whole
- › Work acceleration on the task lying on the critical path reduces the duration of the project as a whole

Use of the CPM:

- › Gantt Chart
- › Logistics and Transportation
- › Project Management

Similar method:

- › Network analysis methods

Related terms and methods:

- › CCM (Critical Chain Method)
- › Gantt Chart
- › PERT Method
- › Project
- › Project Plan
- › Project Schedule

Related management field:

- › Project Management

Are you interested in this method? You can look to other analytical techniques and methods used in the management of organizations or systems.