

Electronic Component Supply Chains Built for the Future

The logo for LYTICA, featuring the word "LYTICA" in a bold, black, sans-serif font. Above the letter "Y" are three short, vertical bars in purple, orange, and grey. A registered trademark symbol (®) is located to the upper right of the letter "A".

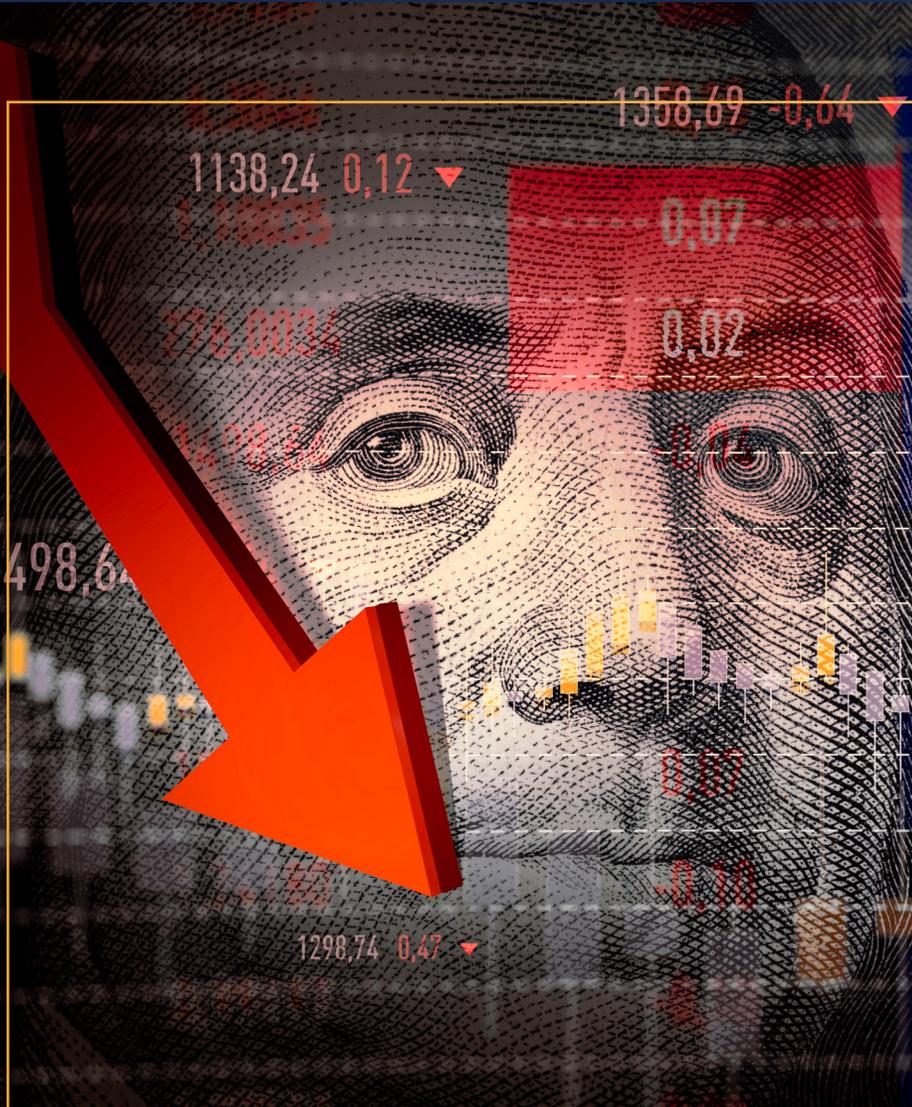
+11,00.00

Nobody can predict the future, but with the right combination of tools and skills, a solid plan can be developed. Without exception, supply chains have felt the fallout from the pandemic over the past few years. Demand increased sharply, border regulations became murky, and many supply chains were not prepared.

