



Supply Chain Disruptions

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Agenda

- Causes of Supply Chain Disruptions
- Current supply chain disruptions
- Impacts
- Inflation
- Why are we in this position?
- Next Steps



COVID-19

Supply shortages, unpredictable forecasting, logistic roadblocks, etc.

Natural Disasters

Fires, hurricanes, deep freezes, etc.

Geo-Political Events

Russia/Ukraine Conflict, sanctions, border closures, adversarial threats etc.

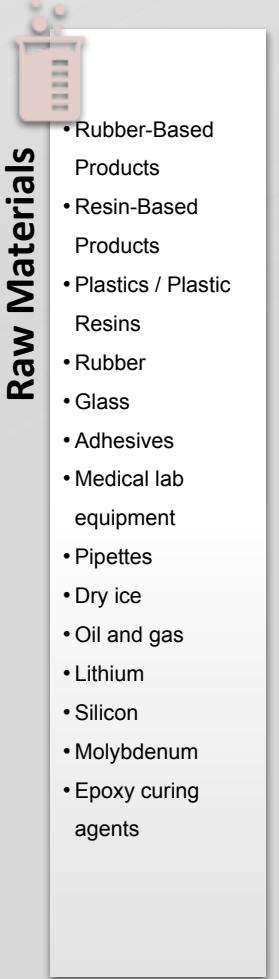
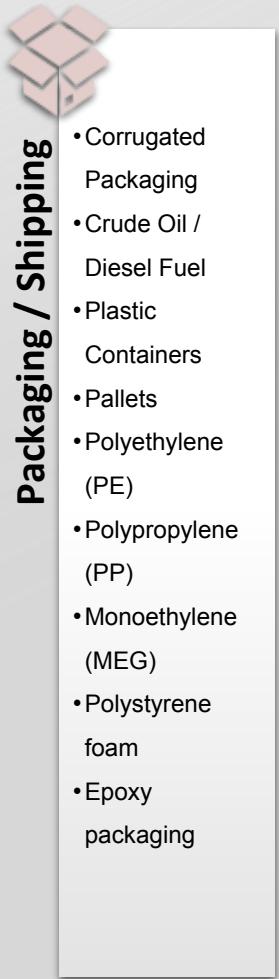
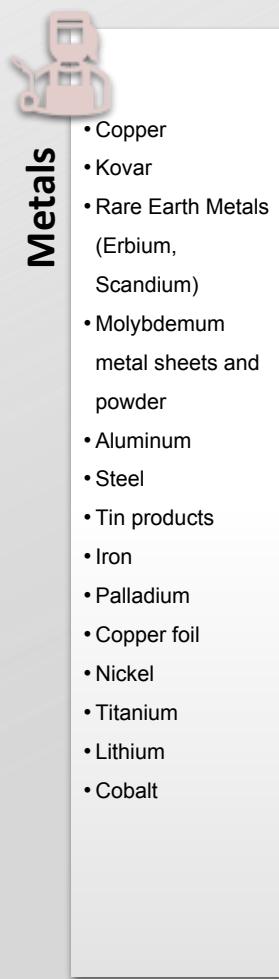
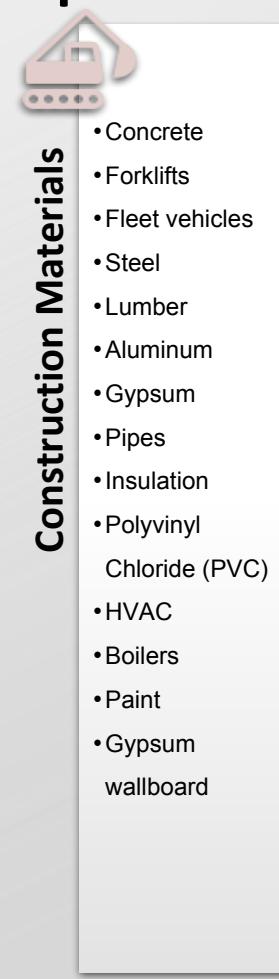
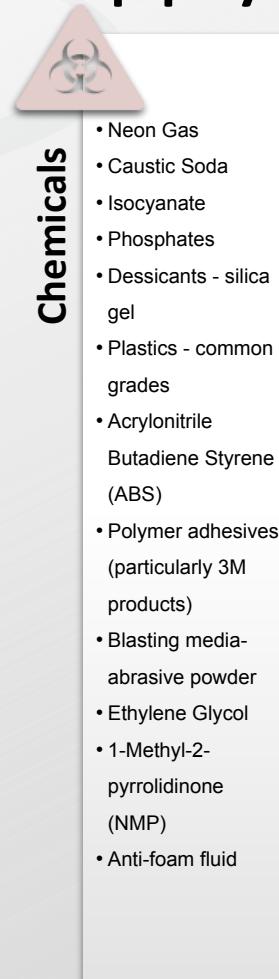
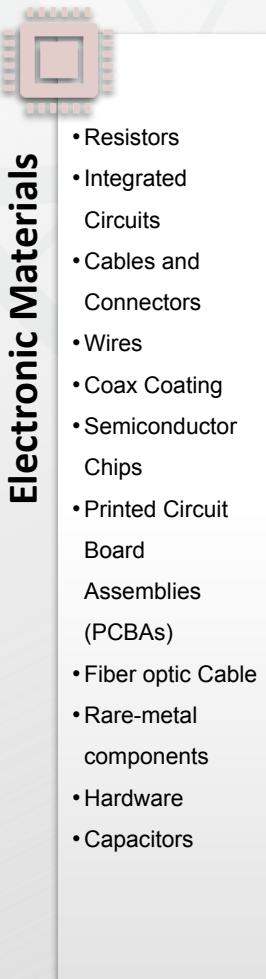
Fluctuations in Demand

