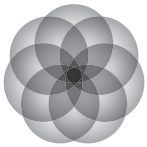
// The Value of a Standard Schedule Quality Index

Dr. Dan Patterson, PMP
CEO & President, Acumen

March 2012



ACUMEN
Proven Project Analytics

+1 512 291 6261 // info@projectacumen.com

www.projectacumen.com

Table of Contents

Introduction

This white paper describes the need for and value of adopting a single and standardized index (score) to reflect the quality of a project schedule. This discussion is based upon the recently launched Schedule Index™, which is now available in a standard format to any project team wanting to determine how their schedule quality ranks. In addition, the paper describes the value of using Cloud-based technology to not only score your project, but also compare the results with other similar projects, providing a means of benchmarking your project against others.

What is the Schedule Index™?

The Schedule Index™ is an overarching score that gives direct insight into the quality of a schedule. Prior to this Index, objectively determining the quality of a schedule has been somewhat of a art and science hybrid. While the project management industry as a whole has made positive steps forward with regards to developing various checks and balances (metrics) for project critique, there has lacked a single overarching indicator of quality; that is, until now.

How is it Calculated?

The Schedule Index™ is a single score that is calculated from nine separate schedule check metrics. These are described in Appendix A. The metrics span multiple key attributes, or building blocks of a schedule that together form the underpinnings of a structurally sound schedule:

- Logic: ensuring sufficient, yet not overly complicated logic
- Float: determining how much of the schedule is critical
- Duration: checking for consistent level of detail within the schedule
- Constraints: focusing on two-way, or hard, constraints
- Leads/Lags: reviewing the application of durations on activity relationships

These five core attributes are key to the successful development of a sound and realistic schedule used as the plan of attack for any given project. The nine specific metrics have been tried and tested on thousands of projects and over the past three years have been criteria-adjusted and calibrated in order to provide the most accurate and useful insight possible. For example, within the Index, specific criteria have been applied to exclude milestone and summary activities to avoid skewing the results of an analysis.

The metrics themselves are each weighted based on importance and its potential impact on the overall quality of the schedule. Much calibration work has been conducted to ensure appropriate weighting for each of the metrics. The goal here has been to establish an Index that gives a broad, yet representative range of results taking into account the key drivers of schedule quality.

The Schedule Index™ itself provides a zero to 100 range with zero being the worst possible and 100 being a 'perfectly formed' schedule.

