



# Good, Fast, or Cheap?

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# About Dobson Solutions

- Training, keynotes, and consulting on project management, risk management, and creative thinking
- Michael Dobson is the author of 13 books on project management — and over 60 books in total. He has given more than 1,000 seminars and workshops worldwide.
- Learn more about Michael and Dobson Solutions at <http://sidewiseinsights.com>



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# **Or, How to Use the Triple Constraints to Define and Manage Project Parameters**

**Michael Dobson, PMP**

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# Overview

- What are project constraints and why do they matter?
- What is the Hierarchy of Constraints and how does that help you make project decisions?
- How do you make the right tradeoffs among project constraints?

# *Constraints* Limit Your Project Choices

- My project has a deadline
- My project has a budget.
- My project has requirements.
- My team members have certain skills.
- I must follow policies, regulations, and laws.
- I must make my customer happy.

# Some Constraints Only Apply to Certain Projects

- My project must meet building codes.
- My project has to beat the competition to market.
- My project must work across international borders.
- My project must not generate publicity.

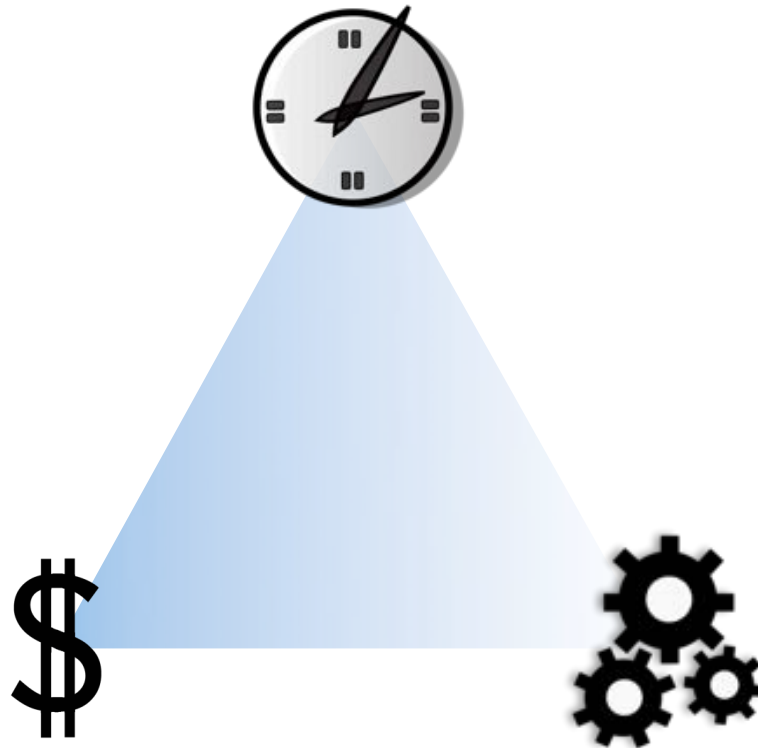
# Some Constraints are Hidden, Assumed, or Unknown

- The deadline depends on outside events we can't predict or control
- One of the key stakeholders refuses to say exactly what he or she wants
- We're assuming that everybody's on board with this project

# Some Constraints Aren't Even Real!

- We can't try a particular technique; we tried once before and it didn't work
- Everybody likes blue. It has to be blue.
- The most important thing about this project is that we submit weekly reports on time.