Supply and demand are not equal so suppliers are unable to accurately forecast supply needs

Inflation

Consumer spending variabilities

Current Supply Chain Disruptions



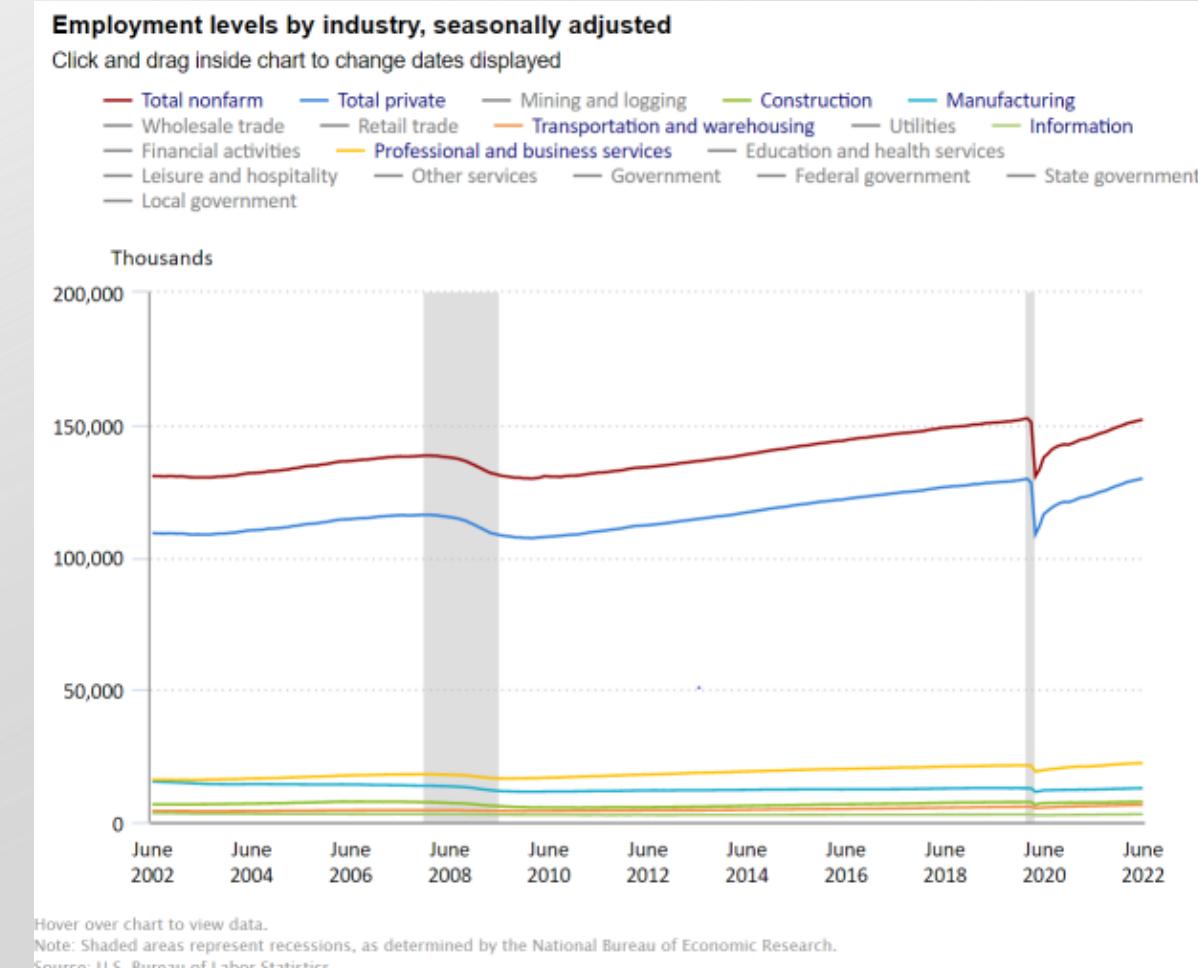
Potential Impact of Raw Material Shortages

