



## White Paper 2012-26

### **From a Static to a Dynamic Vision of Project Schedules: Why Conventional Usage of Schedules is a Real Waste of Time and Resources Compared to the Value it Easily Could Provide**

*Most project management people use the project schedule as a static tool. They look at the latest update, consider the latest network of tasks and available floats. Rarely if ever do they refer to previous updates to check how things have been changing – and even more rarely in any kind of systematic way. This is a pity as there is much more meaningful information available from the same data by moving to a dynamic vision – and it's quite simple and easy to do!*

#### **Conventional scheduling practice is static**

In conventional scheduling, a project schedule is developed at the beginning of the project, providing a baseline. Then it is updated on a regular basis (week, fortnight or month) to provide the latest, up-to-date vision of the actual progress of the work and of the impact of this progress on the rest of the project execution.

Comparison is often made to the baseline – represented as lines on the main schedule and as a reference curve on S-curves and other advanced graphical indicators derived from the main schedule.

However, rarely if ever is reference made to the evolution from the previous reporting period. The previous update is often binned at the time the new update hits the desk of the project manager. Except for those few activities that are particularly under scrutiny at the time, no evaluation of their change over time is ever made.

#### **Why measuring dynamic parameters provide much more information for forecasting**

A project is a dynamic endeavor in multiple dimensions. Static scheduling is exactly like if we tried to apprehend the dynamics of a bouncing ball with regular snapshots – and just looking at one snapshot only. This is a highly limited view – we can probably measure the distance to the goal but we have no information whatsoever about how the ball is evolving dynamically in space.

What can we infer from a series of snapshots compared to just looking at one snapshot? We can have much more information: we can measure not only a position in space, but also speed, rotation, and all sorts of dynamic parameters. We can get a much better understanding of the forces at play and how they interact.

By knowing such dynamic parameters like speed, we can extrapolate the system dynamics into the future with a good confidence and thus, anticipate reaching our goal and identify potential problems.

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#### **Seek the right balance for the frequency of schedule update**

Snapshots should be frequent enough so as to record faithfully the actual movements – otherwise they would be deeply misleading. Thus the frequency of schedule update should be adapted to the dynamics of the project under consideration. Too infrequent snapshots will give an absolutely wrong image of the system evolution.

On the other hand, it is not very useful to increase too much the frequency of the snapshots: above a certain frequency it does not really provide that much additional information about the dynamics of the system. Thus, one should not waste time and resources to

update the schedule too often compared to the natural project evolution dynamics.

However this is something we often encounter in our consulting work: inordinate resources spent to update schedules too often. This results in misleading, incomplete updates (due to time constraint); overall inefficient use of scarce resources; and lack of time to interpret the data in a meaningful way for decision-making.

There might be some particular activities that warrant more frequent snapshots than others; for example, engineering generally warrants a weekly progress update at the beginning of the project, while most other activities might only warrant a monthly update. It is fine to do more frequent updates of these particular activities, but don't spend energy trying to update the entire schedule at the same time! If there is some time available, better spend it on analyzing and understanding what really drives it.

#### **Why conventional usage of scheduling is often a real waste of time and resources for the result it provides**

Projects management teams generally make a considerable investment in time and resources to update the project schedule: expensive dedicated planners; an update process where the information about progress is collected; schedule data exchange protocols with suppliers and contractors; sessions to reforecast progress on specific activities...

And at the same time, because they only use the schedule statically, while all this effort is made to collect and group information in a meaningful way, an awful lot of very meaningful information about the project's dynamic evolution, that is available there, gets lost and is not used! Thus most project teams are spending inordinate amounts of effort and cost and only use a few percent of the available information they generate. What a waste!

### **Simple ways to follow the schedule's dynamics**

How can we move easily from a static to a dynamic vision? A very straightforward way is to plot the end date, the float against a fixed milestone, or simply the float of chosen activities, as they evolve at each schedule update. By plotting these values on charts that show how they change with each snapshot, trending analysis can be done – allowing some forecast of future dynamics.

“An activity that is delayed by one month every month is not converging”. Either it is an artefact due to an insufficient schedule update process, or a mistaken link; or maybe it is a real upcoming issue: in any case it warrants investigation to check why delays are repeatedly reported.

The fantastic value added of this method is related to the fact that trending allows to anticipate the dynamics and act before activities become obviously late. Through this anticipation, actions to bring the project under control can be early, more effective and less costly.

### **Practicalities of following activity snapshots**

It is very simple to make the schedule follow-up dynamic. Update the schedule following the usual process; then download the schedule dates of all activities in an excel spreadsheet and copy-paste the values next to the previous months' values. Simple formulas and filters can then be used to systematically screen problematic activities, e.g.:

- Slippage of more than 25 days in a month
- Float negative or of less than x days

A number of activities will pop up that can generally be related to a limited number of activity chains that need to be further investigated. From our experience a good percentage of suspect activity chains will turn up to be mistakes in the schedule linkage or lack of updating. The remainder will be flagged as really problematic and will warrant close attention of the project management team. Trending of these problematic activities over 3-4 months will already give a good idea of the dynamic trend and whether the particular activity chain might suddenly become critical in the future, driving unexpectedly the project delivery.

### **Trending dashboards for schedule convergence points**

Specific dashboards can also be developed around specific convergence points in the project. The float of the different activity chains that are supposed to converge at that point are tracked and trended on a single page dashboard. Soon enough will the project management team be able to identify what are the converging chains that will be problematic and they will be able to take action, anticipating therefore a possible crisis.

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### **Conclusion: stop wasting resources and spend more time interpreting the already available data**

This is a manifesto for doing less tedious work and more brain work. Maximize the usage of the tedious but necessary process of getting information to update the schedule – spend more time (in proportion) making sense of it for the sake of sound decision-making and anticipation. So much information is available that we don't take time to interpret properly!

This paper gives some straightforward hints as to how to extract much more value from the information already available. Grab the opportunity – become dynamic schedule readers, and anticipate problems before they are apparent in a static view of the project!



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