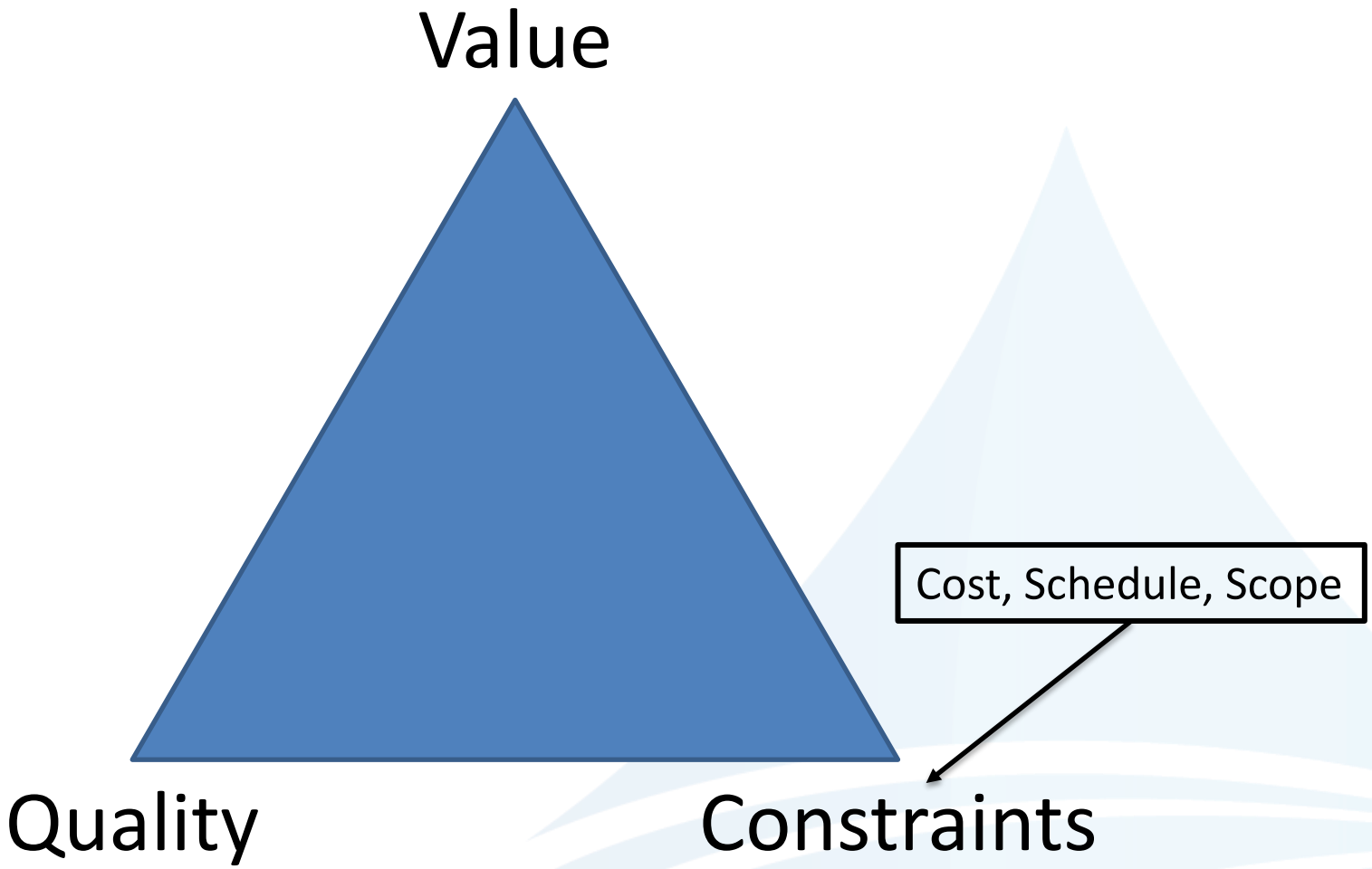
What about Risk? Moving Beyond the Triple Constraint

Daniel Hettema
Andrew Tesnow

The Iron Triangle

The Agile Triangle



From: Jim Harbaugh

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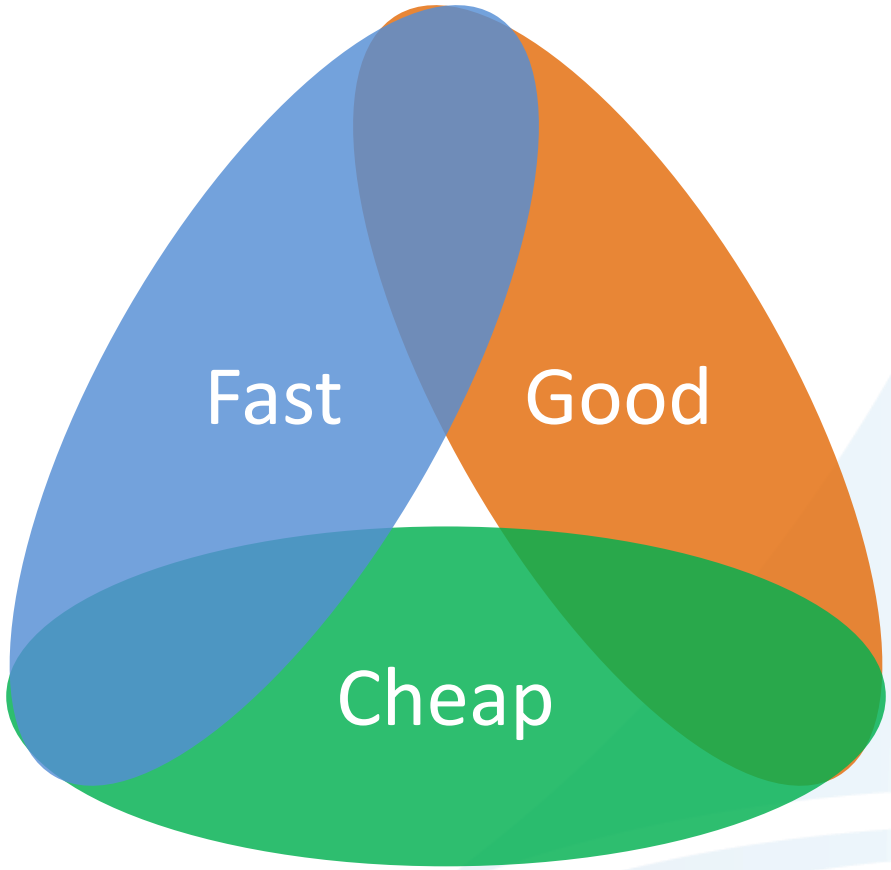
Pick Any Two