- Budgets do not include rising material costs
- Life of Program buys risk design changes
- Long lead times are impacting which FY a procurement is costed



Potential Impact of Personnel Shortages

- Labor issues over the past few years has likely contributed to inflation
- Labor issues over skilled laborers who can manufacture durable goods to DOE/NNSA standard/specifications
- Labor issues continue in transportation and warehousing which is causing ripple effects throughout the supply chain

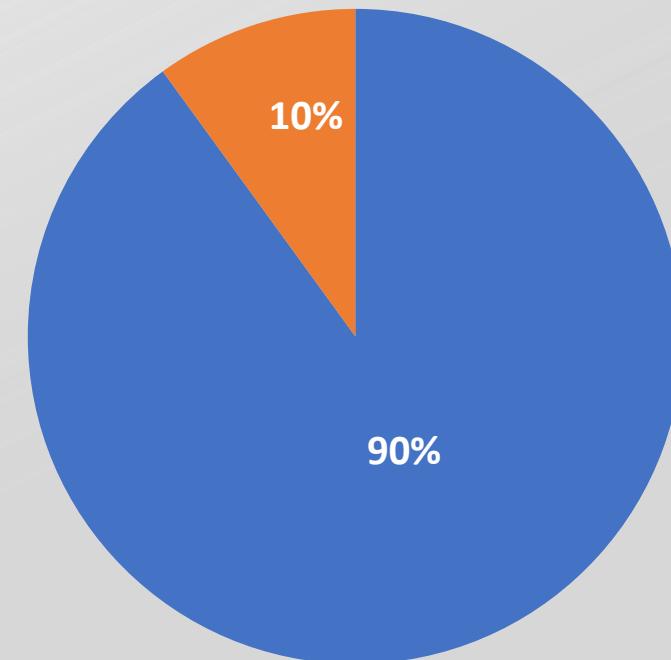


Potential Impact of Semiconductor Shortages

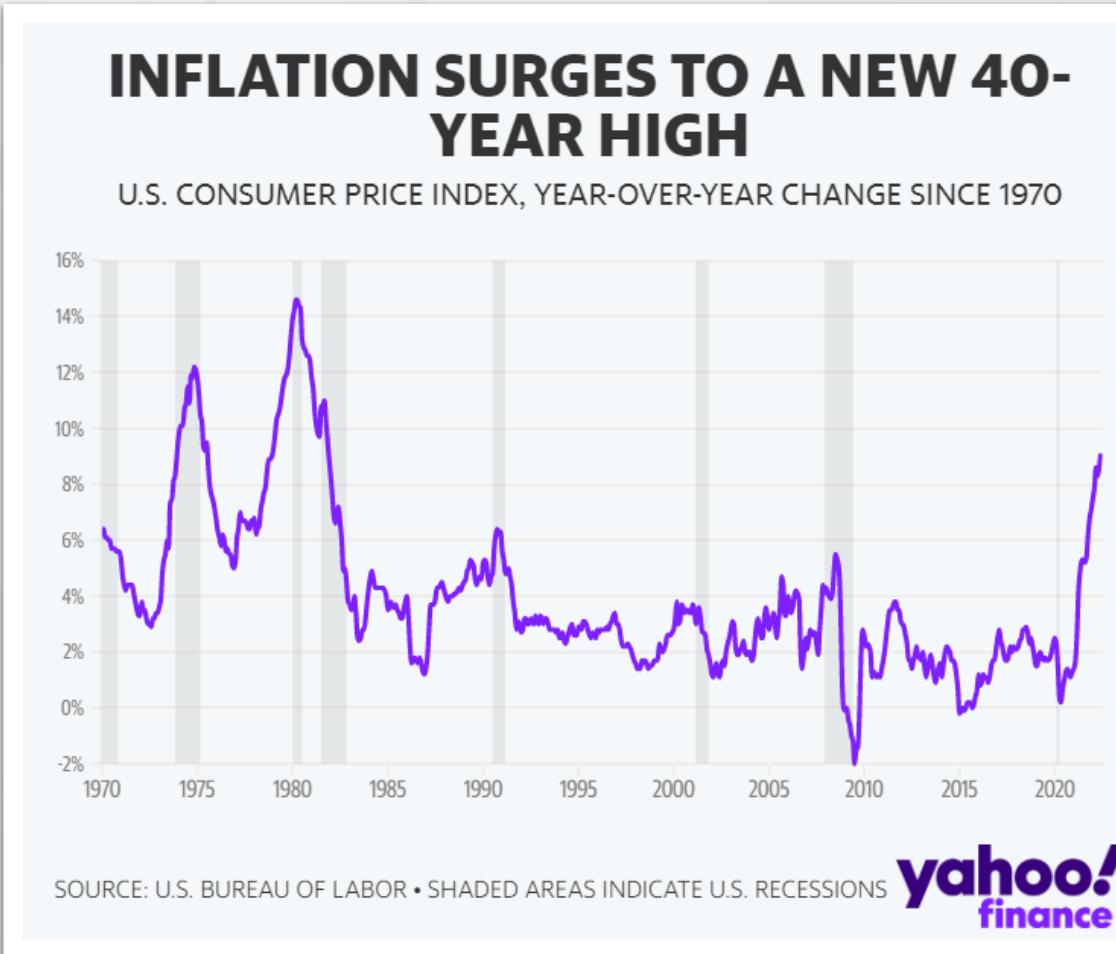
- Price of neon went up 600% since the annex of the Crimean peninsula
- Semiconductor Industry Association said 'there will not be an immediate supply chain disruption risk'
 - Companies have been stockpiling neon since 2020
 - Companies are prepared to recycle the neon
 - Only short term fixes
- Experts anticipated shortage would only be through 2022, with Russia/Ukraine conflict, it could be much longer
- Even if the gas shortage is fixed, the war will still cause problems (palladium, other rare earth metals, etc.)