# Three Constraints are Universal



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# The TIME Constraint

## “How long have I got?”

- Specific Deadline
- Triggered by an Event
- Degree of Urgency

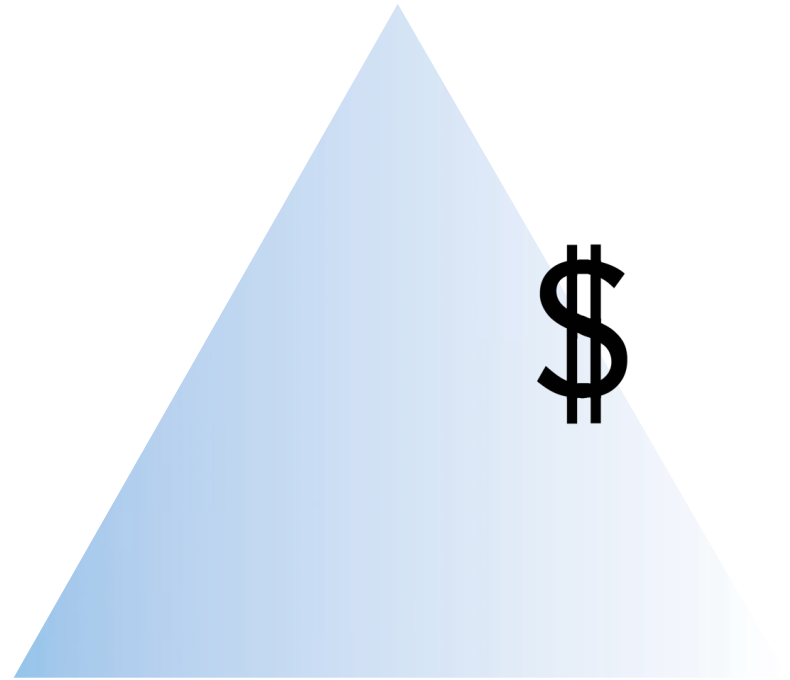




# The COST Constraint

## “How much (of what) can I spend?”

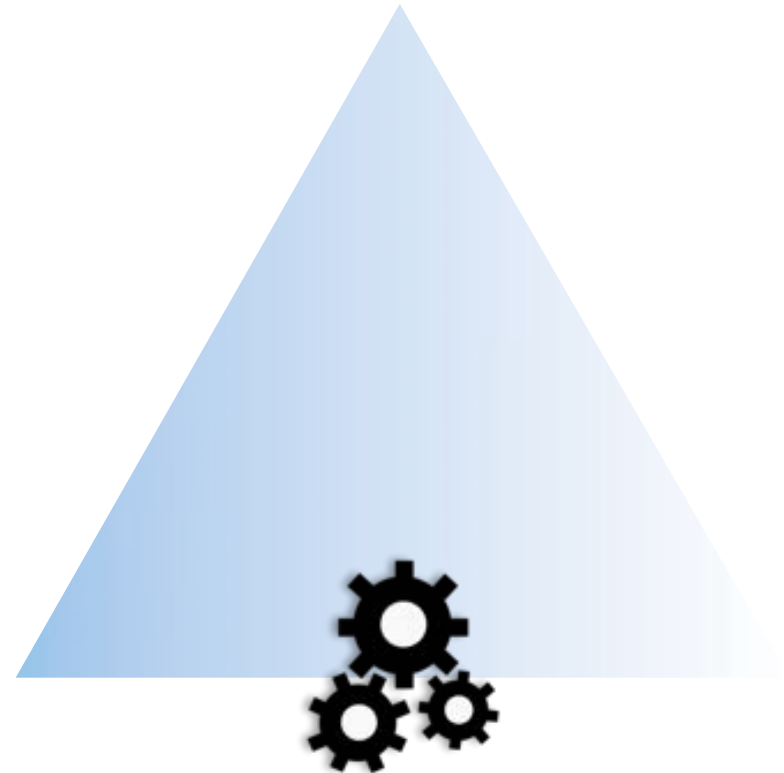
- Cash
- Person-Hours
- Equipment
- Supplies
- Overhead
- Intangibles



# The SCOPE Constraint

## “What Do I Have to Produce?”

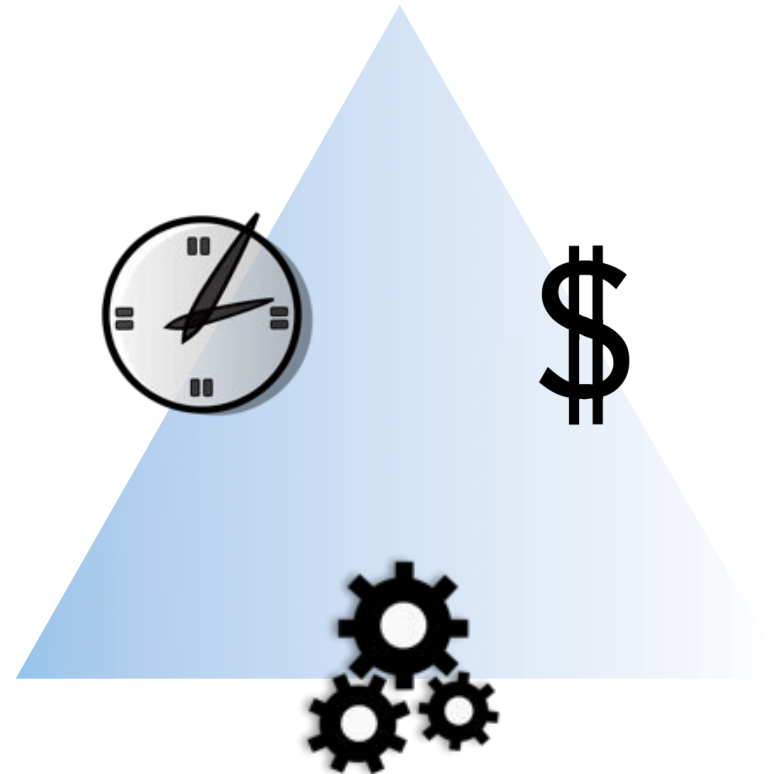
- Functional/Technical Requirements
- Purpose/Desired End State
- Evaluation Criteria