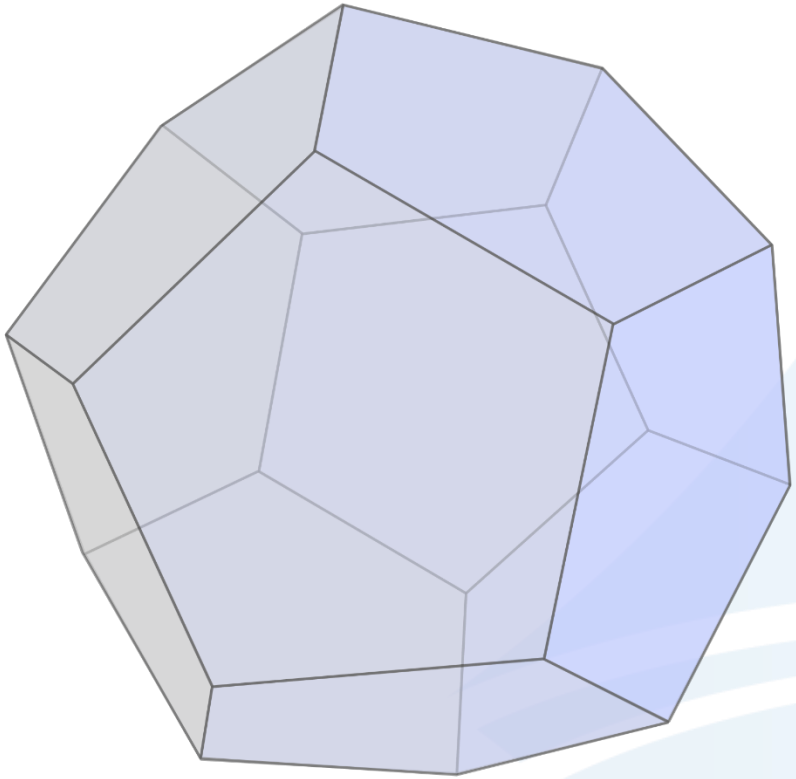
SPEC INNOVATIONS

PMBOK PM Star

Why Stop At Triangles?

The Project Manager's Dodecahedron

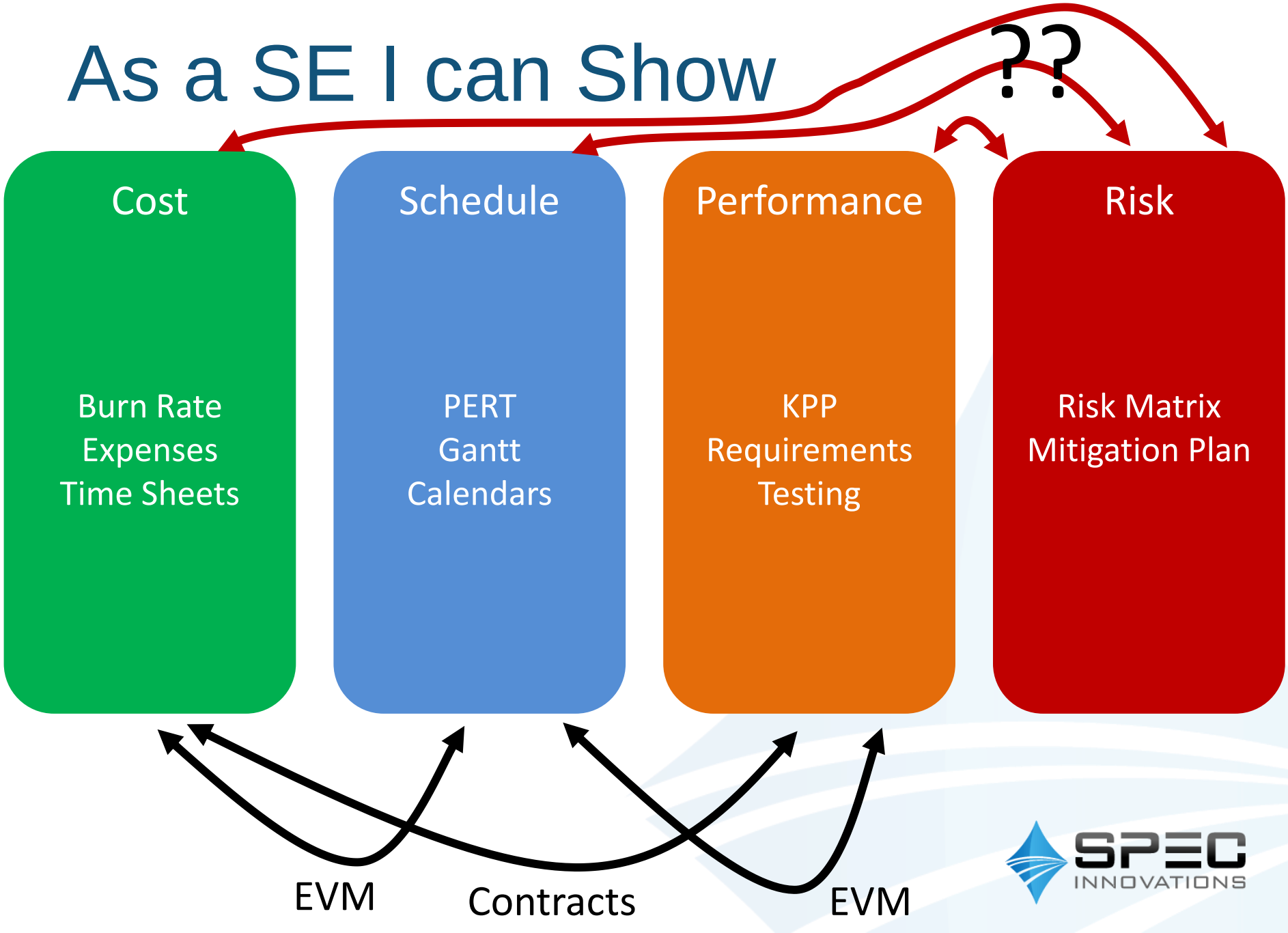
1. Cost
2. Schedule
3. Performance
4. Risk
5. Quality
6. Effort
7. Resources
8. Logic
9. Time
10. Life