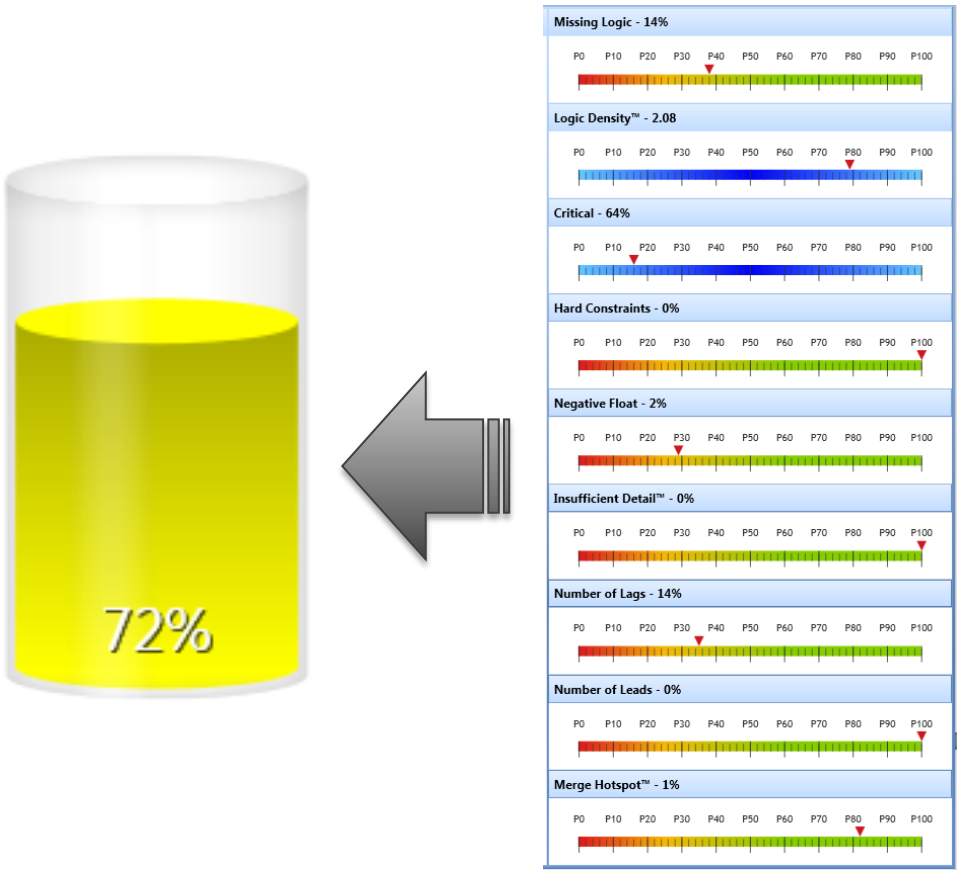


Figure 1- Combining Individual metrics into an overarching Schedule Index™

Why the Need for Standardization?

The need for standardization is compelling yet simple: projects, irrespective of type and size, all benefit from a means of determining the quality of their schedules that is consistent and repeatable. There is a reason why the likes of consumer credit scores or college entrance exams use common and agreed upon scoring systems – scores are only useful if we can consistently use them to compare against a benchmark or other similar entity.

Example use cases of adopting the Schedule Index™ include but are not limited to:

- Monthly comparisons of schedule updates by an owner organization
- Internal self-assessment of a contractor-developed schedule
- Agreed-upon target goals between owners and contractors

What Score Should I Be Achieving?

In addition to having a standardized Index, it is valuable to establish thresholds or goals that a project should be achieving with regards to schedule quality. This is similar to defining a given Confidence Level (e.g., P75) when conducting a risk analysis.

The standard pass/fail threshold established for the Schedule Index™ is 75 or higher. It is not reasonable to expect large, complex projects to score 100. Conversely, there needs to be a threshold against which a schedule is rejected or at least reviewed and updated. Anything less than 75 should trigger a schedule review.

If your organization is looking to be truly best of breed or accelerate its schedule quality maturity then consider pushing this threshold to 85.

Benchmarking: The Value of Cloud Computing

Closely tied to the value of scoring a project based on its schedule quality is being able to see how this score compares to other projects. The results can be extremely insightful. Prior to cloud computing, such comparisons were time consuming at best and at worst, physically impossible.

Cloud computing became hugely popular with the introduction of social networking. This has since spilled into the analytics world and is now a key component of the Fuse Schedule Index™ solution.

By comparing the results of a Fuse Schedule Index™ to other projects whose results are stored anonymously in Acumen Cloud™, you now, for the first time, have an instant means of seeing how your project compares to others. Being able to understand how you rank gives you much more insight than a non-contextual score.

Figure 2 shows an example of a project that scores 72 (below the 75 threshold) yet, relative to other similar projects, it actually ranks in the 87th percentile.