# The TRIPLE CONSTRAINT

## “Good, Fast, Cheap?”

- Frequently impossible to achieve trifecta
- Never exactly equal in priority
- Making the right choice is essential!



# CASE STUDY: Persian Gulf War, 1990-1



# Types of Failure

- “What if it takes longer than we would like?”
- “What if it costs more than we want to pay?”
- “What if we *lose*?”

# Hierarchy of Failure

- If we lose, nobody will care how quickly or cheaply.
- If we take too long, our allies and homefront support may weaken.
- If we spend too much, some people may complain.

# The DRIVER

- The DRIVER usually has the least flexibility of the constraints.
- If you fail to achieve the DRIVER, you have failed.

# The WEAK Constraint

- The WEAK Constraint has the most flexibility of the constraints (but not unlimited).
- Exploit the WEAK Constraint's flexibility to achieve your goals!

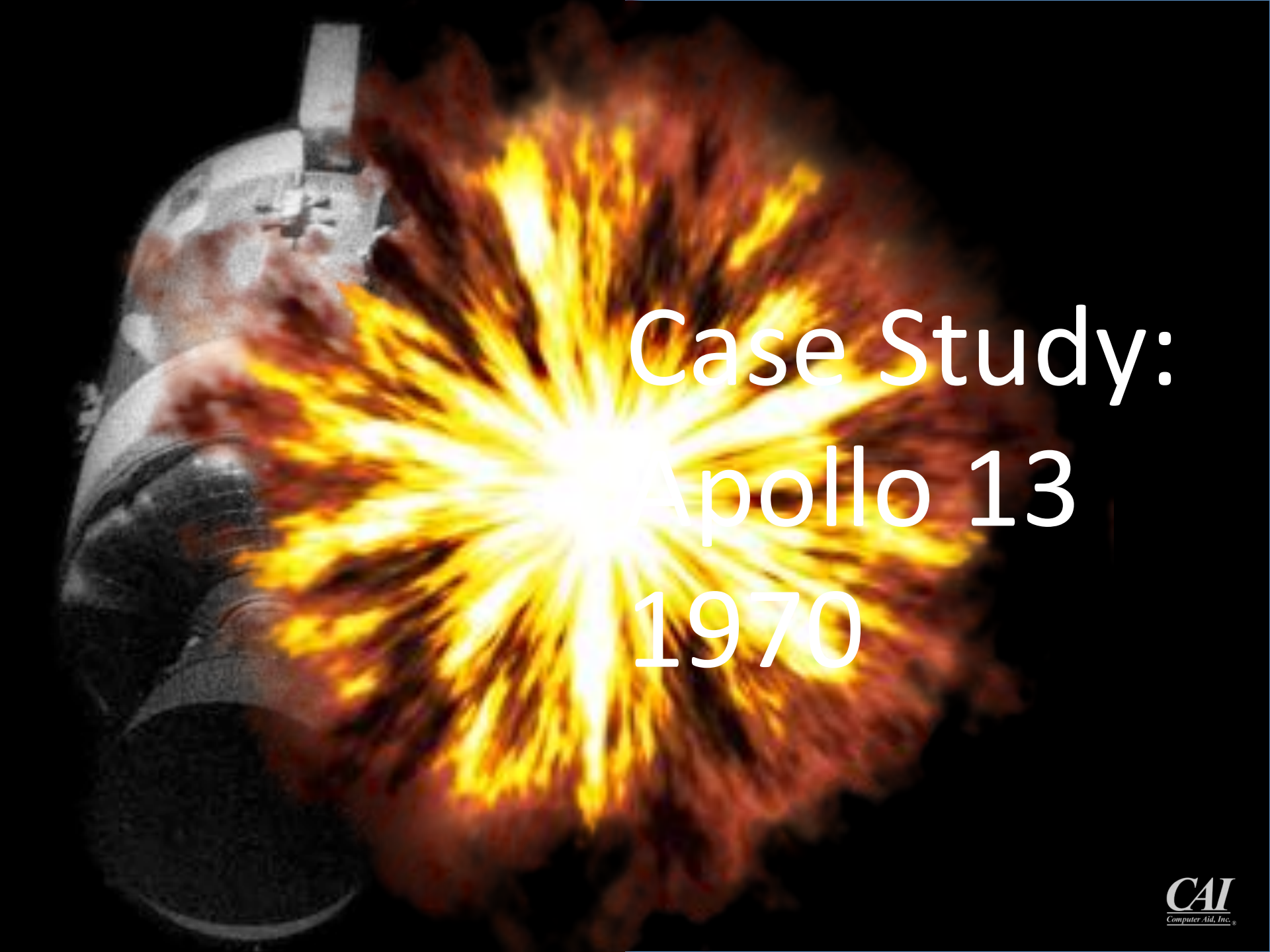


# The MIDDLE Constraint

- Sometimes closer to the DRIVER, sometimes closer to the WEAK.
- Area requiring the most balanced approach.

# Persian Gulf War

1. DRIVER = Scope. Liberate Kuwait with minimum casualties
2. MIDDLE = Time. Get it done before popular support and the international alliance weaken. (Vulnerable to attack.)
3. WEAK = Cost. Bring overwhelming force to intimidate other side into surrender.



# Case Study: Apollo 13 1970

# Unfortunately, Failure Is An Option

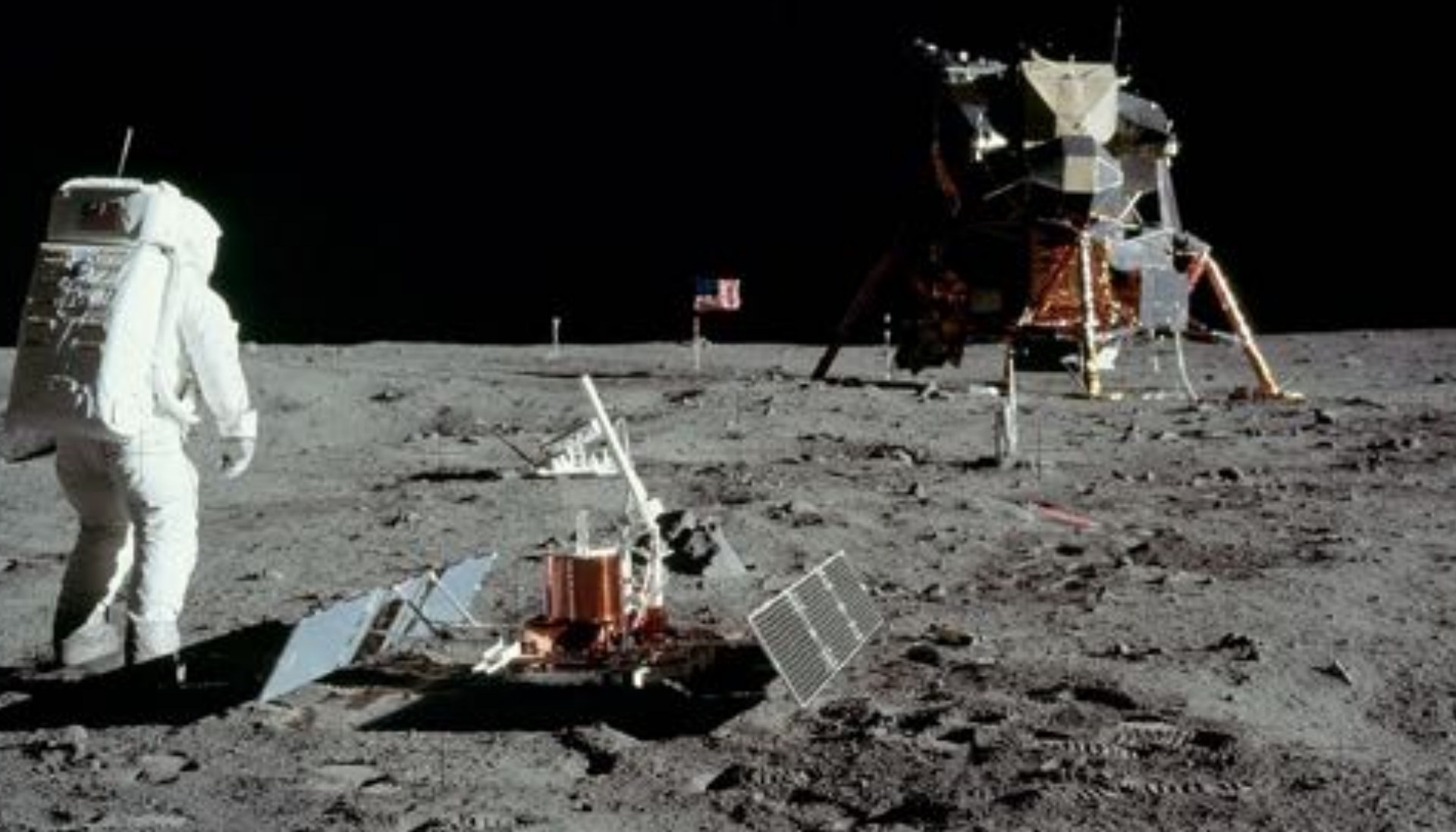
- Develop a power-up sequence that uses fewer than 20 amps
- Calculate a burn rate to get the reentry angle within tolerance
- Fit the square command module CO<sub>2</sub> scrubber filter into the round LEM filter socket