Strengthening your supply chain can help withstand these unexpected adversities. Understanding the problems that cause disruptions, the factors that you can and can't control, and the technology available to provide insights, all contribute to your overall success.



The problem(s)



Economic cycles repeat themselves over time, although the circumstances and outcomes will vary. The general cadence of shortage followed by surplus is not novel. These economic cycles strain the efficiency of electronic component supply chains.

The world is currently headed into a recession after slowly exiting a period of turmoil, which brought with it shortages and extreme price increases. This recession will offer some relief by way of price drops, but it will also cause disruptions for electronic component supply chains.

Prices already seem to be settling after a period of flux. Unfortunately the changes of the past two years were dramatic and quick, leaving little time for adjustment. Electronic component supply chains are going to find themselves with a glut of inventory due to a shift in demand, and double ordering, which resulted from desperation during the shortage.

As prices continue to settle, it is predicted that they will drop more quickly than they rose - again leaving very little time to pivot. Planning now will help mitigate the inevitable future challenges. Why are these cycles of shortage and surplus so troublesome for supply chains? They lead to a host of disruptions that all affect the customer and the bottom line.

Disruptions often resulting from a shortage or surplus:



1. Shipping delays
2. Supply chain strain
3. Financial uncertainty
4. Supplier / manufacturer risks
5. Inventory glut or shortage
6. Influx of components / electronic parts

Neither extreme situation (shortage or surplus) is ideal, but with a strong strategy and prior planning, building a supply chain to withstand the future is possible.

When preparing for the unknown, it is important to use data to drive decision making. Data can pinpoint exactly where a supply chain is successful and where it has missed the mark. There are so many software options available to track, store, and organize analytics, there is no excuse for avoiding technology. Using historical data to make future decisions is smart planning. Successful supply chains of the future will lean into data. Better information will lead to better business opportunities and more value for the overall company.

The world is changing fast

Picture a ball rolling down a hill. The further away it gets from the starting point, the faster it goes. This is the same pattern that technology and innovation follow. As time progresses we retain knowledge gathered along the way and use it to build upon what already exists. This phenomenon, proclaimed by Ray Kurzweil, has been in motion since the start of time.

With such rapid momentum, a misstep can be detrimental. The amount of effort it then takes to regain traction is directly tied to how far you stray. Michael Porter, a Harvard professor and well known theorist, talks about the level of hustle that is required to stay on the upward curve of progression. Business processes must be forward thinking and fast activating to stay relevant. An immense amount of time is often spent just gathering the knowledge necessary to act. With a simple business process, the 'time to knowledge' can be trimmed down.

Ray Dalio, a well known investor and billionaire, talks about business cycles as patterned. Although these patterns can be lengthy, and might not repeat during one person's lifetime, they are cyclical. Dalio notes that even though these business cycles are repetitive, and people's collective behavior is generally similar, the environment is always different leading to varied outcomes.

Building off of Dalio's take on the cycles of the economy, Neil Degrasse Tyson, a research scientist, agrees that patterns repeat (often with varied outcomes) but we can only predict so far into the future. There comes a point beyond which we would just be guessing.

Given all of this research from academics of many different backgrounds, the theme seems to be consistent. The economy is cyclical, accurate predictions can be formed to a certain point, and it takes incredible hustle to stay on track and remain progressive. It is important to keep in mind that taking action is more impactful than time spent thinking, and the environment plays a big role in the outcome.

What happened the last two years?

It is no secret that the past two years have been tumultuous to put it mildly. Demand has reached extreme highs and prices followed suit. Starting in 2021 both the minimum and maximum price of goods reached peak levels before starting to trend back down. As prices begin to stabilize, shortages are becoming less common. Looking forward, we should be prepared for prices to drop quickly, especially in comparison to how long it took them to rise. While this will bring some relief, it is also going to create some challenges when planning, especially for inventory.



What can you count on?

