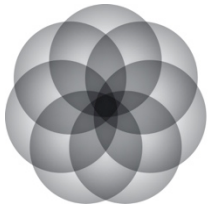

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Proven Project Analytics

Dr. Dan Patterson PMP, Acumen CEO

Identifying True Cost and Schedule Risk with Acumen Risk™

// Agenda

- Introduction to risk analysis
- Overview of Acumen Risk
- How is it different?
- Worked example
  - Uncertainty modeling V Risk Events
  - Monte Carlo Analysis
  - Reporting & reducing risk exposure
  - Creating Risk-adjusted schedules
  - Integrated cost/schedule risk analysis
- Q&A

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Proven Project Analytics

- Project Management Software
- Focus on analytics
- Core Concepts
  - Project success requires a sound plan
  - Forecasting requires risk consideration
- Recognition
  - 2012 Planning Innovation of the Year
  - 2012 Inc.500 Award

Inc. 500

Realistic Scheduling

- // **S1** The Base
- // **S2** Critiqued
- // **S3** Risk-Adjusted
- // **S4** Optimized
- // **S5** Team-Aligned

Product Offerings

- Acumen Platform
- Risk Workshops
- Software Training

// Acumen Software

Summary

Acumen Fuse
Diagnostics

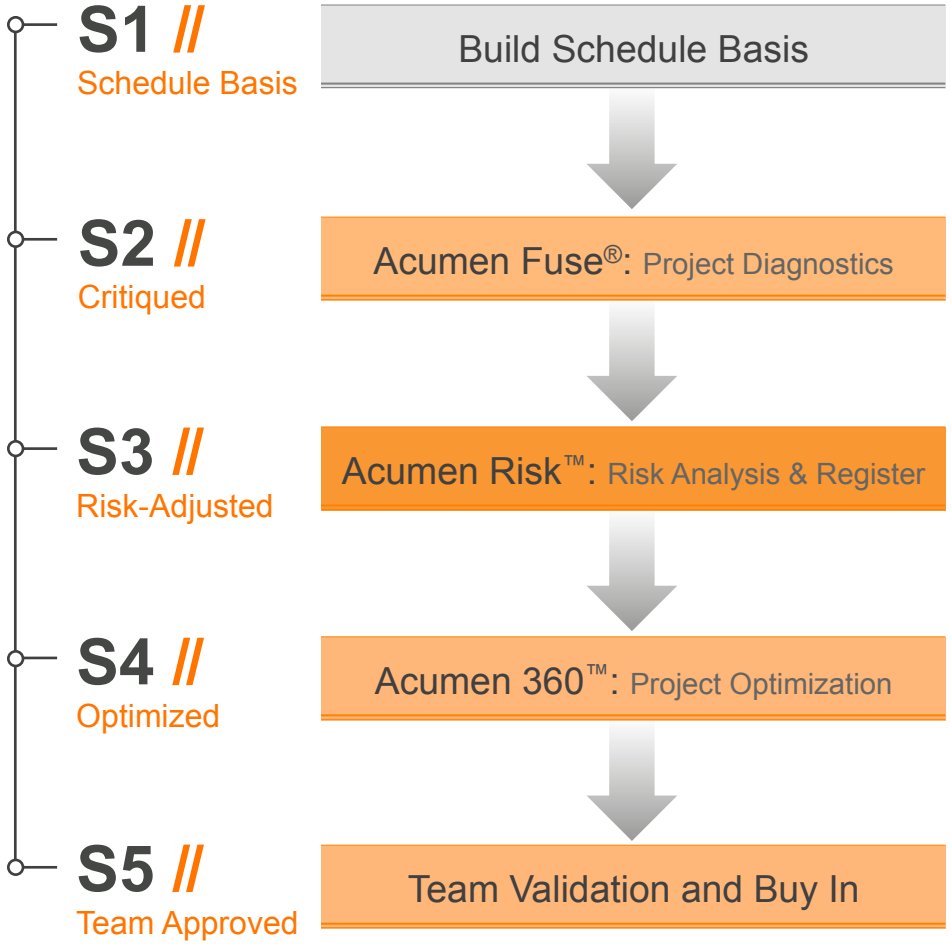
- Improved Schedule Quality

Acumen Risk
Risk Analysis

- Cost/Schedule

Acumen 360
Scenario Generation

- Acceleration/Deceleration



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Introduction to Project Risk Analysis

- Scheduling
  - Science behind forecasting project completion
  - Doesn't account for scope uncertainty, unknowns
- Risk Analysis
  - Gain true insight into schedule achievability
  - Pinpoints risk hotspots that will cause delay
  - Structured approach to **reducing** risk exposure

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// How Does it Work?

