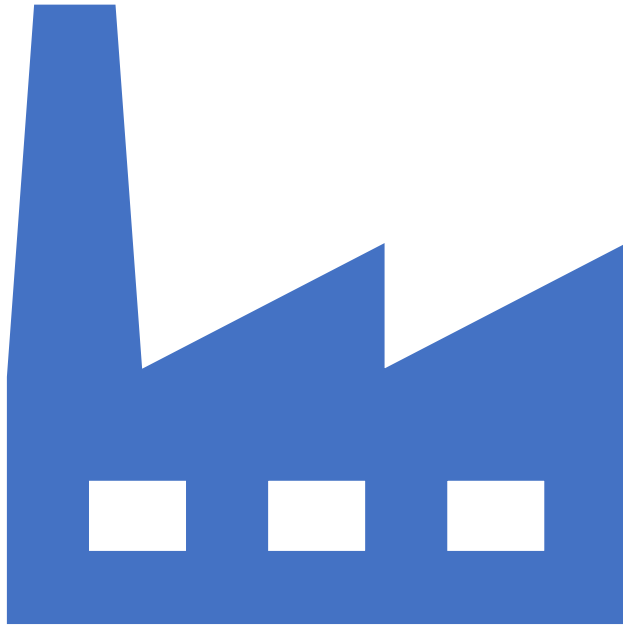


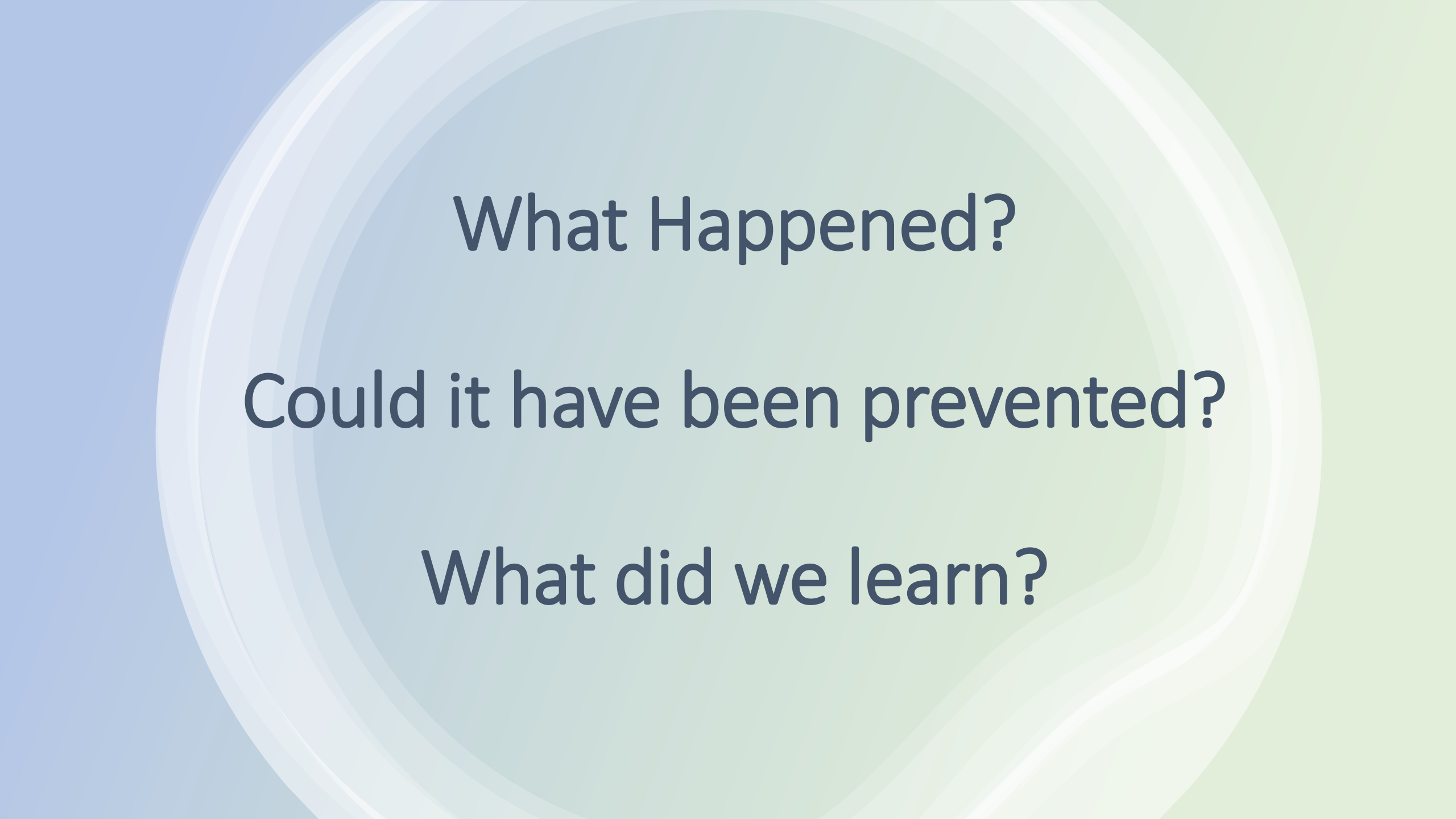
2022 Supply Chain Failure



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(joint meeting with ASCM Massachusetts Minuteman)



What Happened?

Could it have been prevented?

What did we learn?

What Happened?

COVID

- Demand evaporated
 - Then supply closed down
 - Then demand came back with a vengeance
 - But supply was (still is) slow to recover
-
- At first there was a lot of inventory
 - Then it got slowly used up
 - Replenishment couldn't keep up when demand returned



Not the same in every segment

- Masks, disinfectant, medical supplies, etc.



Not the same in every segment

- Masks, disinfectant, medical supplies, etc.
 - Demand rose sharply
 - Shortages
 - New supplies entered the market (mostly from existing suppliers of other products)
 - Transportation issues
 - Eventual supply glut in some cases
 - Factories re-tooled back to original production



Could it have been prevented?

- Short answer: NO
- Could we have been better prepared? Yes
- Could the effect have been lessened? Of course



Can I sell you some insurance?

- When you buy health (or car, or homeowner, or life) insurance, what's the best-case outcome?
 - You never have to make a claim.
- If it's never used, was the money you paid for the premium wasted?



Wanna buy some
Supply Chain
Insurance?

It's called Supply Chain Risk Management

Prevention

- Reduce the opportunity for risk

Mitigation

- Lessen the impact of the disruption

Remediation

- Ease (or speed up) the recovery



Prevention

Have multiple and/or alternate sources

- In multiple geographies
- Not in the same geopolitical bloc or country

Re-engineer to avoid limited source materials – strive for sustainability, recycle and re-use opportunities

Pay more for equipment and workers to increase flexibility

- Programmable and quick change equipment to reduce changeover time that make shorter runs less costly.
- Cross-trained employees so they can be positioned where needed

Don't forget logistics/transportation

- Faster modes are more expensive
- Modes and locations may have more or less risk of loss or delay

