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## Software Overview

Projects typically adopt critical path methodology (CPM) as a scheduling tool to develop interdependencies between work activities throughout all project phases. These activities are logically linked to form network diagrams that react to the effects of schedule progress. If activities are delayed or ahead of schedule, it is possible to assess their impact on the overall project schedule. These tools are invaluable for a project to monitor its performance relative to the overall contractual commitments (milestones).

During the life of a typical project there are generally a significant number of deliverables that need to be produced. These deliverables may be contractual (customer) or internal requirements. These may consist of drawings, specifications, reports, procedures, calculations, test results and many others. Due to the sheer volume and the complexity in determining meaningful interdependencies, CPM may not be the most effective methodology for managing the progress and performance of these deliverables. Deliverables are mostly tracked at a level lower than the CPM schedules, in countless workbooks. These workbooks may have limited version control, be susceptible to constant change and not promote a disciplined approach to progress and performance monitoring.

The Deliverable Based Planning approach is based on the measurement of Progress (SPI) and Performance (CPI) of deliverables. It is a structured database that promotes discipline, structure and rigor. It is considered one of the most effective performance measurement and feedback tools for projects. It clearly and objectively highlights where a project is with respect to the overall progress and performance of these deliverables. It utilizes the fundamental principle whereby patterns and trends in the past are accepted as good indicators of the future. It enables projects to integrate the management of scope, time and cost. It is based on the principles of Earned Value Methodology and is the performance measurement of deliverables during the various phases of a project.

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## General Questions

This system provides the project with meaningful performance data thus enabling constructive scrutiny through probing questions for address of perceived issues. These questions are used to determine the progress and performance of the project and also ascertain the actions required to return the project to a desired state.

### **Is the project ahead or behind schedule?**

This question serves to compare the current progress to the baseline schedule. It allows the project to quantitatively assess its progress relative to an established baseline. Deviations from the baseline can be identified early and corrective action taken before it is too late.

### **How efficiently is the project using time?**

The Schedule Performance Index (SPI) shows the project how effectively time is being used. If a performance factor is less than 1.00 it demonstrates that the project is not achieving the planned volume of work within the allotted time period. An SPI of 0.90 means the project has only achieved 90% of the planned output.

### **When is the project likely to be completed?**

The Schedule Performance Index (SPI) shows the project how many hours of work have not been completed relative to the baseline. An SPI of 0.90 means the project will most likely have a 10% overrun when compared to the current burn rate. If the project is burning 3 000 hours per month average and the 10% equates to say 6,000 hours, there is a probability that the project will finish 2 months late.

### **Is the project currently over or under budget?**

By recording actual hours in the system it is possible to compare the actual number of hours spent to complete the amount of work achieved. In instances where the Cost Performance Index (CPI) is less than 1.00 it implies the project is performing over budget. Where the CPI is greater than 1.00 it is under budget. This allows the project to forecast the most probable outcome of the project or to take remedial action by developing cost reduction or margin enhancement opportunities.

**How efficiently are resources being used?**

Man-hours relate to people. The SPI and CPI factors enable the project to ascertain whether resources are being used efficiently or not. It also allows the project to do resource planning. If a particular discipline as an example, is ahead of schedule but over budget, a decision can be made to transfer resources to another discipline (if appropriate) that is behind schedule. The ability to do effective resource planning is improved by reviewing the SPI and CPI of various resource groups.

**What is the likely cost of the remaining work?**

Man-hours equate to labor cost. The over or under run in budget hours, as a result of a poor or strong CPI, allows the team to make an assessment of the probable cost impact (positive or negative) to the project labor cost. This improves the projects ability to forecast. It also enables the project to implement remedial actions in a timely manner to buffer or avoid the impact. This may be linked to the project risk register to determine the impact on the risk provision.

**By how much will the project be over or under budget at the end?**

Based on the projected man-hour over or under run, it is possible to forecast the most likely cost at completion. This improves the projects ability to forecast. It also enables the project to implement remedial actions in a timely manner to buffer or avoid the impact. This may be linked to the project risk register to determine the impact on the risk provision.

**Where are problems occurring (pinpointing)?**

The report filter function allows the project to investigate and identify areas of concern that require attention. This pinpointing enables effective and timely action to be taken to return the project to a desired state. Mitigation plans, recovery plans and management focus are essential aspects for identifying the opportunities to address issues.

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