- Based on CPM
  - Accounts for variability in the forecast
  - Schedule uncertainty
  - Risk events
  - Cost-impact of time…
- Monte Carlo simulation
  - Essentially a brute force approach
  - Highly prone to schedule logic & inputs

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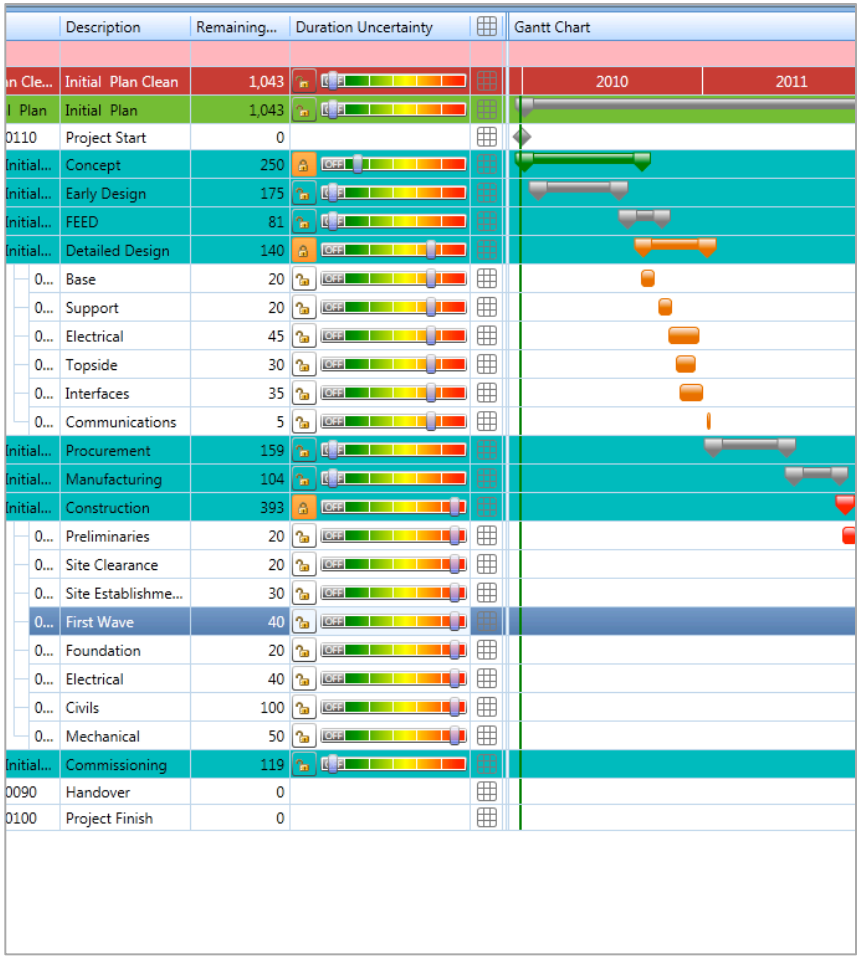
// Acumen Risk™

Risk Reengineered…

- Cost/schedule analysis
- Integrated risk register
- Very fast analysis
- Uncertainty Factor™
- Uses native schedule
- Intuitive reporting
- Risk-adjusted schedules
- Works with MSP & P6

Designed for collaborative project risk workshops



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// Project Risk Register

Tracking Risk Events

- Cost/schedule risks
- Import existing registers
- Captures mitigation
- True schedule integration
- Auto calibrates

Risk			Current				Mitigation
Mapped	ID	Name	Probability	Schedule	Cost	Score	Enabled
☐	R7	Risk of airport not being complete...	Very High	Very High	High	25	☐
☐	R42	Risk of inability to hire craft to mai...	Very High	High	Very High	25	☐
☐	R14	Risk of limited in country infrastru...	Very High	Very High	High	25	☐
☐	R9	Risk of delay due to fab yard cons...	Very High	Very High	High	25	☐
☐	R3	Risk of insufficient in country skille...	Very High	Low	Very High	25	☐
☐	R1	Risk of delay post transportation...	Very High	Very High	Very High	25	☑
☐	R37	Riks of major dredging equipment...	Very High	Very High	High	25	☐
☐	R39	Risk of work stoppage due to cora...	Very High	Medium	High	20	☐
☐	R36	Riks of theft of materials (especiall...	High	Very High	High	20	☑
☐	R38	Risk of change in law impacting c...	High	Very High	Very High	20	☐
☐	R41	Risk of delay in approvals of visas	High	Low	Very High	20	☐
☐	R46	Risk of plane crash with project cr...	High	Very High	Negligible	20	☐
☑	R34	Risk of actual required resources e...	Very High	High	Medium	20	☑
☐	R43	Risk of delays in establishing pion...	High	High	Medium	16	☐
☐	R2	Risk of customs delays	High	High	High	16	☐
☐	R5	Risk of pirates during FPSO sail fro...	High	High	Medium	16	☑
☐	R44	Risk of Governmental agency dire...	Very High	Medium	Low	15	☐
☐	R23	Risk of weather event	High	Medium	Low	12	☑
☐	R21	Risk of insufficient Commissioning...	High	Low	Medium	12	☐
☐	R45	Risk of delays in releasing equipm...	Low	Very High	High	10	☐
☐	R20	Risk of rejection and/or late appro...	Low	Very High	High	10	☐