Benjamin Franklin famously stated, “nothing is certain except taxes and death”. Planning for the future is difficult at best, and there isn't much that you can truly count on. That being said, there are a few things guaranteed to help shape the future of supply chains



Going forward, there will be plenty of data outlining the activities of the past two years.



Advanced digital technology and solid supply chain skills make a winning combination.



Automation and Artificial Intelligence are here to stay, and should be embraced.



Relationships are essential to success - build and maintain good relationships with suppliers, vendors, and clients.

What can't you count on?



When it comes to planning for the unknown, it is hard to count on much. It is evident that things will not stay the same as we exit the pandemic, the changes that have taken place are far too impactful. Some changes are for the better, and others not so much. Stability is gone, at least for the foreseeable future. There is no market stability, no environmental stability, and no economic stability. The current war taking place between Russia and the Ukraine is a stark reminder that geopolitical stability is also not guaranteed. Supply chains should prepare for an extended period of flux.

When developing strategies for a strong supply chain, be careful not to lean into old rules of thumb, or stagnant technology. Consider all of the rapid advancements in the world and ask yourself is this still working or is there a better way to do it? Ensure that your processes are fast enough to keep up with the rate of change. Don't count on the systems that already exist, instead look towards what's next.

One of the biggest takeaways of the past few years is that there is no assurance of part availability. Shortages can occur at any time, shipping delays can prevent parts from reaching the destination, and parts can be discontinued if demand isn't high enough. Some of the largest and seemingly most stable companies will dissolve as the lifespan of businesses continues to become shorter and shorter.

Actions to take immediately

Now that we have discussed what you can and can't count on, it is time to put an action plan in place. Start with your manufacturers - the lifeblood of your supply chain. Are your manufacturer's strapped for cash? Will they be ok if their revenue drops? Do they have any flexibility to cut spending or borrow cash? If they are in trouble will their parent company protect them or cut them loose? And in the event that they do go bankrupt, can you recover any cash or outstanding inventory from them? These are all important questions to explore.

Ideally, obtaining your manufacturers financial information would allow you to perform a resilience test on them. If you can't get this information you can still perform a risk analysis by identifying their weak points. Keep track of product quality, delivery time, and the overall operational performance. Most importantly find out where their materials come from and avoid any single source or single origin vendors, as they have no flexibility making them a liability.



A world-class supply chain



We have talked a lot about developing a plan for your supply chain to withstand the future, now let's discuss what constitutes a world-class supply chain. There are three factors that need to all be in check if you want to be considered world-class.

1. Supply base design
2. Business Practices
3. Ecosystem Factors

This is not a case where two out of three is good enough. You need to ensure that all three factors are the best they can be. A world-class supply chain means deliveries are always on time, service is cost effective, products and shipping meet or exceed expectations, and the flow is frictionless.

Best practices

Adhering to some common best practices will help guide your future planning. With all of the rules and data, it can get overwhelming quickly. Start with some simple changes to set you in the right direction. Empower your team and work on creating common and efficient business processes. Perform a technology audit to make sure you are using all of your software to its full capacity, and combine systems where you can. The more activities that can be performed on common software, the less opportunity there is for mistakes. Hire a Chief Procurement Officer (CPO) to form crucial external relationships and project manage all aspects of the supply chain.