11. Objectives
12. Executive Buy-in
13. Opportunities
14. Guidance
15. Insight
16. Accountability
17. IT
18. Bobby, "That Guy"
19. Plans
20. Communication

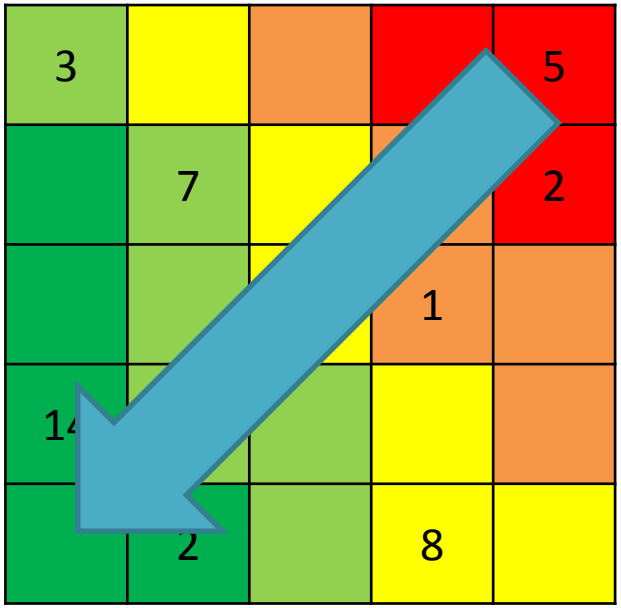
SPEC INNOVATIONS

As a SE I can Show



SPEC INNOVATIONS

What Normally Is Done



High:
#23 Complete system failure if wing falls off
#18 Complete system failure if engine shut down

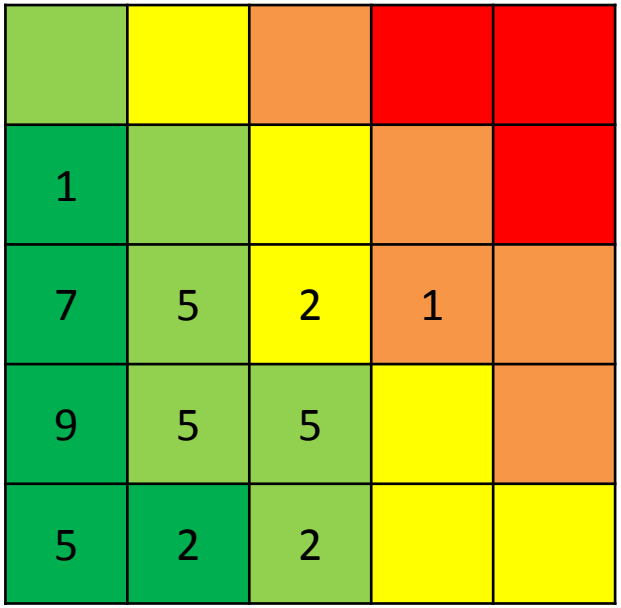
Medium:
#8 Can not land if landing gear stuck
….

Low:
….

Goal: To bring down risk

SPEC INNOVATIONS

What Normally Is Done



Risk Mitigation Plan

Risk	Mitigation
#1	Accept.
#2	Use XYZ component.
#3	Provide a spare.
….	….
….	….

Done, move onto the next thing.

SPEC INNOVATIONS

Unanswered Questions

- Did mitigating this risk cause a new one?
- Why was that mitigation method used?
- What is the impact?
- Was the mitigation method driven by: cost, schedule, performance?
- Do the stakeholders know about this?
- How many times was this analysis done?