Drag a column header here to group by that column

	Link		Current		Mitigation	
R...	Activity	Event	Duration	Cost	Duration	Cost
✕	0140: Requirements Defi...	New Event	0d	$0	0d	
✕	0190: Commerical review	New Event	0d	$0	0d	

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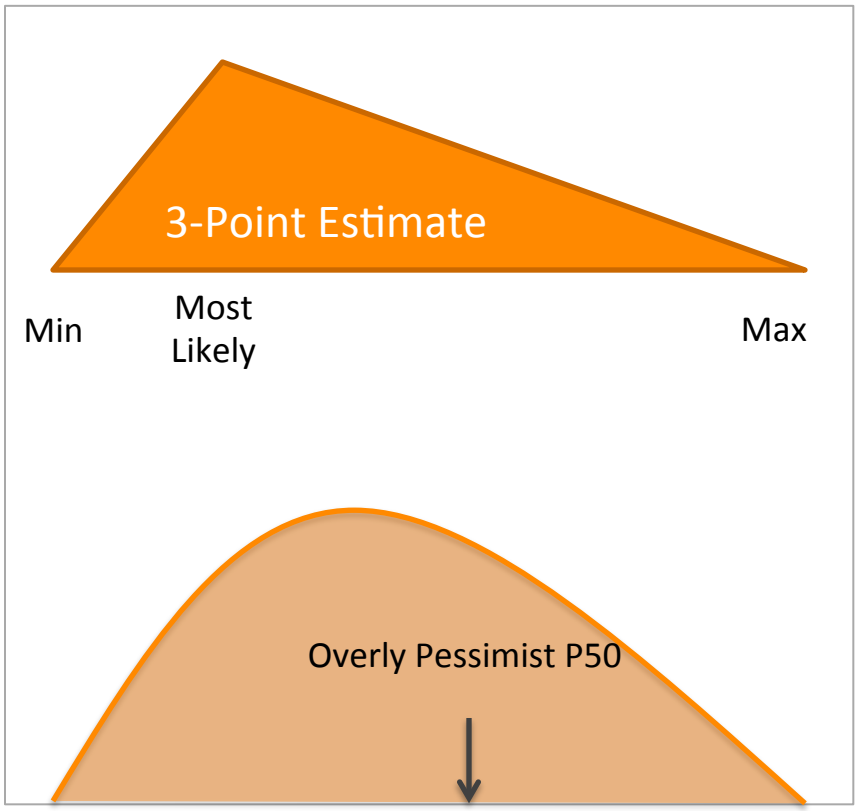
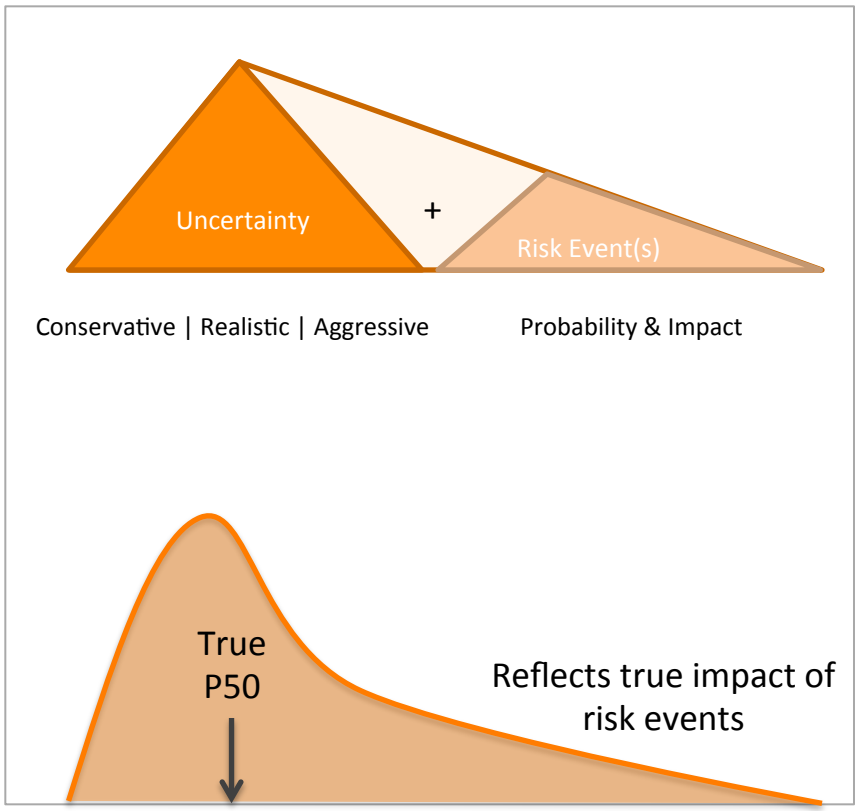
// Modeling Risk