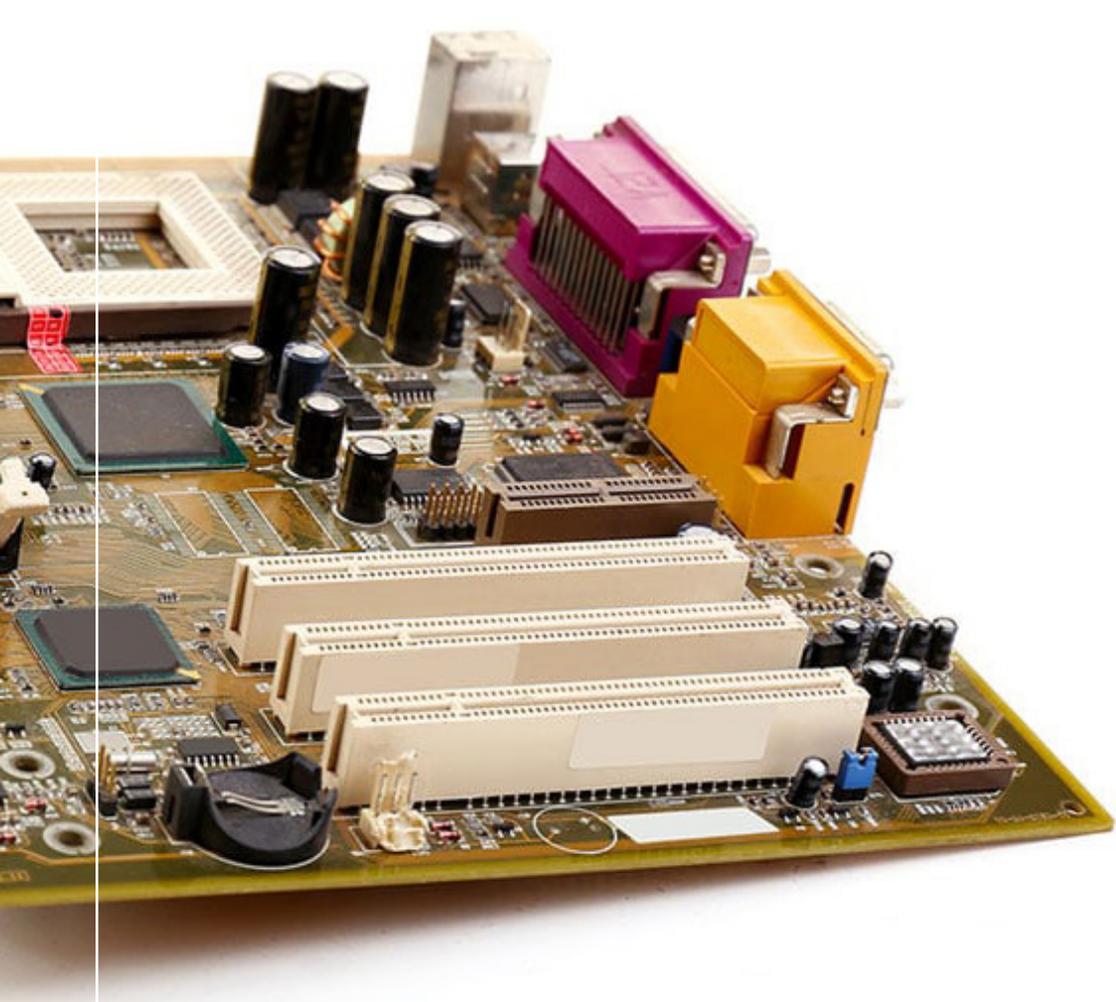
Finally, take into account some external and internal considerations that could affect the strength of your electronic component supply chain.