# Apollo 13

1. DRIVER = Time. Before the CO<sub>2</sub> level impairs the astronauts too much.
2. MIDDLE = Cost. Use only the resources available on the spacecraft.
3. WEAK = Scope. Even an inadequate result may give us extra time.

# Case Study: NASA to the Moon



# “We commit this nation...”

1. ...to put an man on the Moon and bring him safely back to earth
2. ...before this decade is out!”
3. (What’s the budget?)



# Define the Constraints Before Ranking Them!

- “End of the Decade” — 1969 or 1970?
- What’s the financing source and how flexible is it?



# It's Up to You Now

- What's the driver, middle, and weak constraint for the Apollo program?



# The Most Overlooked Question

“Why?”



# The SPACE RACE

1. DRIVER = Time. Before the Soviets, or the end of the decade, whichever comes first!
2. MIDDLE = Scope. Do your best to keep the astronauts safe.
3. WEAK = Cost. Don't waste money, but spend what you need to win.

# What about QUALITY and RISK?

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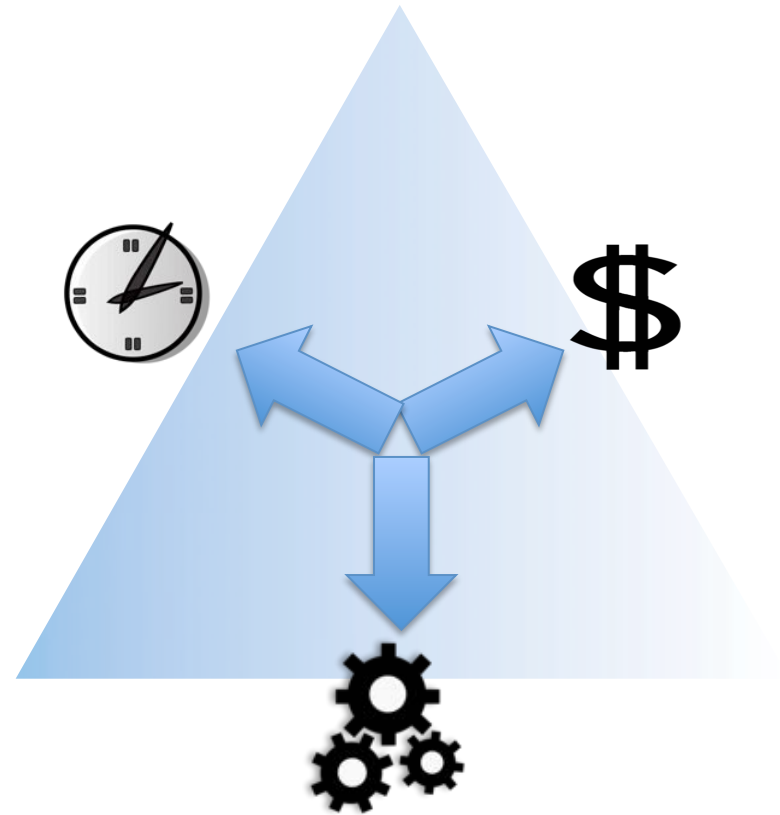
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# QUALITY is not SCOPE