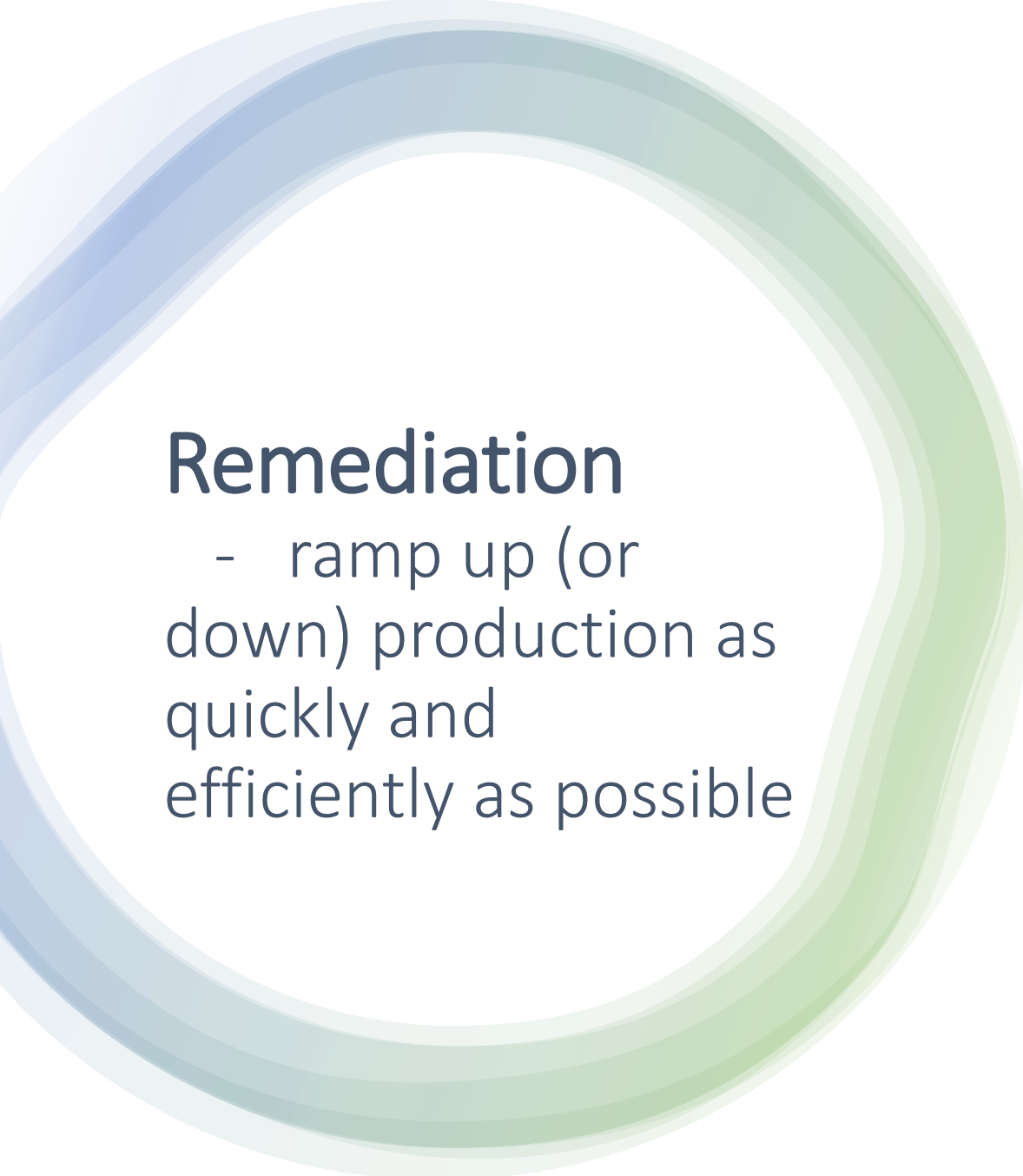


Mitigation

Design plants and processes (and suppliers) for flexibility

- Programmable and quick change equipment to reduce changeover time that make shorter runs less costly.
- Cross-trained employees so they can be positioned where needed
- Incentives for key suppliers to do the same
- Near-source when you can

Use those alternate sources



Remediation

- ramp up (or down) production as quickly and efficiently as possible

Knee-jerk solution: Emergency (Safety) Stock - not realistic

It's all about preparation (have your insurance in place)

Have contingency plans in place and an action plan

- Key part of Supply Chain Risk Management



The hardest part(s)

Thinking the unthinkable

- Who would have thought Japan's chip factories would (almost) all wash away in a tsunami?
- Did anybody expect China to lock-down all factories for months?
- And it's not always a global crisis that's the problem
 - Cyber-crime shuts down your factory
 - The electric grid fails
 - Fire destroys key supplier's operations
 - Truckers or railroaders strike
 - Pirates, robbers, train derailment, etc
 - Theft, fraud, government action e.g. over environmental violations, human rights
 - The list goes on....



The Hardest Part(s)

Convincing the CEO, CFO, Board, etc. that insurance is necessary

Tough to make cost / benefit justification

- Must factor in probabilities
 - The most devastating are the least likely to occur

Sometimes the benefit (factoring the probability) just doesn't justify the cost

- Then you “self-insure” by default

Reality Check

Supply Chain Management is about balancing supply and demand

100% success is “the unreachable star”

