



PROJECT MANAGEMENT
CENTER FOR EXCELLENCE
A.J. CLARK SCHOOL OF ENGINEERING
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WHAT IS LURKING IN YOUR PROJECT FORECASTS?

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Typical Project Forecast

Characteristics

- » Developed by a small group of individuals (semi-collaborative)
- » Input into a project scheduling tool
- » All (or most) activities have links
- » Basic, manual scheduling checks are performed – missing logic, float sanity-check



Typical Project Forecast

What's Missing

- » High-level consensus, but the details are not fully understood
- » Finish date is understood, but intermediate milestones may be sketchy
- » Does not change properly when statused
- » Minimal consideration of risk



Risk...the 4 Letter Word

What usually happens

- » Risks are discussed prior to the project start
- » Some risks and mitigation work their way into the baseline forecast
- » Others sit quietly on the Risk Register as “tracked risks”
- » “Surprises” are prevalent during project execution



Why Companies Do Not Assess Risk

Challenges

- » Traditional Risk tools are complicated and the outputs are difficult to explain
- » In those tools, data input is tedious, often neglected, and hence, the results are inaccurate
- » Risk assessment is viewed as a process not a cultural mindset
- » They are willing to fall behind competitors



Incorporating Risk Successfully

For an Accurate Forecast

- » Discuss Risk. Identify key events. Assess both probability and impact.
- » Eliminate “Black Swan” risks that are fun to discuss are ridiculously unlikely to occur
- » Link Risks to the project schedule
- » Observe the shock when the true project threats are uncovered!



Precursor to Risk!

A high quality schedule is essential

- » A quality forecast must include Risk, but also must be built on the foundation of a high quality plan
- » Plans are often fragmented, not fully linked, and overly constrained against Risk and variances
- » A schedule must be fully linked, flow smoothly, and appropriately “ripple” when work is late or risky
- » You cannot have a quality risk model built upon a poor quality plan- it just doesn’t work

Risk Model Assembly Process



Risk Register

- » Import a Risk Register or create one in Acumen to allow you to track and manage discrete risks

Workbook1 - Acumen Fuse

S1 // Projects

S2 // Diagnostics

S2 // Logic

S2 // Benchmarking

S3 // Risk

S4 // Acceleration

S5 // Dashboard

Forensics

Metrics

Fields

Left Panel Views

Right Panel

Add Risk Event

Delete Risk Event

Run Risk Analysis

Build Risk Adjusted Schedule Analysis

Create Scenario

Uncertainty Template

Risk Matrix Template

Publish

Import/Export Risk Register

Publish

Initial Plan

Custom Fields

Owner

Risk		Current				Mitigation				Mitigated				
ID	T...	Name	Probability	Schedule	Cost	S...	Enabled	Description	Dura...	Cost	Probability	Schedule	Cost	Score
Owner: DP														
R3	T	Risk of insufficient in cou...	Very High	Low	Very High	25			0d	\$0	Very High	Low	Very High	25
R37	T	Risk of major dredging e...	Very High	Very High	High	25		Contract backu	10d	\$1,000,000	Medium	Medium	Low	9
R1	T	Risk of delay post transp...	Very High	Very High	Very High	25		Ensure no carry	0d	\$5,000,000	Medium	Very High	Very High	15
R36	T	Risks of theft of materials...	High	Very High	High	20			0d	\$0	High	Very High	High	20
R10	T	Risk of delay due to heav...	Low	Very High	Very High	10			0d	\$0	Low	Very High	Very High	10
Owner: IP														
R9	T	Risk of delay due to fab...	Very High	Very High	High	25		Procure yard ex	0d	\$500,000	Very Low	Very High	High	5
R38	T	Risk of change in law im...	High	Very High	Very High	20		Liaison with loc	30d	\$0	Medium	Very High	Very High	15
R6	T	Risk of poor quality mate...	Medium	Medium	Low	9			0d	\$0	Medium	Medium	Low	9
R8	T	Risk of damage to key e...	Low	Low	Medium	6			0d	\$0	Low	Low	Medium	6
Owner: JW														
R42	T	Risk of inability to hire cr...	Very High	High	Very High	25			0d	\$0	Very High	High	Very High	25
R41	T	Risk of delay in approval...	High	Low	Very High	20			0d	\$0	High	Low	Very High	20
R2	T	Risk of customs delays	High	High	High	16			0d	\$0	High	High	High	16
R5	T	Risk of pirates during FP...	High	High	Medium	16			0d	\$0	High	High	Medium	16
R44	T	Risk of Governmental ag...	Very High	Medium	Low	15			0d	\$0	Very High	Medium	Low	15
R45	T	Risk of delays in releasin...	Low	Very High	High	10			0d	\$0	Low	Very High	High	10