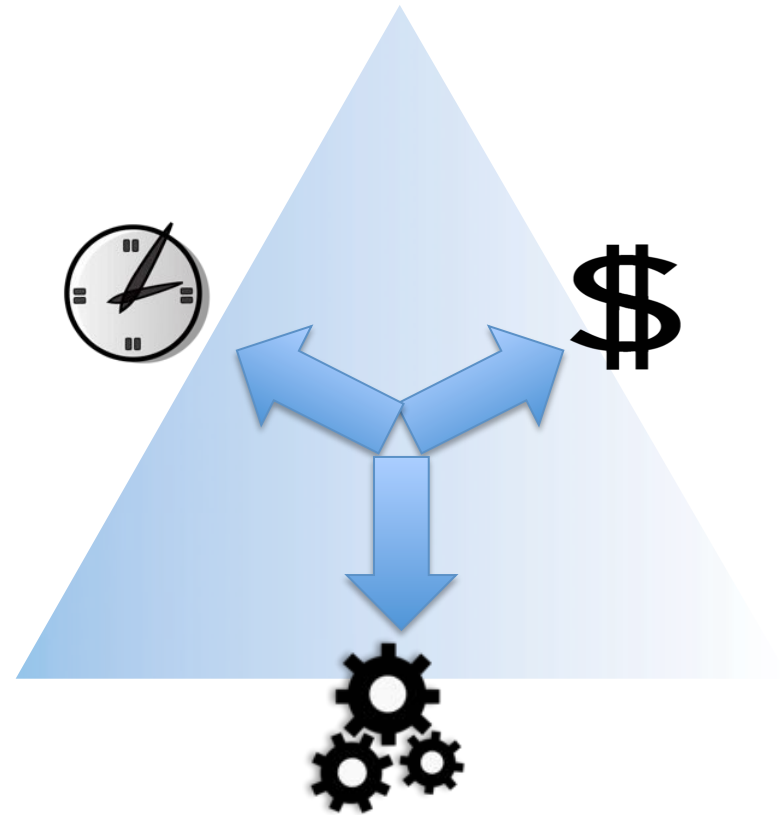
## “How good is ‘Good Enough’?”

- The Triple Constraints are *minimum* standards
- Quality is the pressure to go beyond the minimums



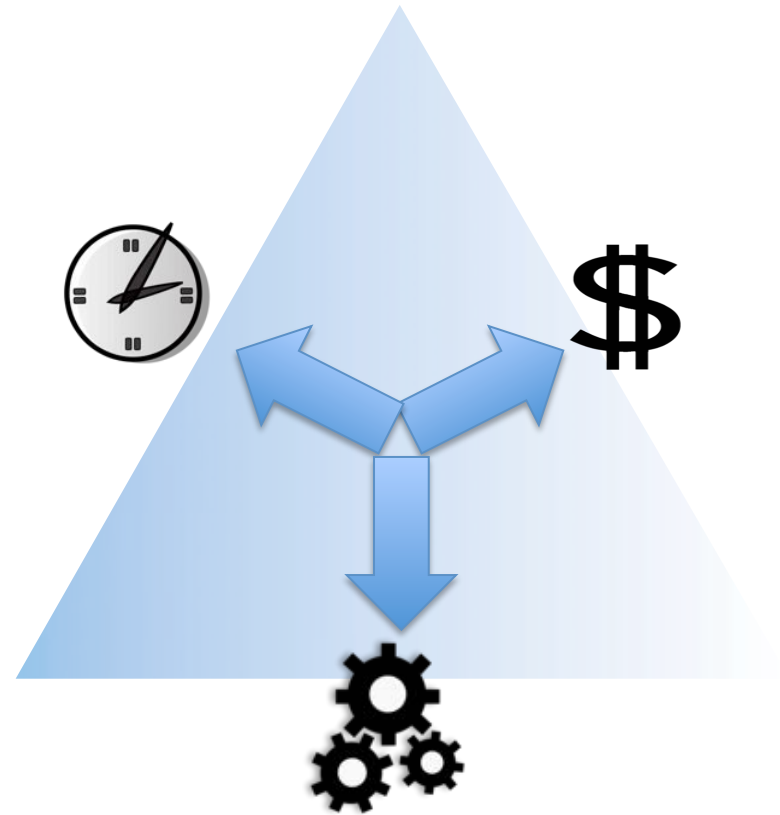
# How Good is “Good Enough”?