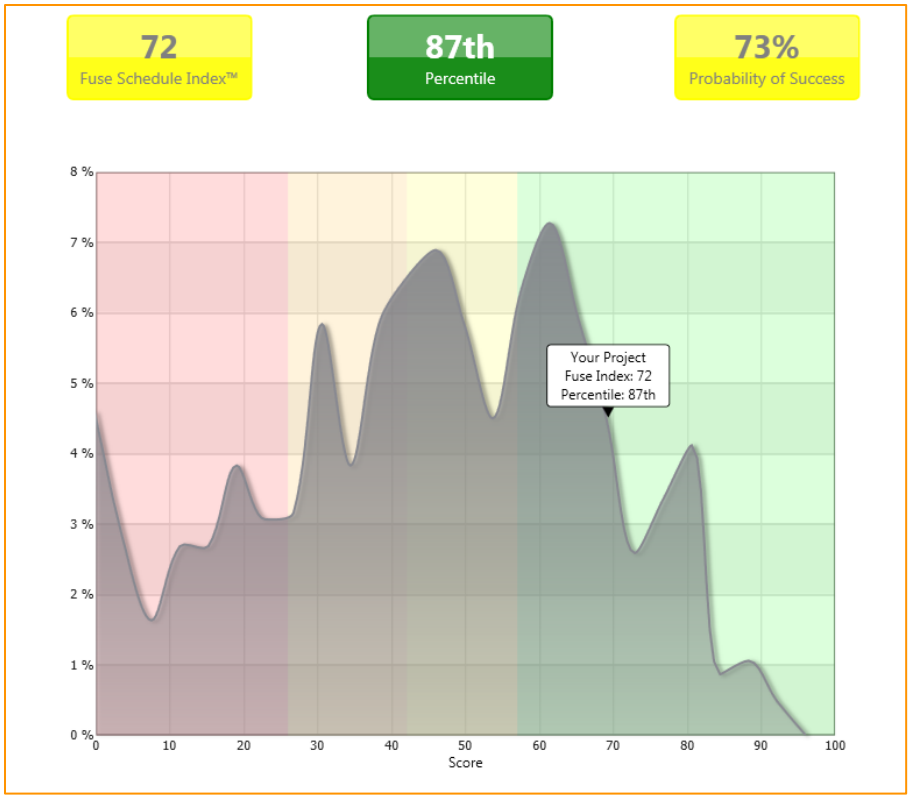


Figure 2- Benchmark Analysis on a Schedule Index™ Score

Conclusions

It is generally accepted that the higher the quality of a project schedule, the higher chance the project will be executed smoothly and to agreed upon expectations.

Tied to this, standardizing schedule quality assessment scoring has obvious benefits. Being able to consistently score projects while accounting for the core building blocks of a schedule provides a repeatable and defendable means of objectively critiquing a project plan. This is now possible with the Schedule Index™.

Adding to the mix the ability to rank a project and benchmark it against other projects gives further insight into whether the obtained Schedule Index™ score is acceptable based on the project's type and size.

The Schedule Index™ is an indicator of quality and not in itself a magic solution to fixing the schedule. The activities highlighted through the individual metrics within the overarching Schedule Index™ should still be used as checklists for resolving the shortcomings in the schedule itself.

Appendix A – Schedule Index

Missing Logic

In theory, all activities should have at least one predecessor and one successor associated with them. Failure to do so will impact the quality of results derived from a time analysis as well as a risk analysis. This number should not exceed more than 5%.

Logic Density™

This metric calculates the average number of logic links per activity. An average of less than two indicates that there is logic missing within the schedule. An average greater than four indicates overly complex logic, with a high likelihood of redundant links. Therefore, Logic Density™ should be between two and four.

Critical

While a highly critical schedule is not necessarily a sign of poor scheduling, it can indicate a highly risky schedule. Use this metric as a point of reference.

Hard Constraints

Hard, or two-way, constraints such as 'Must Start On' or 'Must Finish On' should be avoided. Use of such constraints can lead to inaccurate finish dates and a lack of insight into the impact of schedule changes, risk events, and earlier delays.

Negative Float

Negative float is a result of an artificially accelerated or constrained schedule, and is an indication that a schedule is not possible based on the current completion dates.

Insufficient Detail™

Activities with a high duration relative to the life of the project are an indication of poor schedule definition. Detail should be added to the schedule.

Number of Lags

A lag is a duration applied to a logic link often used to represent non-working time between activities such as concrete curing. Lags tend to hide detail within the schedule and cannot be statused like normal activities; therefore, lags should be converted to actual activities with durations.

Number of Leads

A lead, also known as a negative lag, is often used to adjust the successor start or end date relative to the logic link applied. This is a poor practice as it can result in the successor starting before the start of the predecessor.

Merge Hotspot

A merge hotspot is an indication of how complex the start of an activity is. If the number of links is greater than two, there is a high probability that the activity in question will be delayed due to the cumulative effect of all links having to complete on-time in order for the activity to start on time.

+1 512 291 6261 // info@projectacumen.com
www.projectacumen.com

ACUMEN
Proven Project Analytics