Man of La Mancha

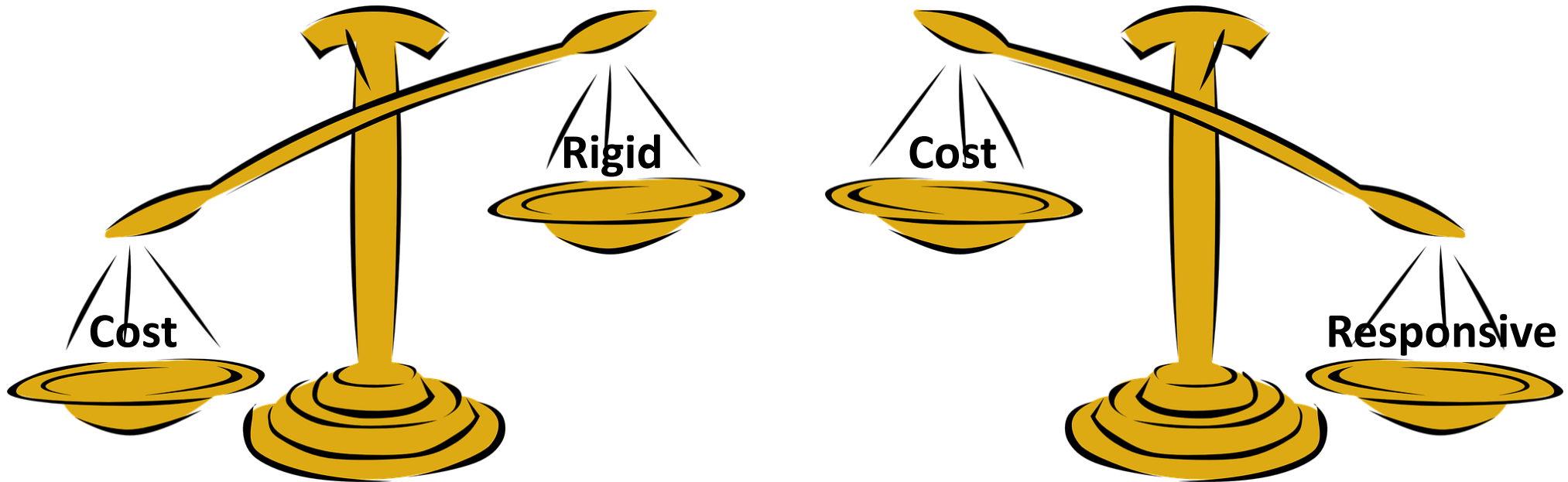
SCM is the science of tradeoffs

- What we want is “optiization” – so-called “best” result

Best for:
Finance?
Customer Service?
Factory Efficiency?
Flexibility?

Kinds of Supply Chains

- Oversimplifying, Supply Chains can be Efficient (lowest cost) or responsive (flexible/adaptive)



There's a saying....

You can have it Fast, Cheap, or Good (pick two)

- Fast requires high inventory or highly flexible processes (\$\$)
- Cheap requires rigid processes for high efficiency (not flexible), low-cost materials
- Good implies high quality materials and processes (\$\$)

In truth, it's a continuum

Optimization is the process of finding the “sweet spot”

- But that depends on your priorities
 - Minimum cost will drive you to rigidity, lowest cost materials, poor quality
 - High quality and flexibility add cost
 - Where do you want to be?

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What does this have to do with supply chain failures in 2022?



In Supply Chain Planning, the main emphasis is usually on cost (always at least partially on cost).

In competitive markets (can you think of many that aren't?) cost / price is a major factor for customers.

Even though some products can demand a higher price based on product characteristics, superior performance, unique offerings, aesthetics, etc., companies always want to minimize costs

Supply Chain Insurance is a cost... and one that is difficult to justify on a cost-benefit basis (best case is when you never use it)



Supply Chain Planning software

Optimization is
the keyword

- Optimize for whom? CFO?, production(efficiency)?, flexibility, quality?

The truth is, it
is never only
one factor

- Remember... Supply Chain Management = Trade-offs

The software
will solve the
equation and
produce “best
outcome”

- But “best” is weighted by the relative value you place on cost, quality, speed, flexibility, ...



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Supply Chain Insurance places constraints on the software's ability to solve the equation

Herein lies the rub

(apologies to Will Shakespeare)

Things change

- China has been the low cost supplier for decades but...
 - Political situation
 - Increasing costs
 - Fewer and fewer alternatives as time goes on
 - Currency fluctuations
- Price competition has driven alternate (higher cost but closer, higher quality, more dependable, more flexible) suppliers out of business
- And that trend continues
 - And it's not just China – Vietnam, Thailand, South Korea, etc, a strong competitors to China and Japan. India is emerging (but at least they don't hate us)

What did we learn?

- Anything can happen... even the unimaginable
- We (hopefully) have a better understanding of risks and vulnerabilities
- Companies have (or will develop) a better supply chain risk approach based on a better understanding of the cost/benefit
- Supply Chain Management continues to be an exciting, challenging, frustrating, high-stakes / high stress, but rewarding career.

BTW - ASCM has educational programs for SC Risk Management



Thank You
for Attending

Go buy some insurance