NEON GAS MANUFACTURING PLANTS

■ Ukraine ■ Other Countries

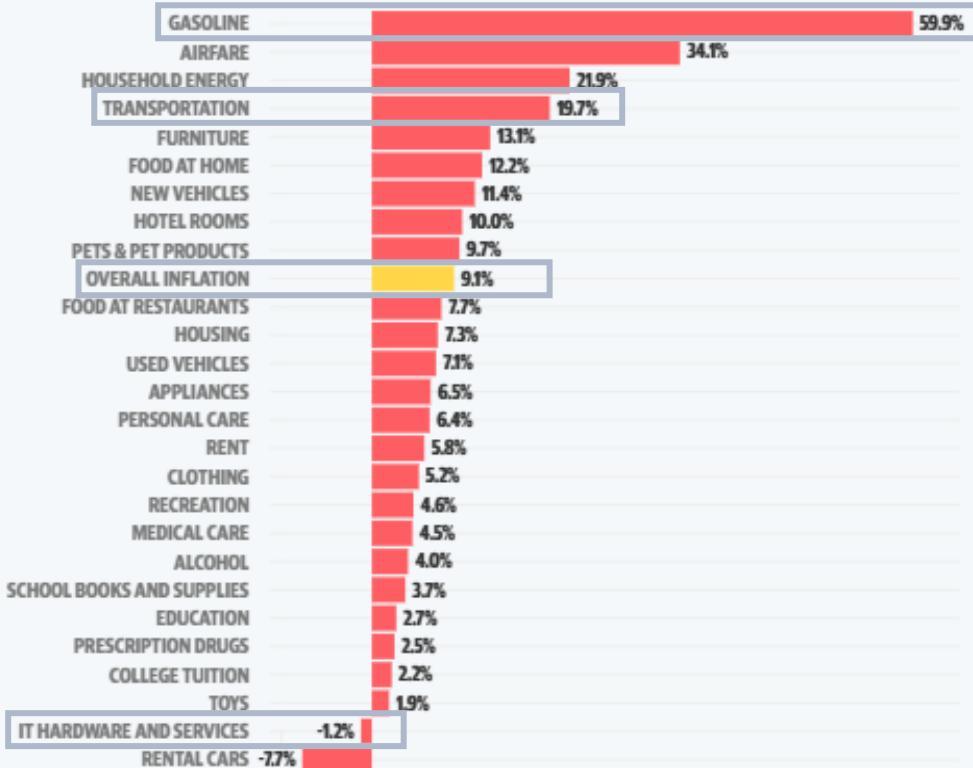


Inflation – As of 7/13/2022



WHERE INFLATION IS... AND ISN'T

12-month change in the price of:



SOURCE: BUREAU OF LABOR STATISTICS. DATA AS OF JUNE 2022

yahoo!
finance



Inflation Impact Considerations

- 1) Identify a reliable source for an increased inflation rate for use in cost estimating