**Companies with CPOs
outperform those
without by**

135%

**This was derived directly from the powerpoint
(BCG 2022) Boston Consulting Group]**

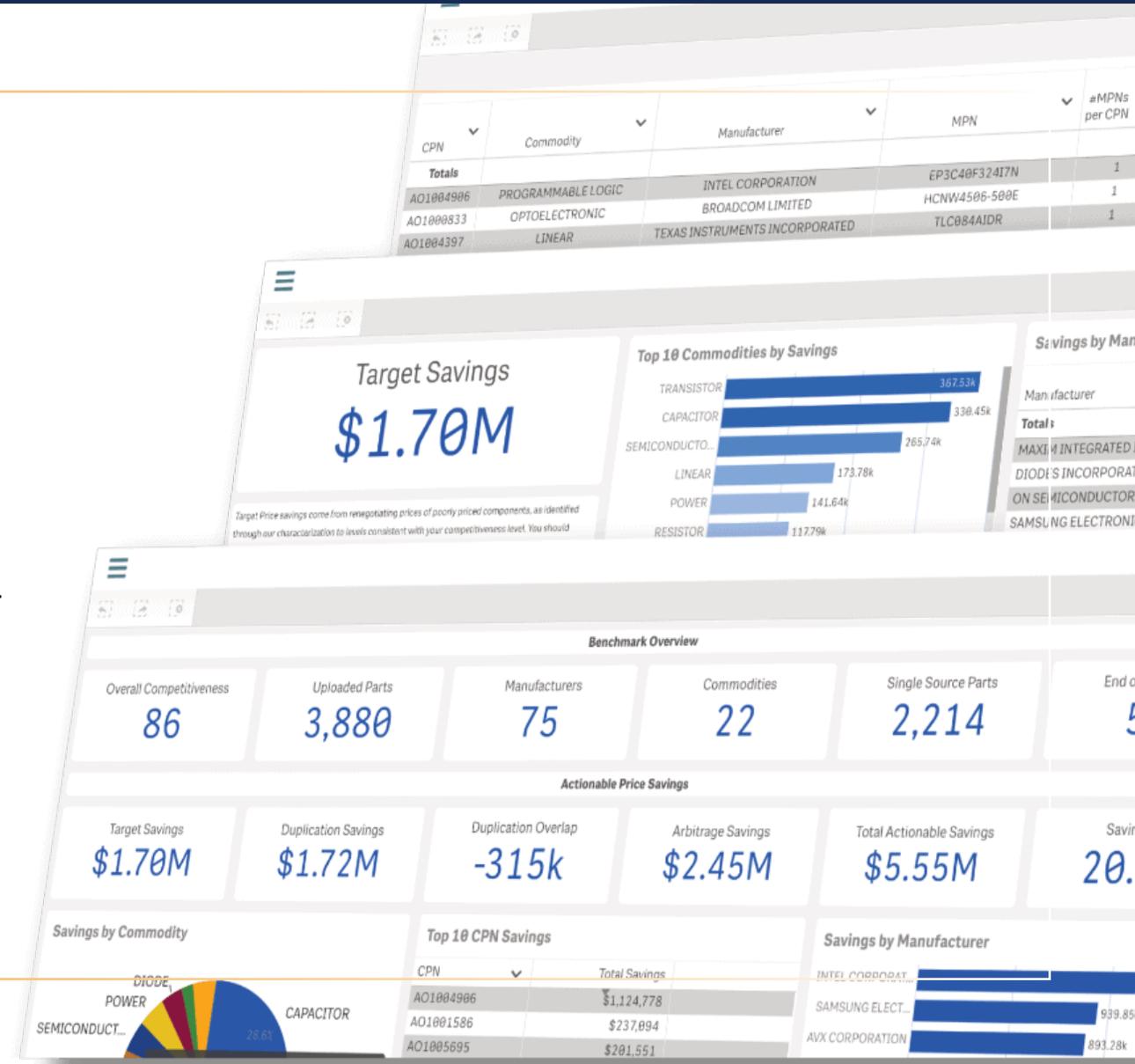
External considerations:



- Rules are important for supply base & logistics design.
 - Know exactly what you want and need.
- Design with options, don't depend on single source vendors.
- Align your design with the company's mission.
- Anticipate more semi-custom / custom components, understand the risks and benefits.
- The rapid acceleration of technology will continue.
- Monitor your external risks constantly.
- Top-tier employees must value relationships with suppliers.