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As a SE I Want to See

- Micro/macro changes over time
- Linkages to other risks
- Linkages to what the decision was
- Linkages to cost, schedule, performance
- Linkages to my model

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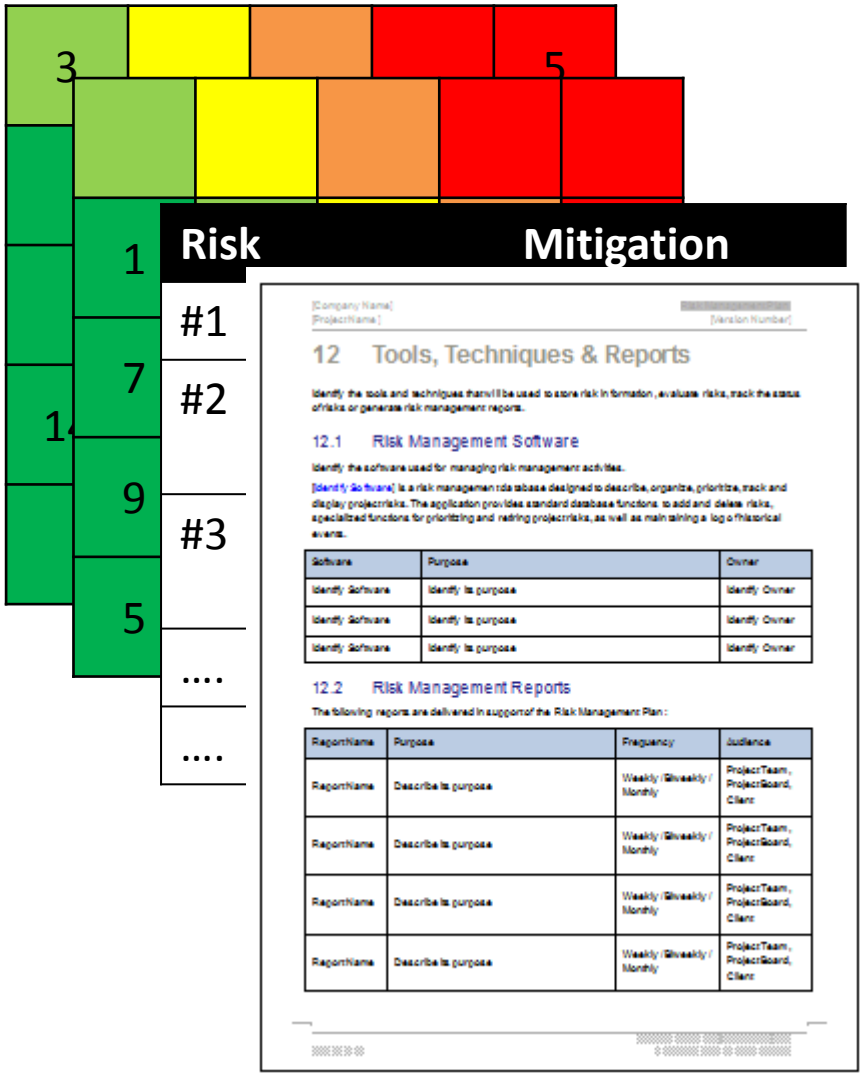
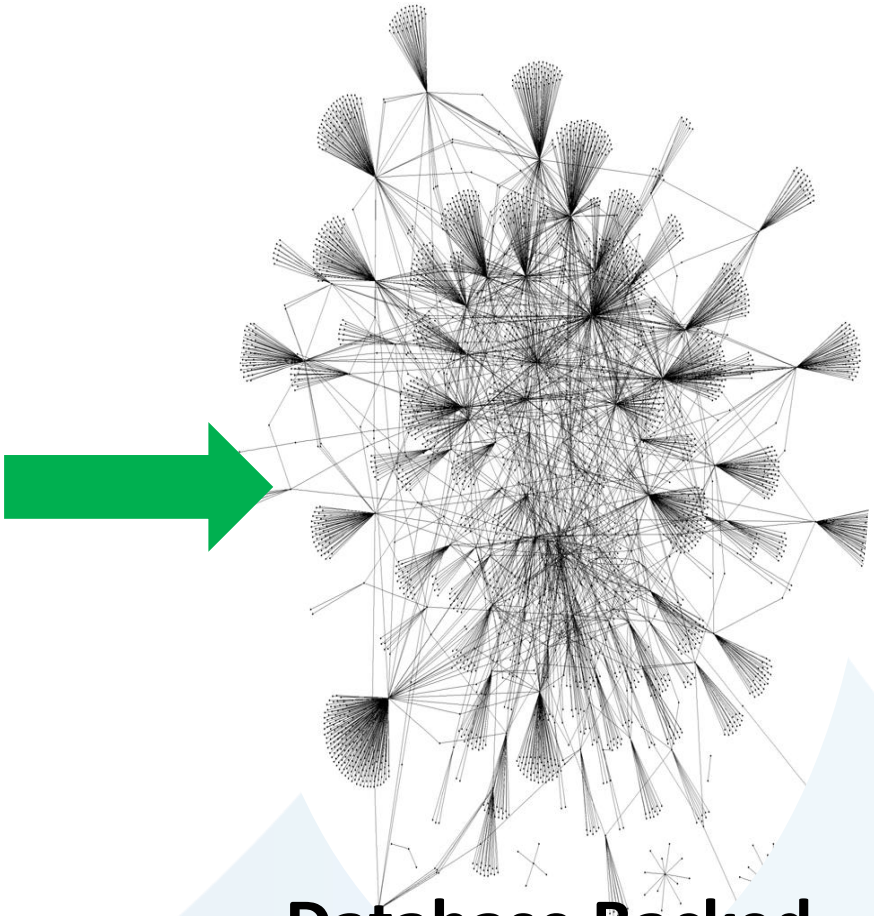
Objective