- 2) Determine if the program is actually experiencing inflation at a material level and should be considered during FY budgets
- 3) Consider building in higher then expected cushion costs to budgetary estimates for specific purchases

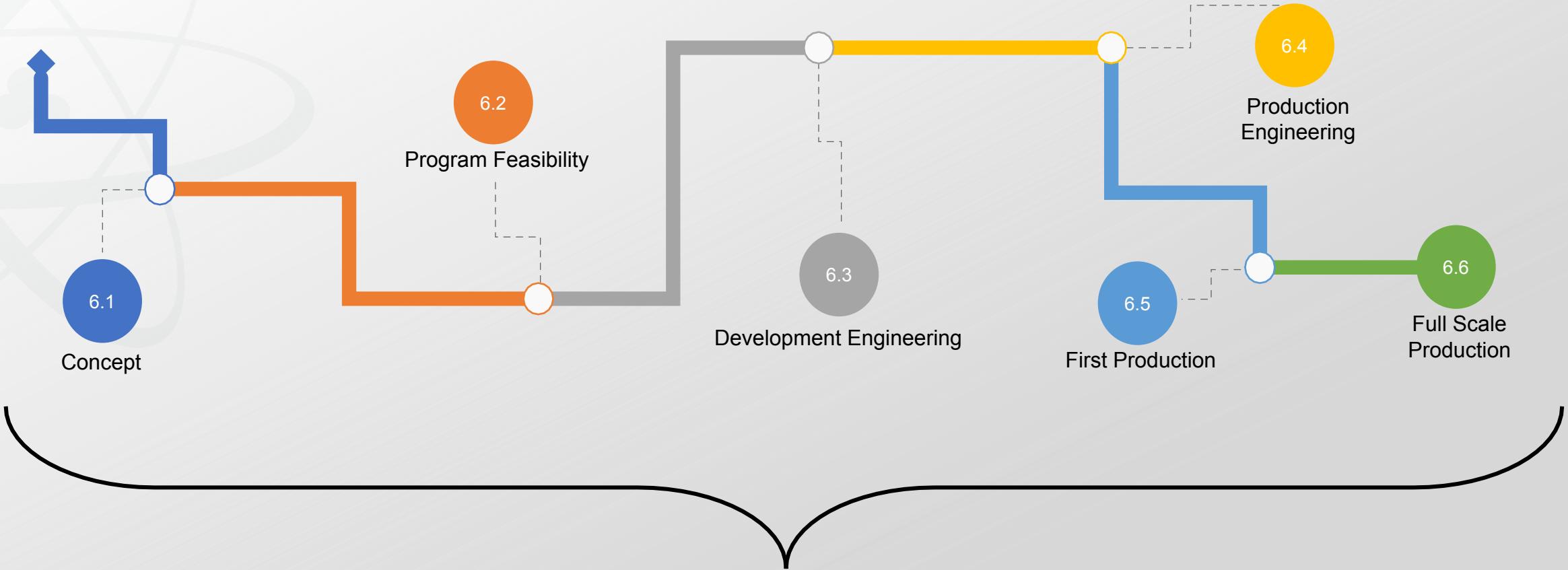
Additional Root Causes

- Current systems do not account for disruptions
 - Typically based on internal/historical data
- Inability to share issues and mitigation strategies
- Considering supply chain throughout the entire lifecycle of a program