- Fitness for use
- Benchmarking
- *Meaningful* improvement



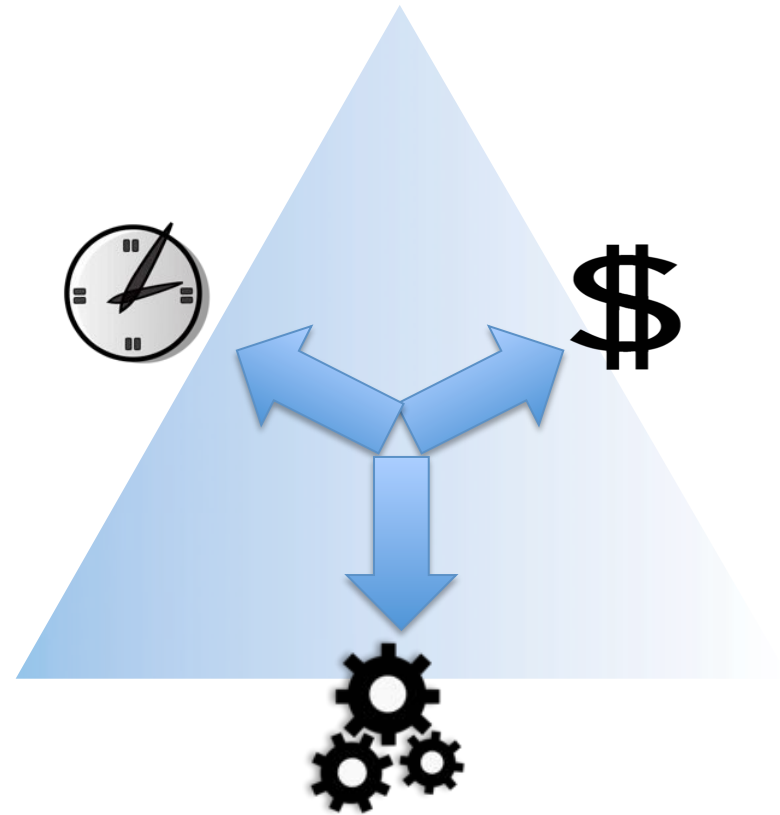
# Seven Level Outcome Evaluation

1. Perfect
2. Outstanding
3. Exceeds expectations
4. Fully satisfactory
5. Barely adequate
6. Failure
7. Catastrophe



# Measure of Project Difficulty

- What is the best you can achieve without extraordinary effort?
- What is the lowest level that actually solves the problem?