Risk & Uncertainty

Traditional Approach



Acumen Approach



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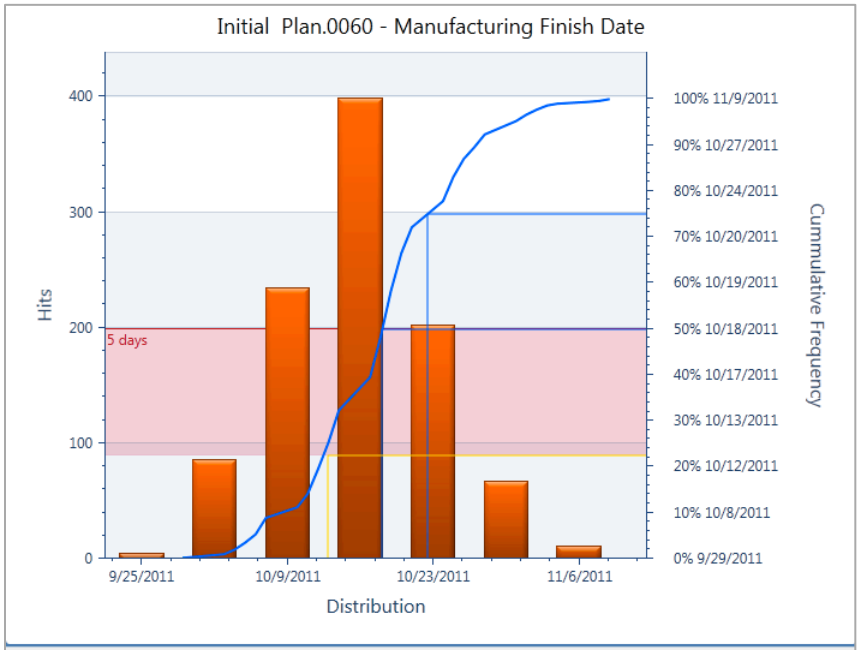
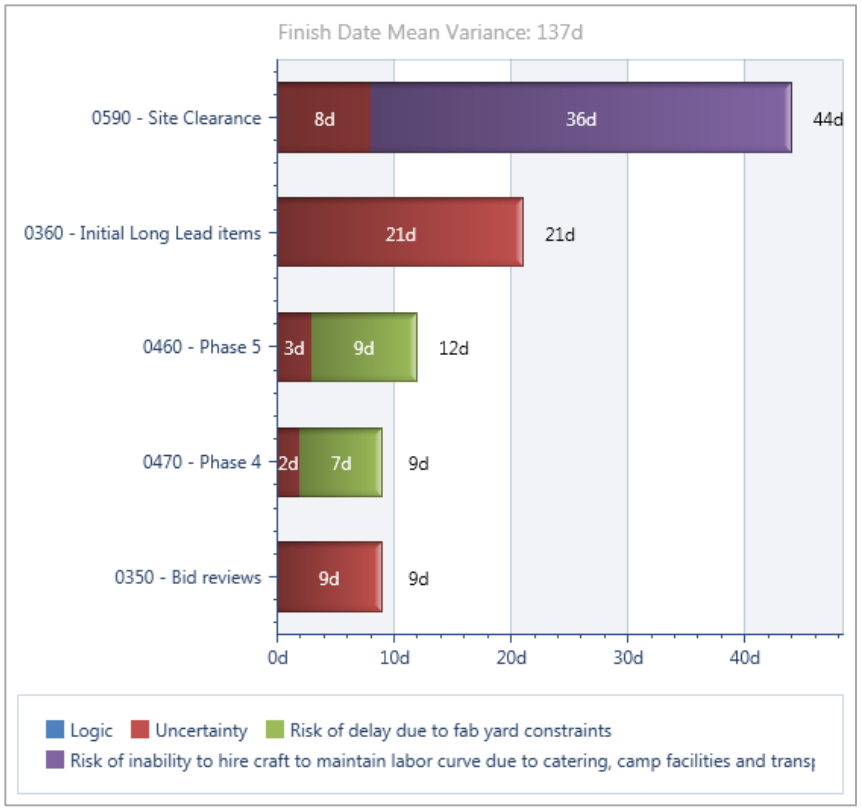
// Risk Reporting