Next Steps to Consider

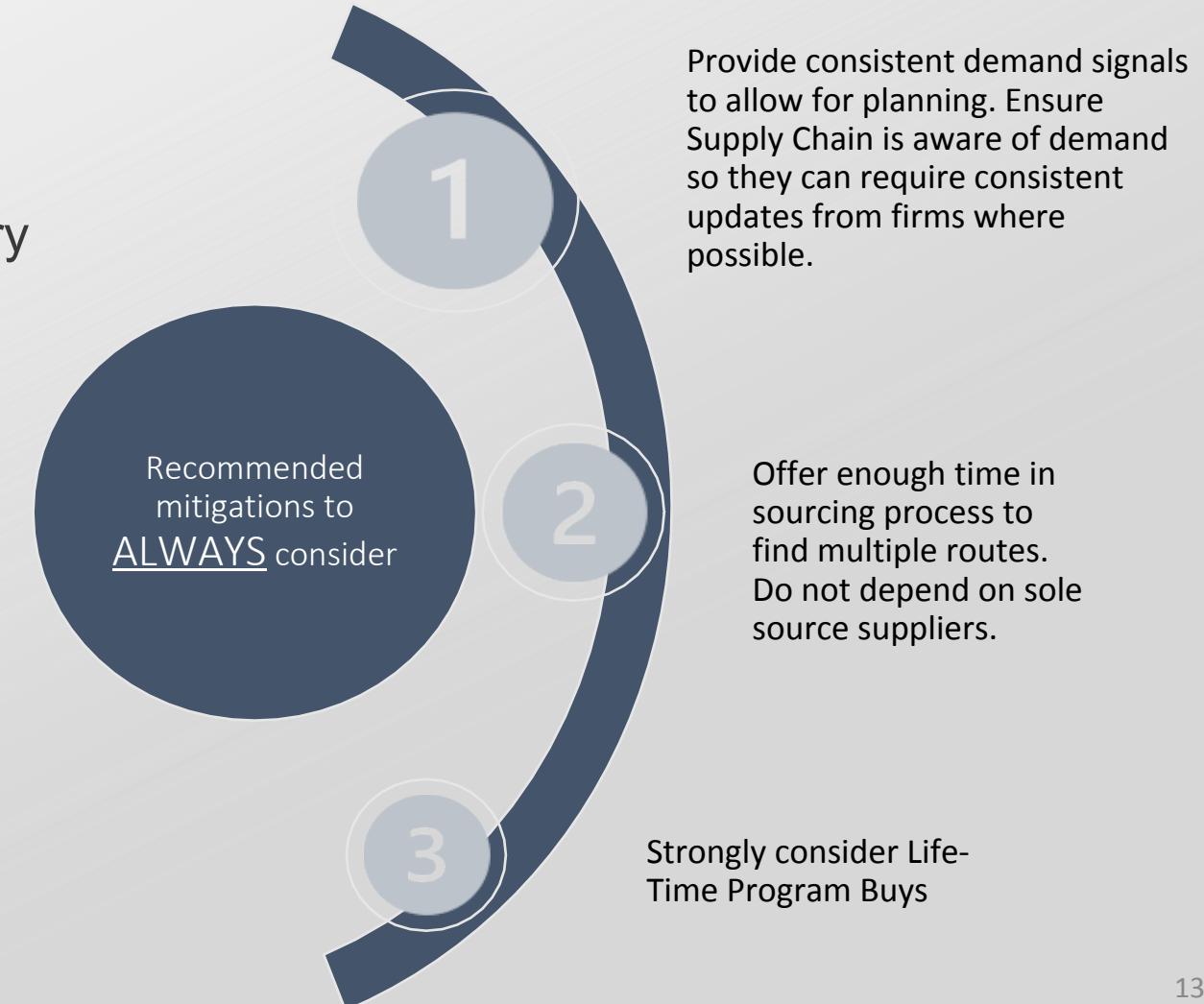
- Create reliable predictive analysis utilizing post-COVID data
- Ensure partnership between Supply Chain Professionals, Cost-Estimating Professionals, Engineers, Project Managers
- Strongly consider specific supply chain mitigations
- Integrate Supply Chain disruptions throughout lifecycle



Supply Chain Disruptions Impact **ALL**
stages of the supply chain process

Mitigation Strategies

- Address supply chain disruptions at every stage of your supply chain process
- Build in cushion in cost
- Order parts significantly sooner than anticipated
- Begin to explore and build up a logistics plan for housing life of program buy purchases





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Thank you!