Risk Prep

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January 20, 2016

Safe Harbor

- The statements made in this technical presentation are based on our current knowledge of the tools.

- Our statements should not be construed to be an official "Vendor perspective", but are intended to be the sharing of technical and user knowledge gained as we explore new paths and technologies, usually in advance of our clients.

- You need to make your own judgments as to the application of our shared ideas in your own, unique environment.

Products and Services

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- Authorized Oracle Primavera, Asta Powerproject and PMWeb Software Sales
- Experienced Industry Implementation Specialists & Consultants
  - P6, Contract Management, Unifier, Asta Powerproject, and PMWeb
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- Mentored and Supported Project Staffing Resources

MLM PROJECT SERVICES
a subsidiary of DRMcNatty

- Cloud Based, Global Managed Hosting Services
- P6 and Asta Cloud Team Deployments Reduce the Risk of Critical Data Loss
- **Project Status**, Java-free Risk and Collaboration Using P6 Web Services
- Contract Management Interface (CMI) – Extend Your PCM Deployment

Tool Matrix

Business Process	ORACLE PRIMAVERA	Asta Powerproject	PMWeb
Portfolio Management	P6, Unifier		Portfolios
Planning & Budgeting	Unifier	Powerproject	Planning
Estimating		BidCon	Estimating
CPM Scheduling	P6	Powerproject	Scheduling
Cost Management & Reporting	P6, Unifier	Powerproject	Cost Management
Document Management	Unifier		Doc. Management
Change Management	Unifier		Workflows
BIM/Engineering Forms	Unifier	Asta BIM	Engineering Forms
Risk Analysis	Risk Analysis	Asta Risk	Risk Register
Facility Management/Work Orders	Unifier		Facility Management
Claims Support & Analysis	P6	Powerproject	Scheduling Doc. Management

Agenda

Risk Analysis Preparation

- Risk Definitions, Reasons, Methodology
- Workshop Preparation - Process
  - Schedule Review
  - Metric runs
    - Telling metrics for schedule health
    - Corrections/improvements to schedule
  - My typical Metric list

Risk Assessments

Risk Analysis Definitions

- Risk: An uncertain event or condition that, if it occurs, has a positive (opportunity) or negative (threat) effect on a project's objectives. Understanding these risks helps to better evaluate and reduce risk exposure, increase confidence, identify areas of potential acceleration of schedule and help establish reasonable contingency

- Threat – situation or condition that is unfavorable to project
  – Negative circumstance
  – Risk with negative impact

- Opportunity – situation or condition that is favorable to project
  – Positive circumstance
  – Risk with positive impact

Risk Assessments

Risk Analysis Definitions (Con't.)

- Uncertainty – lack of knowledge about an event that reduces

  confidence in conclusions drawn from the data.
  - Cost
  - Time
  - Work effort
  - Quality requirements

Risk Assessments

Risk Analysis Workshop – Why/When do it...

Why

- Identify/Quantify potential events causing delay/cost increase to Project
  - Incomplete design
  - Inadequate site investigation
  - Unrealistic schedule/budget
  - Permit requirements
  - Weather
  - Supplier's/contractor's ability to deliver
  - Public relations
  - Unforeseen conditions...
- Optimize Project Performance, identify Critical activities, create Transparency, predictability, minimize surprises-early warning

Risk Assessments

Risk Analysis Workshop – Why/When do it…

When

- Before entering into a Funding gate
- Before/during Engineering Phase
- Before starting Construction – evaluating competing bids for equipment for example
- As often as it feels necessary to capture/evaluate/mitigate/eliminate risk affecting ultimate project goal – Completing project
  - Some groups review Portfolio quarterly
  - Some review yearly (ex. LRP cycle)
  - Partner review initiated

Many times it is seen as a one time event but in these large scale projects spanning several years, risk assessments should be done frequently, if nothing else, to update the risk register and adjust for risk past and for new risks surfacing.

Risk Assessments

Risk Analysis Preparation - *Process*

- Review of CPM schedule for duration and logic integrity (Schedule Quality)
  - Use of Acumen Fuse for identifying issues
  - Schedule quality key to driving valuable Risk outcomes
  - Gameplan on addressing issues
    - Modify existing file
    - Start over with Risk file?