Database Backed
Model Based SE

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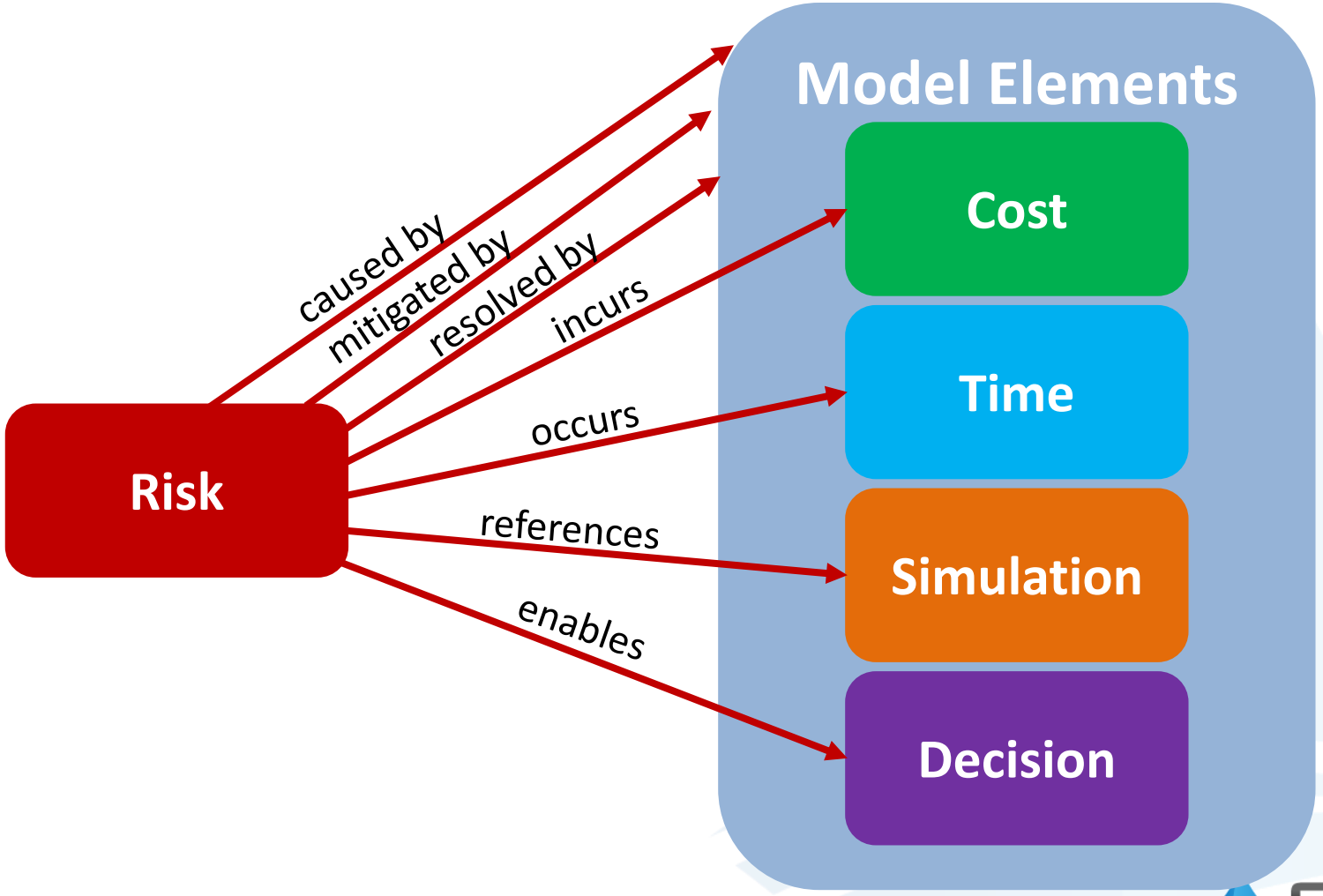
Risk & Model Interaction