Drag a column header here to group by that column

Link		Current		Mitigation		Mitigated		
R...	Activity	Event	Duration	Cost	Duration	Cost	Duration	Cost
X	0580: Site Establishment	Risk of lack of labor availability of...	3d	\$2,973,907	0d	\$0	3d	\$2,973,907
X	0570: First Wave	Risk of lack of labor availability of...	4d	\$6,100,510	0d	\$0	4d	\$6,100,510
X	0560: Foundation	Risk of lack of labor availability of...	2d	\$1,677,457	0d	\$0	2d	\$1,677,457

Ready

V3.9.0.18 v64

Simplified Uncertainty Tracking

- » Input duration uncertainties with ease using Acumen's uncertainty sliders and template
- » Have more meaningful team contributions without getting bogged down in the numbers



Risk Analysis (Exposure)

Risk Exposure

1 P-Dates

- » “We are 0% confident we will finish on, or before, Dec 15, 2020.”

2 Contingency

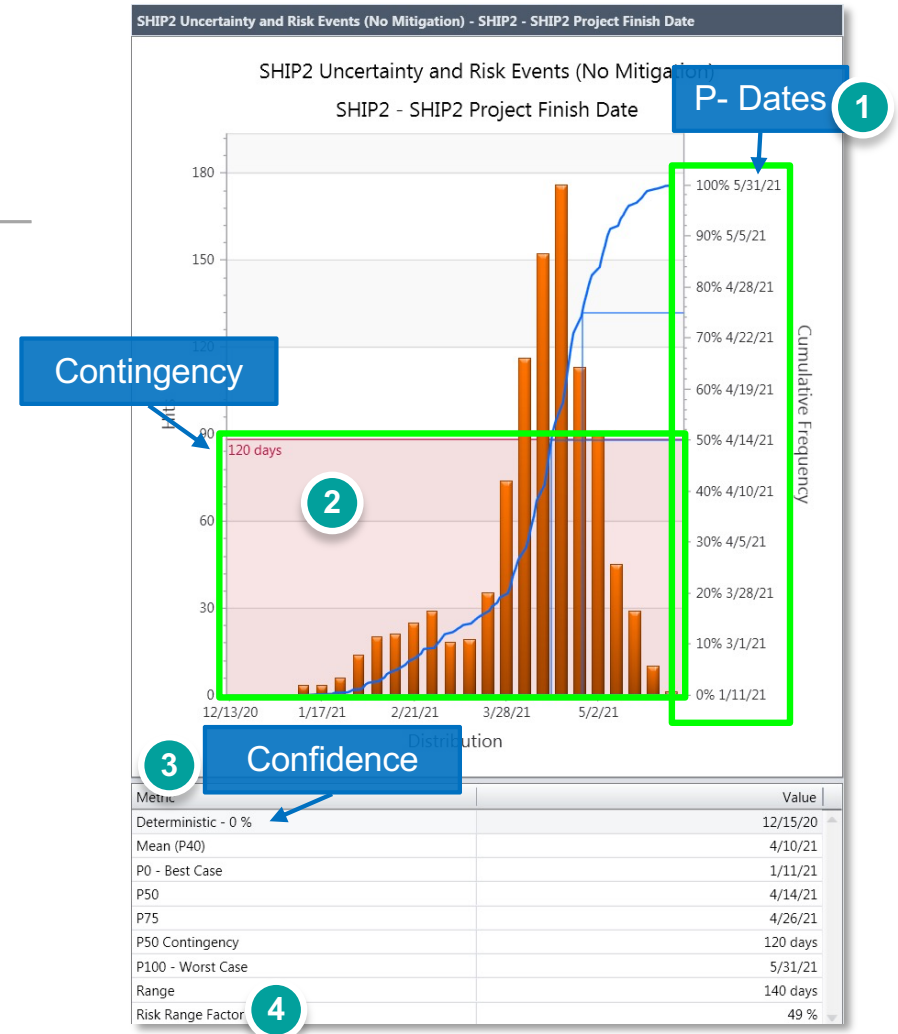
- » “We need 120 more days to finish by April 14, 2021.”

3 Confidence Level

- » “We have a 0% chance of hitting the original schedule date of Dec 15, 2020.”

4 Risk Range Factor

- » Risk Exposure Quantification
- » $(P100 - P0)/\text{Remaining Duration}$



Risk Drivers

- » Identify the risks that are most likely to have the greatest impact on your project
- » Identify which activities will most likely be impacted
- » Provides a targeted approach to apply mitigation strategies





Outcomes of a Risk Assessment

There are options

- » Do nothing- this is OK if the risks are not significant or if technical achievement is far more important than schedule and cost performance
- » Hope- not always a viable strategy
- » Active Risk mitigation and frequent risk review/update
- » Project acceleration – identify the non-risky areas that can be accelerated prior to Risk delays

Questions?

What is Lurking in your Project Forecasts?