Without a good schedule, expecting a good risk assessment and outcome are wishful thinking

Risk Assessment Preparation

Schedule Review

- Develop checklist of key areas of focus for quality
- Review key metrics for validating schedule (will expand over next few slides)
  - Lag (negative/positive)
  - Open ends
  - Out of sequence updates (broken logic)
  - Critical ratio
  - Constraints
  - Calendar count
  - Float
- Schedule Cleanse (Acumen Fuse tool) options/do's-don'ts

Risk Assessment Prep

Risk Model Metrics

- Minimal lags/leads (+/-)

  - Best if there are none

  - Lags are fixed duration

  - When applying duration uncertainty (min/ml/max), tool cannot apply uncertainty to lags

  - If no way around a lag, best to convert a lag duration to activity

  - Lags on critical path or between activities with different calendars exaggerate problem

Risk Assessment Prep

Risk Model Metrics

- Relationships
  - Ideal to have only finish to start relationships
  - Open ends - Best if there are none
  - Open ended activities could be critical or near critical and impacting project completion but not impactful when left open
  - Ideally, one start and one finish. If not, possible to have multiple ends. Special care to model each ending separately. Shorter paths will not show as critical
  - Start-to-finish links (reverse logic)
  - External links (to other projects not in model)

Risk Assessment Prep

Risk Model Metrics

- Tasks
  - Self-explanatory descriptions and not reliant on summary level descriptions (WBS or Coding)
  - Summary Level titles should be avoided
  - Calendars – with some risk tools, having many calendars can be problematic
  - Some circles prefer smaller numbers of tasks to model (many believe the risks become diluted if applied to many activities) – Easier to manage model with fewer activities
  - Seen several groups create separate files for risking (management/owner schedule)
  - Links to/from summary tasks

Risk Assessment Prep

Risk Model Metrics

- Critical
  - Watch for Critical ratio (critical to non-critical count)
    - Too many critical could be indicator of redundant logic
    - Too few could indicate high # of open ends
  - Don't ignore the non-critical, could be near and be a swing factor
  - Does the critical list make sense
    - Project where the rain gutters were on critical path for a compressor shelter – probably not critical to start-up
    - Close-out documents

Risk Assessment Prep

Risk Model Metrics

- Constraints
  - Hard constraints defeat logic purpose and may drive more critical than realistic
  - Comment in Notes tab those critical dates
    - Option – add a duplicate activity not in logic string to compare changes of removing constraint
  - Change constraint to Soft for Risk purposes

Risk Assessment Prep

Risk Model Metrics

- Calendar count
  - In PRA, mixing of multiple calendars can affect duration calculations
  - If multiple schedulers have worked file, opportunity to have several equal calendars (slightly different names), especially if imported file from another database
  - Multiple calendars could be something simple as having different holidays or no holidays identified

Risk Assessment Prep

Risk Model Metrics

- Float
  - Watch for excessive float, large number-sometimes lack of logic
  - Large float activities typically pose low risk exposure to project
  - Low float activities could become critical with little warning
  - Real float paths are good candidates for adding concurrent work for acceleration

Risk Assessment Tool

Risk Model Metrics - tool

- Schedule Cleanse (Acumen) – eliminate the below characteristics (any or all-user choice)
  - Redundant Logic
  - Hard constraints
  - Soft Constraints
  - Remaining Leads/Lags
  - Links on summaries
- Best to do in phases and not all at once
  - Step changes
  - Save scenarios so you can go back if not satisfied with results
- Identifies each and lets you modify all or individually, user choice

Risk Assessment Prep Tool

Risk Model Cleanse - Acumen

List of hard constraints

Available categories to modify

Risk Assessment Prep Tool

Risk Model Diagnostics – Acumen Fuse – My typical metrics

Timeline

Metrics

Risk Assessment Prep Tool

Risk Model Diagnostics – Acumen Fuse – My typical metrics

- Normal – count of activities (duration greater than 0)
- Milestones – count of milestones (looking at ratio normal/milestones)
- Average float – average float across entire schedule model
- Critical <=20 – float value less than or equal 20, helps to gather info on the near critical activities
- Missing Pred/Succ – Open ended activities
- FS Predecessors – should be majority of schedule
- SF Predecessors – should be none, issues when risking (successor happens before predecessor)
- Negative/Positive Lag – hidden detail (lack of tasks)

