



White Paper 2016-03

7 Principles for Proper Update 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 update for actual progress. In the next White Paper [2016-04](#) we cover the issue of proper re-forecasting.

The Integrated Project Schedule must reflect reliably the actual situation of the Project. The following 7 principles apply.

1-Seek Accuracy not Precision

From the theory of measurement arises the important distinction between accuracy and precision:

- Accuracy is how close a measurement is to the actual value,
- Precision is how consistent the measurement is if repeated many times (but that does not mean that it is accurate with regard to the actual value).

A measurement system can be accurate and not precise, precise but not accurate, both or none. It is very onerous to have a system that is both precise and accurate.

As we measure the current situation of the Project, we mainly aim at accuracy. While precision would be a bonus, we won't repeat the measurement too many times for each update; at the next update the error can be expected to be randomly moving, and average out eventually.

2-Updating is a Bottom-Up Exercise

The Integrated Project Schedule (and the more detailed functional schedules) needs to be updated in a bottom-up approach, activity by activity.

It would not be effective to try to update by group of activities or at a high level because it is not the level at which the update information is available.

Actually, many of the Integrated Project Schedules' activities may not be updatable directly, but only through the aggregation of more detailed updates available in the detailed functional schedules.

3-Face Reality

Sometimes we encounter Projects or organizations that maintain a delusive schedule, either by not updating it, or by only updating certain activities that are not really critical. It can be encouraged by certain organizational cultures where candidness is not appreciated and cover-up recommended (these organizations often show a very high rate of personnel turnover).

This is an absolute killer when it comes to Project execution. Reality might not be nice to look at, but it certainly needs to be stared at in all its dimensions so that the right decisions can be taken at the right time. Reality

is not scary in itself; fear is only an emotional reaction to reality.

One should not be scared to be candid when updating the schedule. Reality is what it is. The role of the Project management is to deal with it.

4-Manage Information Delay and Bias

Delays often arise from contractors and suppliers, which may report outdated information that needs to be extrapolated or figured out using parallel measurements. The issue also arises when extrapolation is required from a different effective measurement cut-off date.

Bias can affect measurements systematically. A proper progress measurement system is mandatory (refer to principle 7). In addition, the scheduling team must make sure that there is no systematic over-estimating of progress on particularly critical activities. This relies on other type of evidence e.g. photographic or quantity-based evidence. A classical area is when engineers are asked to estimate their progress between document

status milestones; or engineering contractors that tend to overestimate progress when it is linked with billing.

5-Updating Must be Comprehensive

The schedule must be comprehensive, hence aligned to the Work Breakdown Structure.

Updating must also be comprehensive, i.e. all ongoing activities must be updated. Activities that have effectively started since the last update must be carefully identified.

6-Manage Information Bottlenecks

- Limit the complication and size of Project schedules to keep them manageable (think how many activities a planner can reasonably update in a day if the full work of listening to the people in charge is effectively done) (ref. Chapters 2 and 4 on the discussion on the size of the Integrated Project Schedule),
- Make sure that all relevant parts of the Project team are actively involved in the update sessions even by remote teleconference or other ways and fully understand the importance of the update process,
- Ensure that there are real conversations ongoing on the actual status of activities, and not just updates of documents or tables. The Project Control team needs to get a feel of the situation. This might require the involvement of the Project Control Manager to help having candid conversations about

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the actual condition of segments of the Project, and even travels on site to gauge the actual progress with an independent eye,

7-Implement Progress Measurement Best Practices

A number of best practices must be implemented (refer to our handbook) which include in particular:

- Engineering:
 - minimize progress recognition for starting a document,
 - rely as little as possible on engineers' judgment for document draft progress, rely rather on actual stages such as first draft for internal review,
 - and do not recognize 100% progress for the first Approved for Construction (AFC) version as there are often later updates (e.g. a first AFC version of the document can be weighted 90% only).
- Procurement & Fabrication
 - Make sure to rely on actual physical progress, require and approve a detailed schedule and progress measurement system from the suppliers / fabricators and roll-up the result at the level required.
- Service contracts and logistics
 - Determine a very limited number of physical quantities that can be used as trackers for physical progress.
- Construction
 - Make sure to rely on physical progress. Manhours spent is an indication of cost, not of progress,
 - Do not overcomplicate and devise a limited number of key quantity indicators (e.g. volume of concrete, weight of re-bar, length of pipes, number of spools etc.) that will be representative of physical progress and serve as a check to possible more complicated measurement systems based on detailed schedules.

How to Quickly Check the Quality of a Schedule Update

It is very simple to check the quality of a schedule update: take the latest update of the Integrated Project Schedule and confront it, both in terms of present situation and short-term forecast, with people doing the groundwork. It is enough to do that on a sample that covers all types of activities (engineering, procurement, and construction). You will very quickly ascertain:

- Whether people in charge of the work have been interviewed and feel they have been listened to when it comes to the work progress and short-term forecast,
- Whether the schedule actually reflects the real situation as felt by the people that are close to the Project execution.

It is not generally even needed to go and check the physical progress on site, unless there is a significant doubt of inadequate reporting for other reasons. Most often, people in charge of construction don't disguise reality.

Such checks are easiest done by someone from outside the Project team to ensure candidness and avoid conflicts of interest; but it can also be done quickly from inside the Project to get a feel of the quality of the information.

Conclusion

Being able to transform the informal knowledge spread inside the Project team is an essential process capability for successful Projects, in particular when they are Large and Complex, and even more when the Project team is spread between different sites.

Reality is sometimes uneasy; but it is much better to know the reality, and structure this knowledge so as to be able to act on it. Too many Projects maintain illusions too long in their schedules, falling prey to a delusory perception of reality which will catch up sooner or later. Don't let this happen to you and be constantly ready to challenge an update to make sure that your vision of reality is not impaired.

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



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