// Risk Exposure



Metric	Value
Deterministic - 22 %	10/13/2011
Mean	10/18/2011
P0 - Best Case	9/29/2011
P50	10/18/2011
P75	10/22/2011

// Risk Contribution Factor™



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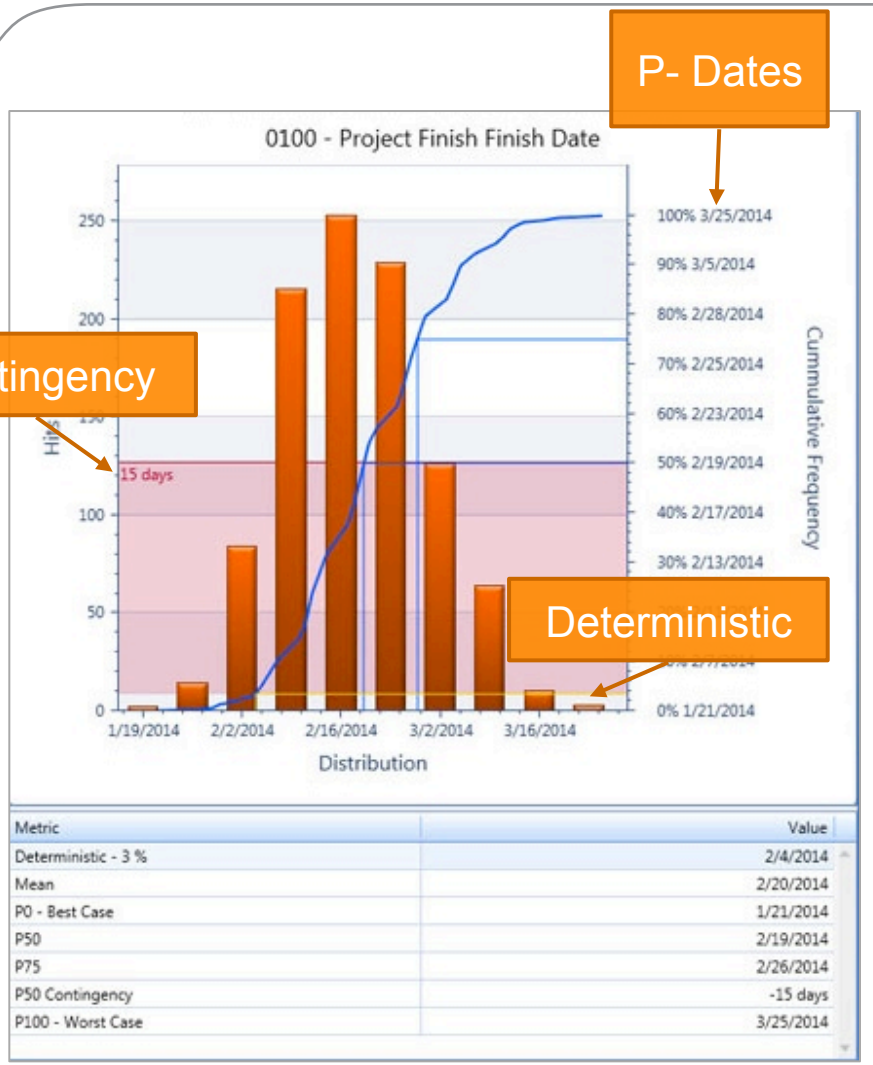
// Risk Exposure

Histogram

- **P-Dates**
  - “I’m 50% confident I will finish on…”
- **Contingency**
  - “How much more/less time do I need to finish by…?”
- **Deterministic Confidence Level**
  - “How realistic is my planned finish date?”



Metric	Value
Deterministic - 3 %	2/4/2014
Mean	2/20/2014
P0 - Best Case	1/21/2014
P50	2/19/2014
P75	2/26/2014
P50 Contingency	-15 days
P100 - Worst Case	3/25/2014