Risk Assessment Prep Tool

Risk Model Diagnostics – Acumen Fuse – My typical metrics

- Hard/soft constraints – Must start/finish, force critical logic

- Resources – simple check to see if any activities (normal and/or summary) have resources applied

- Invalid dates – planned work in the past or actual work in future. Easier in MSProject but could indicate lack of F9 progressing

- Critical <=0 – float value less than or equal 0, this helps some schedules where critical has been redefined by user

- Missing WBS – activities not built using WBS, hopefully codes are being used to organize. Helps to understand when I can't use WBS to organize

Risk Assessment Prep Tool

Risk Model Diagnostics – Acumen Fuse – My typical metrics

- Calendar count – understand how many calendars may be included in schedule

- >30d float – activities seemingly off the critical path, they missing logic?

- >30d lag – long duration lag, not good practice, especially for a risk model, suggest changing to an activity

- Excessive lag – identifying lag that is equal to or greater than the duration of the predecessor activity (hidden activity)

Risk Assessment Prep Tool

Risk Model efforts

- Tools for running reports on the discussed issues
  - Acumen Fuse
    - Diagnostics tab
  - Primavera P6
    - Claim Digger (P6 Professional)
    - Check Schedule (P6 EPPM)
    - F9 Report
  - Schedule Analyzer Enterprise
    - Baseline Checker

Risk Assessment Preparation

Risk Assessment Preparation Conclusion

Whatever changes are made to the model prior to rolling the dice, will help drive the results/outcome. Many times, these Risk results are major contributors in decision-making for proceeding through the project gate or for management providing additional funding for continuing. These changes need to be well thought out and documented. Management does not make decisions based on "gut-feel" and wants as much quantifiable information to aid in the right business decision, even if that answer says call time-out to reevaluate or STOP.

Ultimately, the best time to know these guidelines is before the schedule is ever built thereby eliminating most of this effort. Cleaning up a schedule worthy of using for Risking purposes can require a lot of effort that would seem easier to just have done right the first time. Many of these expectations shared are best practice which takes us down another path of discussing the very basics of this discipline which is another discussion for another day.
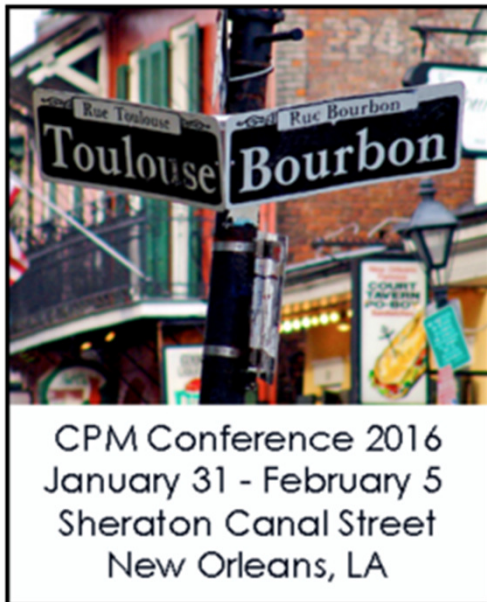
Questions & Comments

- All questions are gathered into a master sheet, answered and distributed to all registrants as well as posted on our website.

- Answers are based on our own experiences using the various software products covered in this webinar.

Thank you for participating

Contact - contact@drmcnatty.com

Upcoming Events

We highly recommend the following technical education and relationship events

CPM Conference 2016
January 31 - February 5
Sheraton Canal Street
New Orleans, LA

http://www.constructioncpm.com/

WESTERN WINTER WORKSHOP
Hyatt Regency, Indian Wells, CA (USA)
March 3-6, 2016

http://www.westernwinterworkshop.com/

AACE 3rd Annual
Northeast Total
Cost Management
Symposium

March 24 - March 25, 2016
DoubleTree Hotel -
Valley Forge, PA

aace-northeast-total-cost-management-symposium/

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