

# Momentology

Momentology<sup>1</sup> focuses on measuring the momentum of work on the project. Each section of a project has its momentum as does the overall project. The loss of momentum equates to a delayed completion.

Momentum Management is the process of applying Momentology to a project focusing on the proactive management of future performance based on actual 'real time' information.

Some of the key aspects of Momentum Management include:

- Performance Intensity – measurable progress based on 'duration days' (see below)
- Proportional float allocation per activity – 'discrete activity float'
- Assessing the Schedule Achievement Potential
- Tightening the understanding of task and path criticality (new definitions)
- Structured process for determining relationship durations
- Measures: Performance Coordination, ie, the alignment with schedule sequence and durations
- The ability to predict schedule slippage before it happens

Momentology is based on 'Execution Schedule' (High Density Schedule<sup>2</sup>), by observing the work and taking the appropriate measurements this methodology allows real time decisions and actions.

## Performance Intensity

This ratio is the core of Momentology. The basic calculation for a period is the total number of duration-days divided by the available work-days.

- Work-days are the number of scheduled working days in the period based on the primary project calendar for the section of work.
- Duration-days are the number of days scheduled for work on all of the activities within the period. A 10 day activity would have 10 'duration-days' in total, but only those in the period being considered would be counted.

For short periods, this can be used without adjustment. The average performance intensity for a whole project though will be significantly less than the peak performance required.

**Actual Performance Intensity** is calculated by dividing the 'duration-days' accomplished by the 'work-days' consumed. This value can be contrasted with the catch-up performance intensity.

**Catch-up Performance Intensity** is calculated by dividing the remaining 'duration-days' by the remaining work-days. The difference between API and CPI indicates the minimum necessary change in performance needed to complete the section of work on time.

Simply accomplish work is insufficient, it is also necessary to focus on the work that has the highest priority. Priority is based on a number of factors including the *discrete activity float*.

---

<sup>1</sup> For more on Momentology, see: **Faster Construction Projects with CPM Scheduling** (Murray B.Woolf)  
<http://www.mosaicprojects.com.au/Books.html#Murray>

<sup>2</sup> Schedule Density see: [http://www.mosaicprojects.com.au/WhitePapers/WP1016\\_Schedule\\_Density.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1016_Schedule_Density.pdf)

## Relationship Durations

Up to 40% of a typical critical path travels through relationship durations (Start-Start / Finish-Finish). Calculations to determine priority and performance intensity take the effect of link durations into account. Some 90% of delays in this area are caused by Administrative failures (rather than production issues) and are the focus of specific measurement.

## Summary

Momentology uses a complex set of formula to balance three interlinked variables:

- **Performance diagnostics** that monitor management performance, execution performance and resource performance.
- **Schedule achievement potential** that computes the probability of achieving schedules time-based objectives based on the cumulative values of Schedule Vulnerability and Schedule Resiliency.
- **Schedule credibility** that computes the overall believability of the schedule by considering Schedule Relevancy and Volatility.

Its primary purpose is to measure productivity and identify losses of productivity quickly. Identifying where productivity is dropping allows timely and direct action to remedy the situation before significant schedule slippage occurs.

---