SPEC INNOVATIONS

Pulling The Thread

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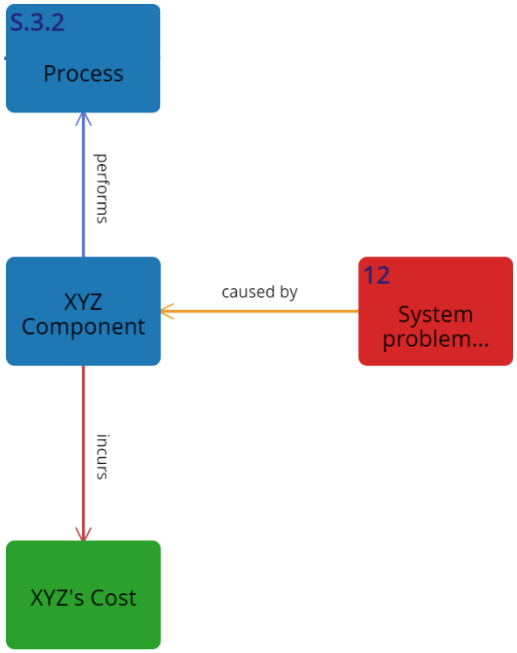
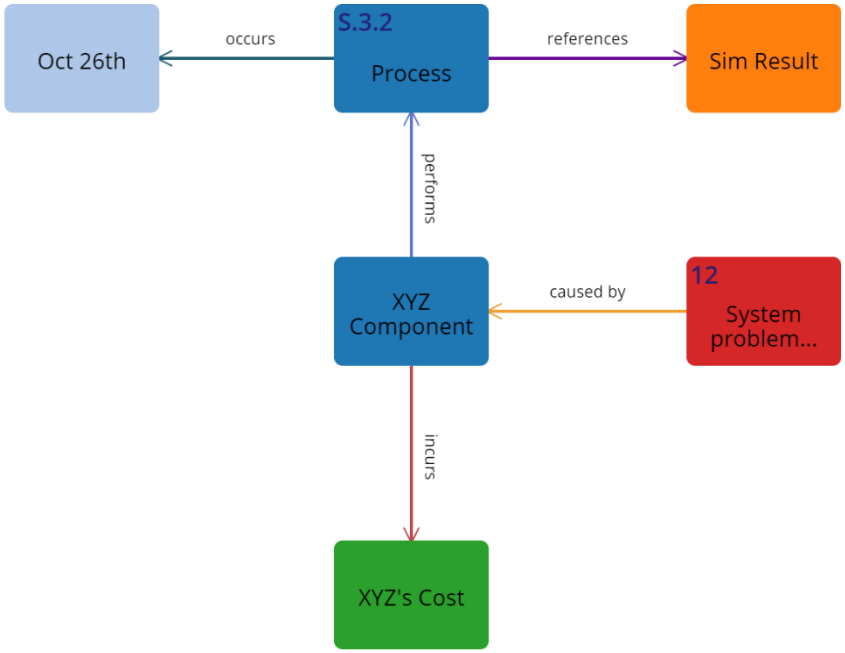


Pulling The Thread



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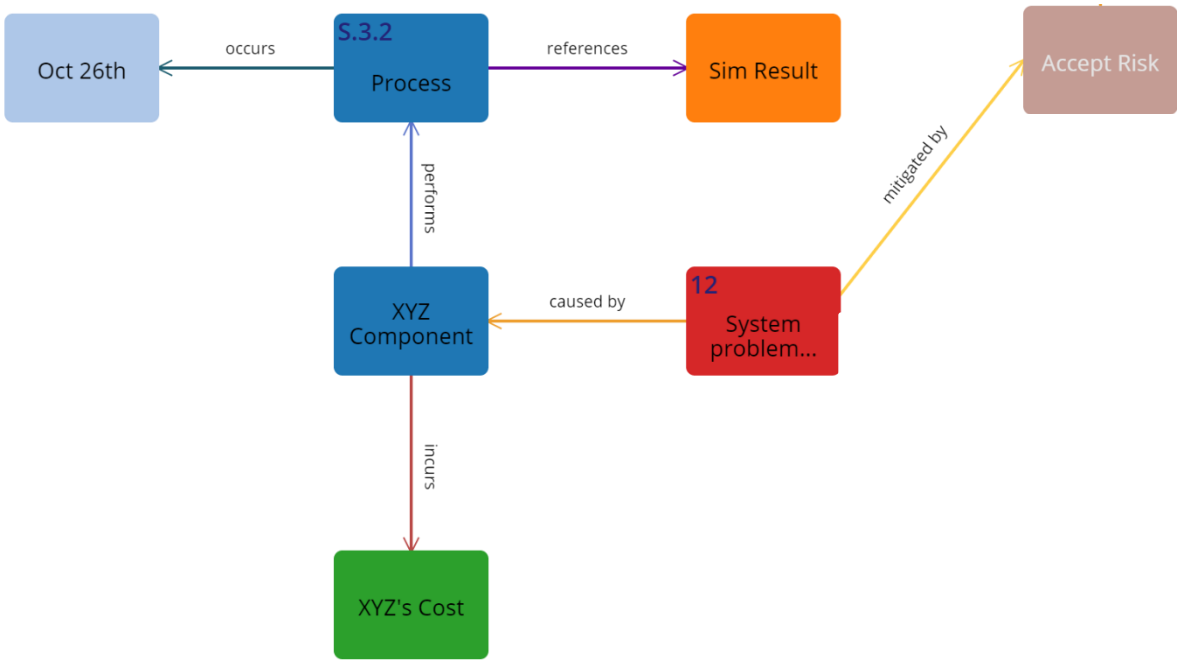

