



## White Paper 2016-04

### 3 Steps and 7 Principles for Proper Forecast of Integrated Project Schedules

*Proper Integrated Project Schedule update and forecast are essential activities to maintain a schedule that can effectively be used for reference and decision-making. In this White Paper we cover the schedule forecast of future activities. The issue of proper update for actual progress is covered in the White Paper [2016-03](#).*

#### The Three Steps of Re-Forecasting

Re-forecasting a schedule occurs in three steps:

1. Based on the actual progress of the **currently ongoing activities**, determine their expected re-forecast completion time;
2. Observe how the **Project activity network evolves naturally** as a consequence of the re-forecasting of the ongoing activities, and whether issues need to be tackled with regard to certain requirements;
3. **Reforecast future activities' duration and effort** (activities that are not yet started) based on the new knowledge available from ongoing activities or any new information that needs to be taken into account.

The first and the third component require activity re-forecasting methods (duration and possibly, effort level). The second component is the natural consequence of a well-designed and connected activity network with a minimum of artificial constraints. The latter will normally be ascertained as part of the quality of the Integrated Project Schedule, so that we won't elaborate further in this Chapter. We will thus concentrate on the issue of re-forecasting currently ongoing and future activities.

It is important for Project Managers to be aware that while planners quite naturally tend to reforecast activities that are currently ongoing, they might lose sight that new information is now available that can also be used to update certain future activities. It is often up to the Project Management Team to challenge the planners and ensure that the knowledge is effectively applied to non-started future activities, whenever appropriate.

#### Forecasting Principles

From these 3 steps and our experience we have derived 7 schedule reforecast principles.

#### 1-A Good Forecast Relies on an Accurate Update

It goes without saying, but there is a little chance to figure where we are going if we don't know where we are. Refer to [White Paper 2016-03 for 7 principles of proper Integrated Project Schedule update](#).

#### 2- Do Not Forecast Bottom-Up

Contrary to schedule update, it is not necessarily appropriate to approach re-forecasting from a bottom-up perspective.

Bottom-up re-forecasting activity by activity will not be meaningful if one does not understand the reasons for the deviations from the baseline durations, or for delays due to some critical activity.

Bottom-up re-forecasting often leads to unexpected and overlooked consequences on the overall schedule; critical convergence points can make sudden and unexplained shifts to the right. Forecasting at a higher level will allow re-sequencing and rescheduling of future activities to accommodate detailed level changes: there often exist

alternative sequences of work that can be implemented if the base plan is affected by early or late progress.

**What is mostly feared is that the Critical Path may suddenly jump to another Project area. Forecasting needs to focus on this issue.**

#### 3-Forecasting Is Not a High Level Exercise Either

Project forecasting can neither be done at a too high level for the following reasons:

- The linkages between activities might create significant bottlenecks or unexpected consequential effects between functions, sites and unrelated activities,
- A subcritical chain of activities might suddenly become critical and drive the Project unexpectedly.

These effects would not be visible at too high a level.

In particular, while overall S-curves (generally presented by function or area) are a useful summary of schedules, they should be used with caution to re-forecast based on the current condition. The same holds for project-level Earned Schedule application. These representations aggregate too many factors; they are useful for high level reporting, but are much too simplified and often ineffective when it comes to forecasting. Actually, they would be a valid tool only if delays were only due to productivity without any critical chain or convergence issue, which is rarely the main factor for delays in Large, Complex Projects.

#### 4-Focus on Critical Path Activities and Critical Resources to Reforecast

In the forecasting process, a particular focus should be put on the activities on the Critical Path or on activities which are close to being critical. The Critical Chain as a concept also includes the consideration of the resources

that need to be mobilized for the execution of the Project. Resource constraints (in particular for resources that are shared in a portfolio of Projects) need also to be considered for the potential to make critical activities that are not formally on the Critical Path.

What is feared is that the Critical Path may suddenly jump to another Project area. If this instance appear to be possible, a particular focus is required during the forecasting process to apprehend this issue.

### 5-Work/Budget Owners need to be committed

Work/ Budget Owners are the ones accountable for the forecast of their activities, not the planning team. While they have to be challenged by the planners, they need to formally approve the forecast and need to be involved throughout the process.

### 6-Implement information assurance processes

Data needs to be cross checked and all parties must be involved in a comprehensive communication system to ensure that the final forecast effectively represents a team view of the Project forecast.

### 7-Do Not Forget to Reforecast Non-Started Future Activities

As mentioned in the forecasting steps, it is important to re-forecast future activities in the light of available information, even if they have not started yet. It is the case, in particular, if present or past activities of similar nature give reliable schedule productivity data in the particular context of the Project.

Do not lose sight that new information can also be available from other sources that can also be used to update certain future activities. Such benchmarking information can be available e.g. from other projects currently operating in similar conditions.

This is particularly important for durations and impacts that will be recurring on the Project, such as climatic and seasonal impacts, infrastructure availability constraints (port, access road, heavy weight equipment), turnaround times for trucks or dredges to the load-out or dump area, etc.

**Forecasting is not a bottom-up or a top-down exercise. It requires experience and insight to determine the drivers of the Project**

### Conclusion

Schedule reforecasting is difficult because it takes a good understanding of the business. Yet Project teams do not spend enough time supporting their planning teams in that task.

Beyond conventional and easy productivity-based reforecasting – that needs to happen at the relevant level to be effective – what is to be feared are discontinuities in criticality due to the unexpected change in Critical Path/chain for the Project.

**Find all these principles of Advanced Scheduling exposed in a comprehensive manner in our Handbook, [Advanced Project Scheduling for Project Managers](#) (2<sup>nd</sup> edition available in [Paperback](#) and [Kindle](#) versions!)**



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