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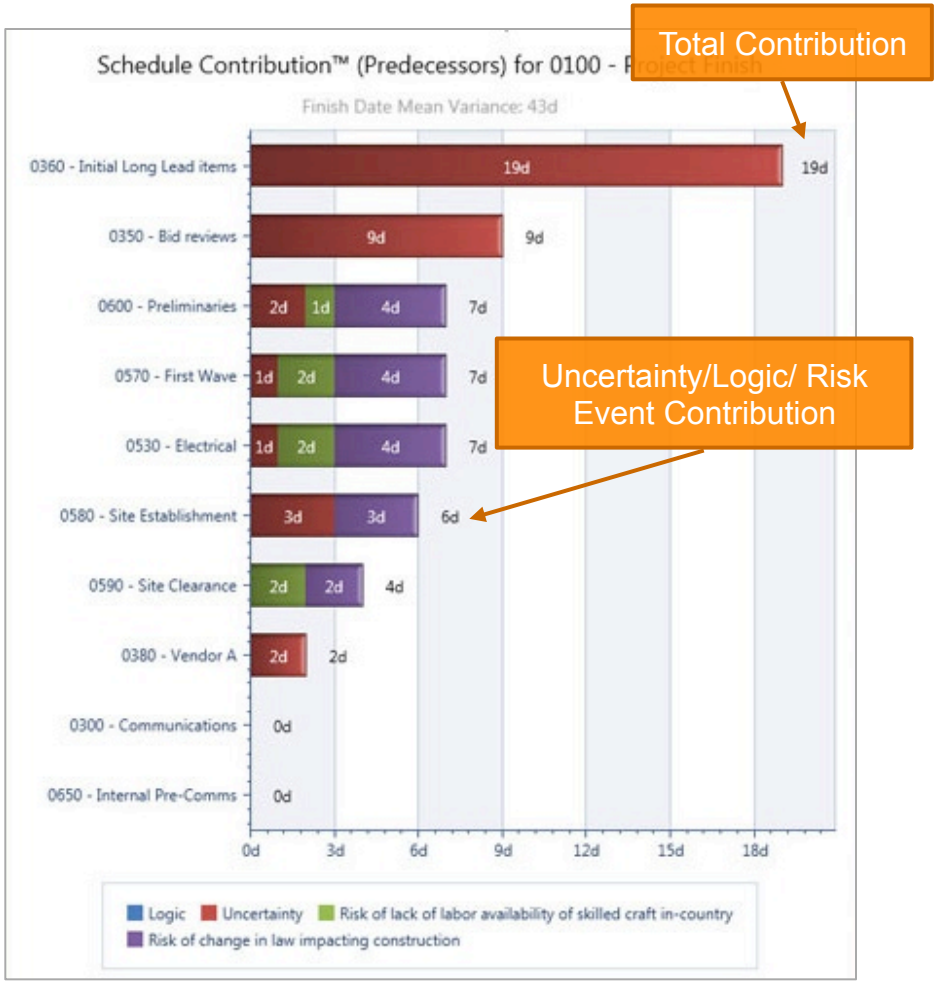
// Risk Drivers

Tornados

- **Risk Drivers:**
  - High-risk activities
  - Most impactful events
- **Contribution Factor™**
  - Uncertainty contribution
  - Logic contribution
  - Risk Event contribution



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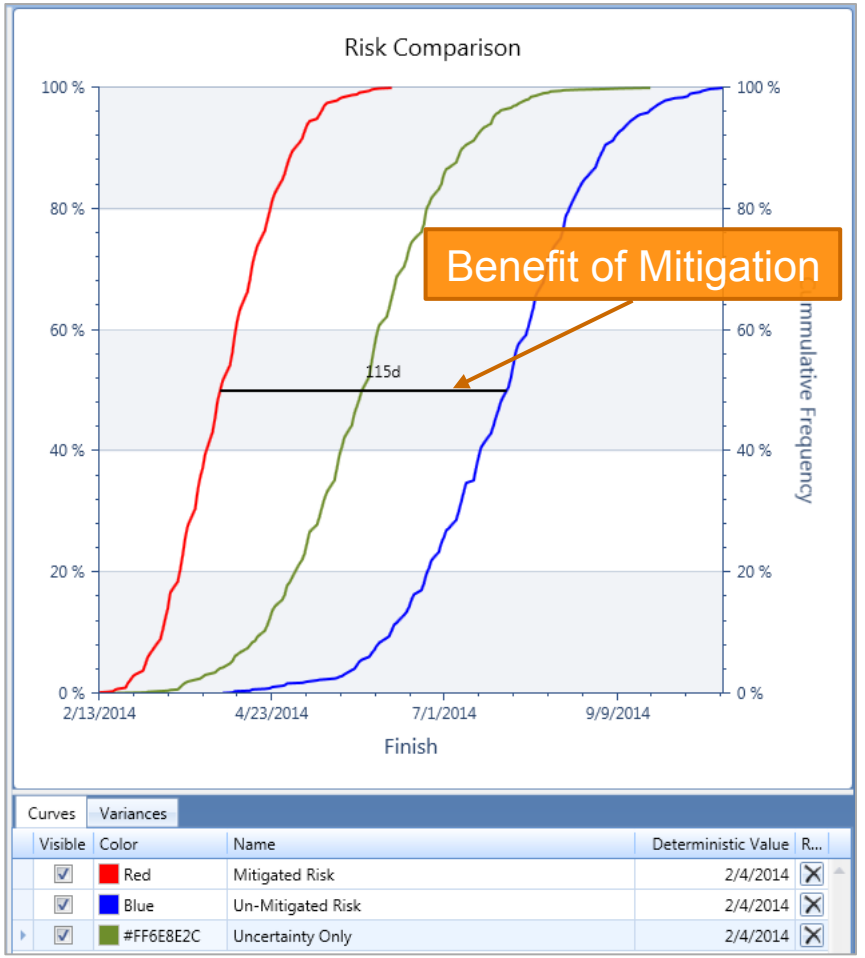
// Risk Comparison