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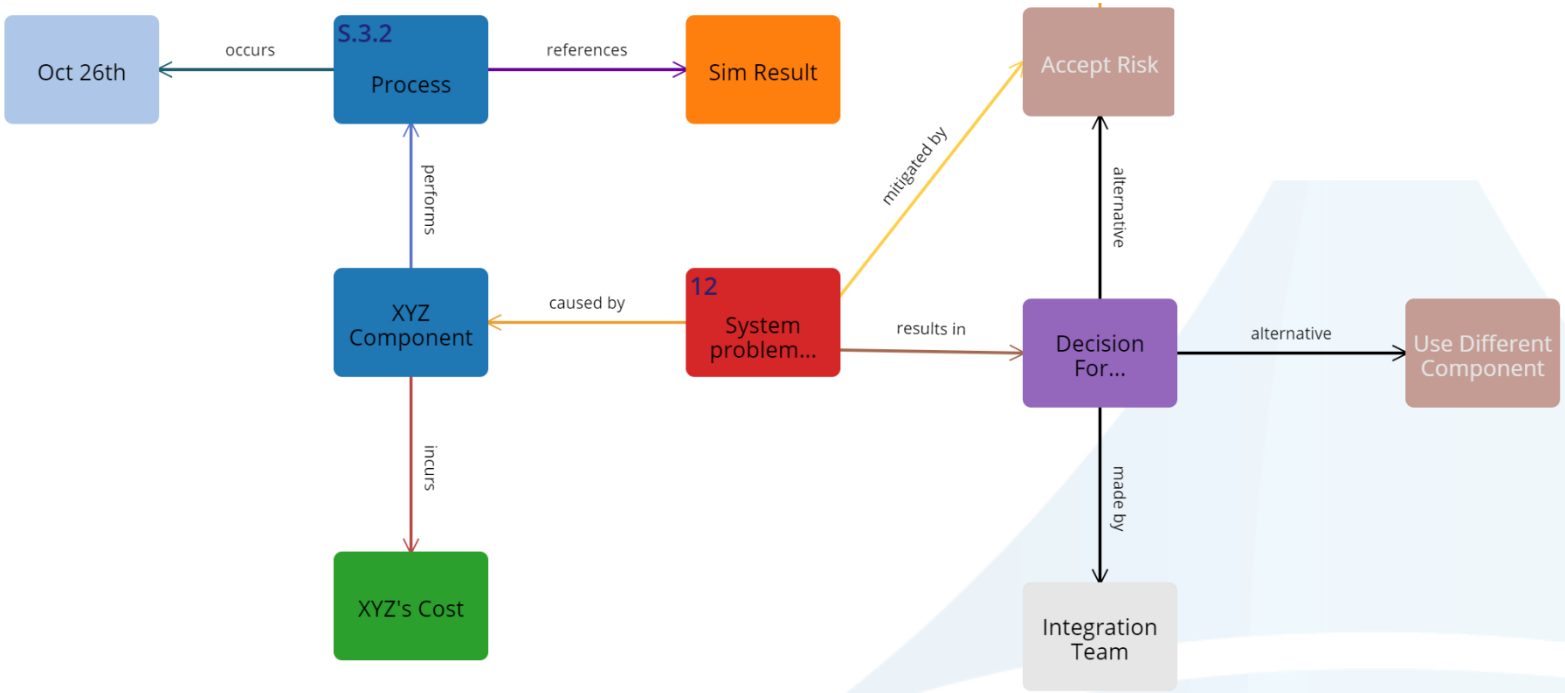

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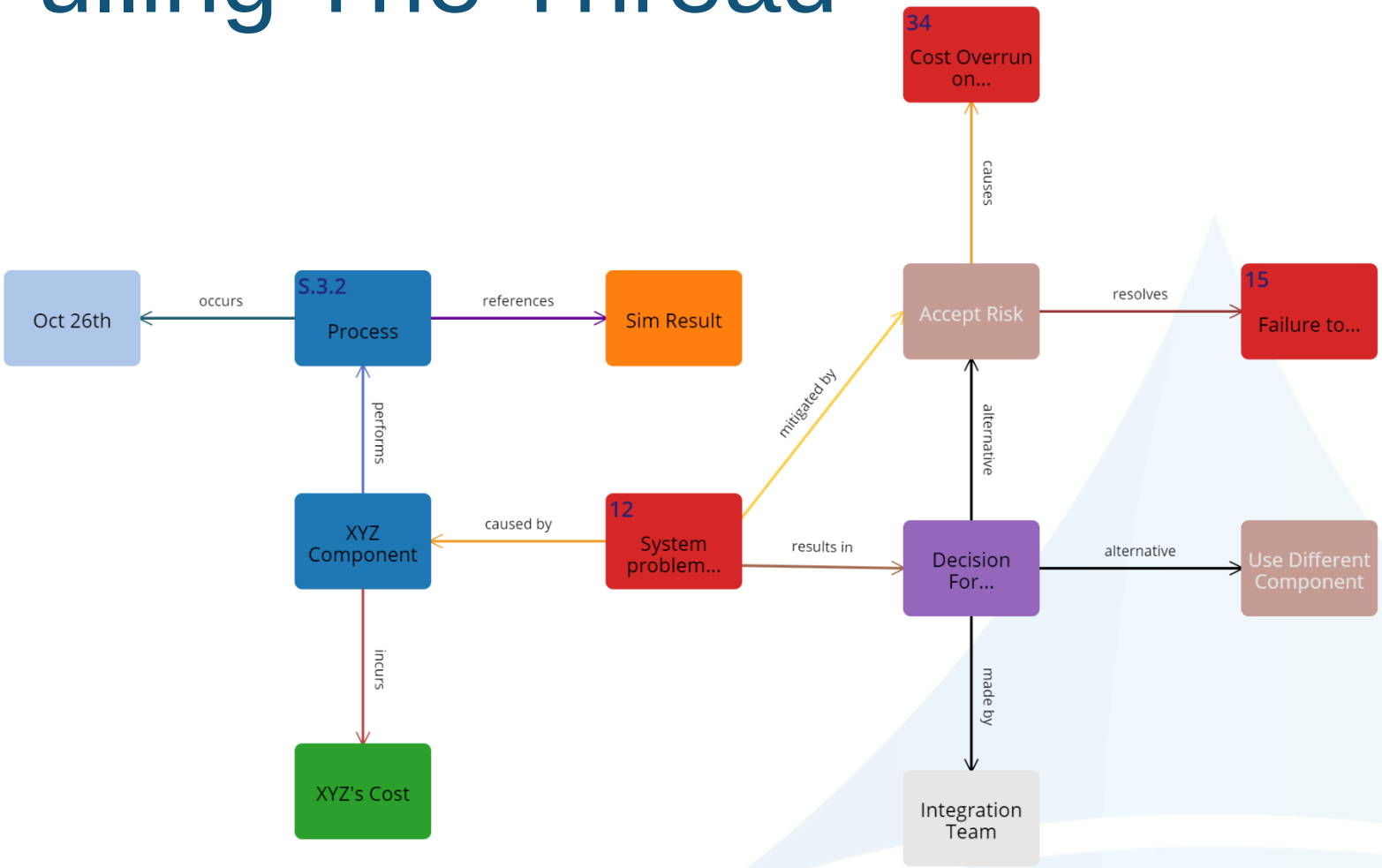
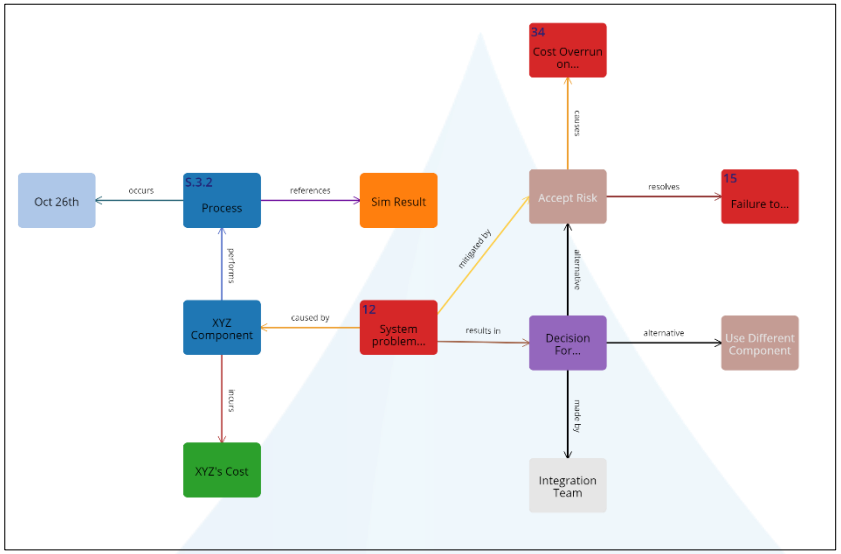