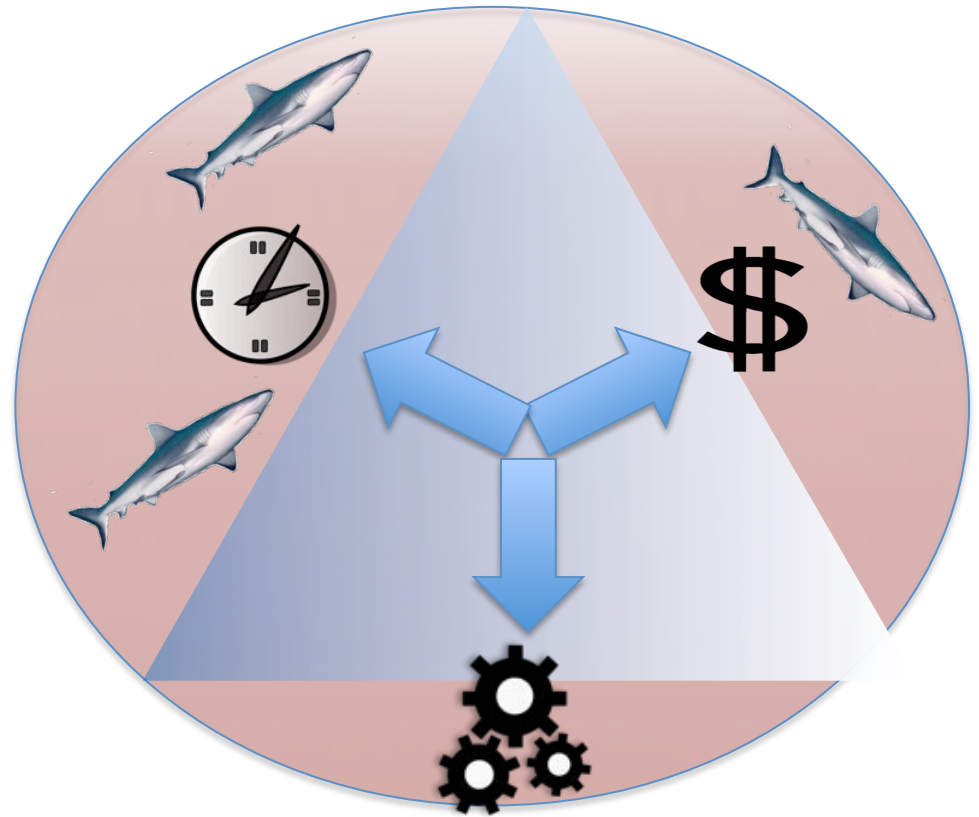




# RISK is an Environmental Factor

## “What is uncertain?”

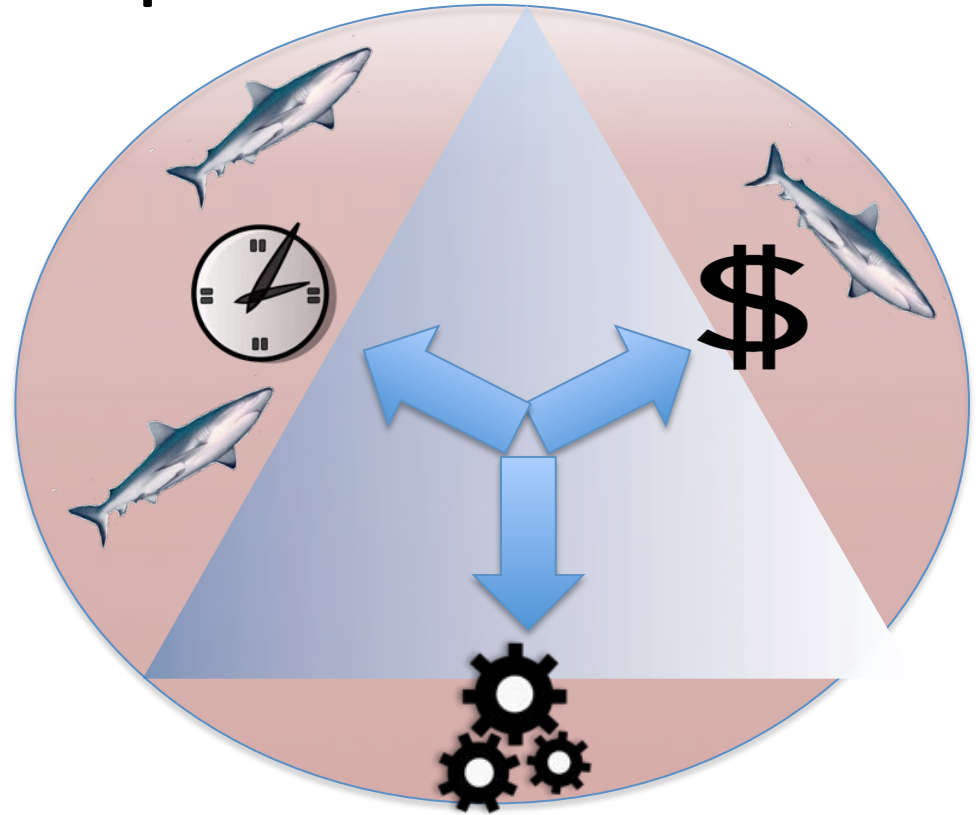
- Threats
- Opportunities
- Contingencies
- Reserves
- Categories



# Types of RISKS

“How much (and what kind) of risk can I accept?”

- Financial
- Legal
- Safety
- Reputational
- Competitive



# Key Advice

1. Defining the constraints is essential to defining the project.
2. There are many constraints, but the Triple Constraint of Time, Cost, and Scope is universal.
3. Constraints can be hidden, assumed, or unknown

# Key Advice

4. You *must* achieve the Driver.
5. The Weak and Middle Constraints have exploitable flexibility. Exploit it creatively.
6. Watch out for assumed constraints.
7. The most overlooked question in project management is “Why?”

# Key Advice

8. There are seven possible project outcomes.
9. Defining exceeds expectations, outstanding, and perfect helps set quality goals.
10. Defining failure and catastrophe identifies risks.
11. Quality and risk affect all three legs of the Triple Constraint

# Questions?



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# Michael Dobson's SIDEWISE THINKING



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