Distribution Curves

- Compare scenarios in a single workbook:
  - Turn on or off risks
  - Benefit of mitigation
  - Uncertainty vs. Risk Events
  - Schedule A vs. Schedule B
  - Impact of schedule delay on cost risk



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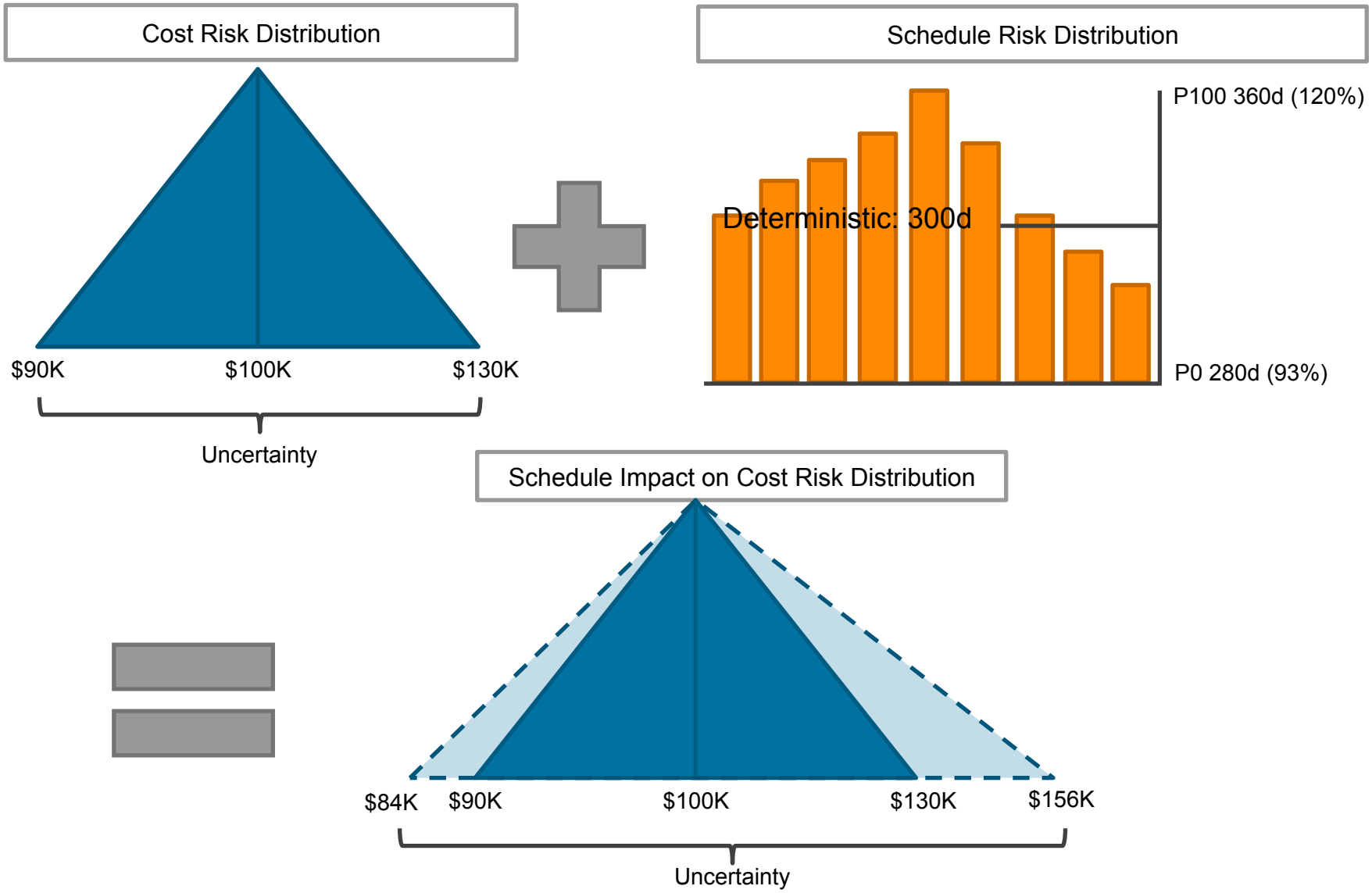
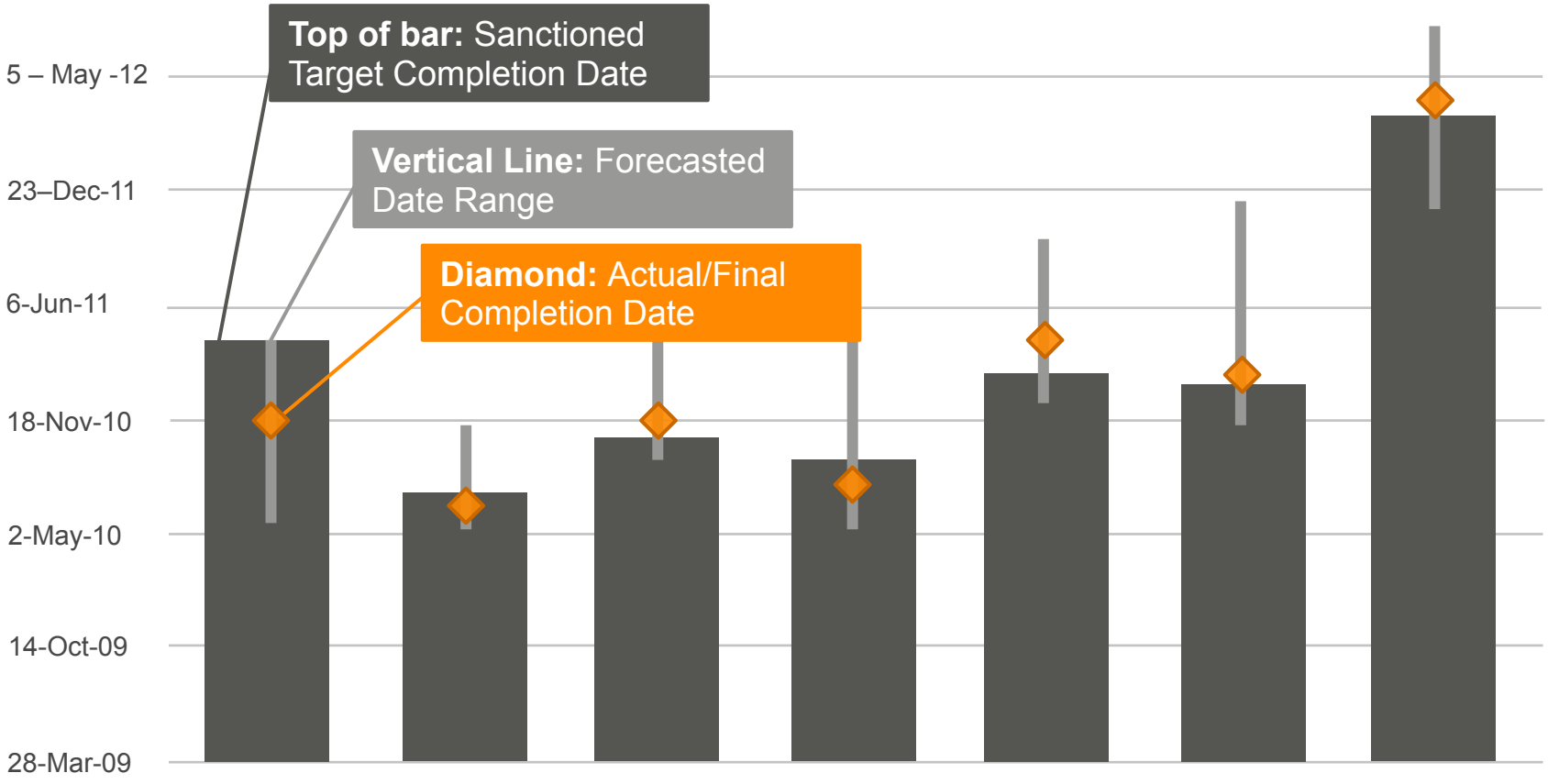
// Schedule Impact on Cost Risk



Acumen Risk™ Demonstration

// Acumen Forecast Accuracy



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// Additional Information

Integration

- **Primavera:**
  - P6 (XER, XML, Web Services/P6 R8)
  - P3
  - Risk Analysis
- **Microsoft:**
  - Project
  - Project Server
  - Excel

Licensing:

- Stand alone / Named user
- Concurrent / Multi user
- Citrix based

Training

- 2 days
  - Risk 101 & Acumen Risk
  - Online and Private on-site

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More information:

White papers: www.projectacumen.com

Software Trial: www.projectacumen.com/trial

Twitter: @projectacumen

Email: dpatterson@projectacumen.com

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