What This Gives Me

Risk	Mitigation
#1	Accept.
#2	Use XYZ component.
#3	Provide a spare.
….	….
….	….



Context & Understanding

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What This Gives Me

- What if scenarios
  - If I accept this and not that
  - Cost vs Schedule vs Performance output
  - Ripple effect, 3rd and 4th order
- Decision traceability
  - Who decided that and when
  - What was the rationale (with data)
- Impacts to my Functional & Physical Model

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Why It Matters

- Decision makers need to understand the impact on cost/schedule/performance
- Mitigation methods needs to be traced to a requirement, process update, asset, etc
- Risk management can occur at the same time as function/physical modeling
- Can simulate cost/schedule/performance/risk

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Thinking About Risks Means

- We capture, mitigate, and resolve potential lifecycle errors early in the process before they become overly expensive
- We build our models to reflect and show the impact of risks on the system
- Modelers can be thinking about potential risks prior to an official risk assessment

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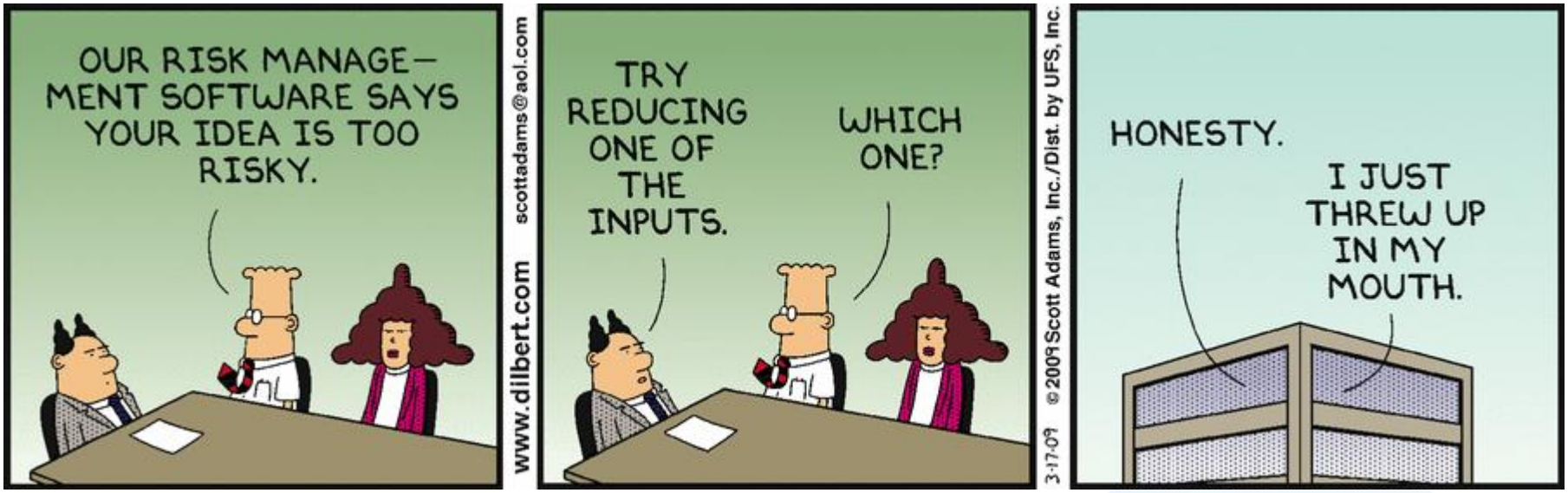

QUESTIONS

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