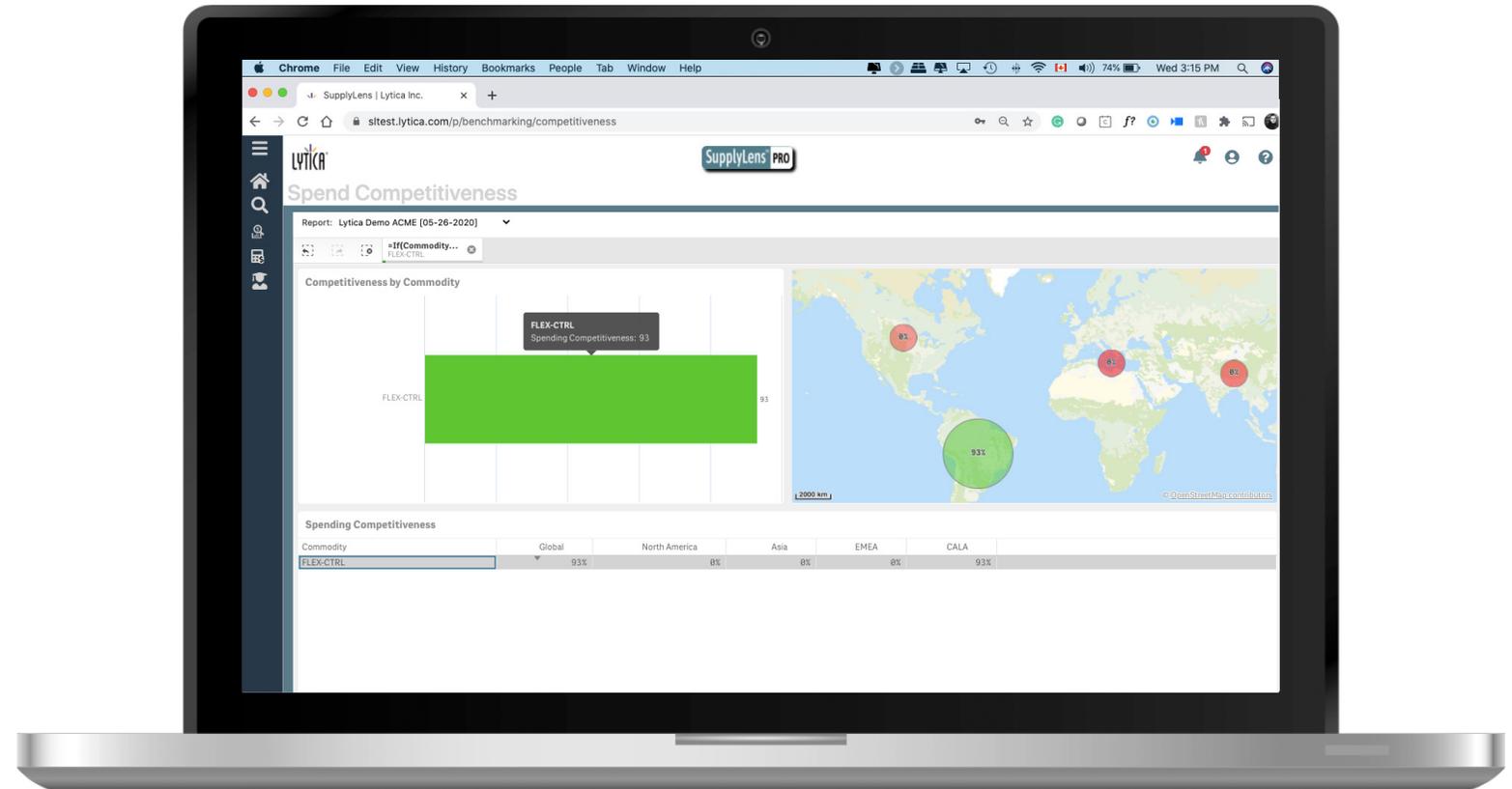
Internal considerations

- Embrace automation wherever possible.
- Take advantage of digital tools.
- Collect and use real data for decision making.
- Don't trust "list pricing" or MSRP, do your own research.
- Monitor internal risks constantly.
- Keep a pulse on the performance of your sourcing and procurement cohorts.
- Study data from winning companies and failing companies



Lytica's solution

Without a team of workers dedicated to researching and collecting data all day every day, how can you possibly keep up? Lytica was born of that same question to solve that exact challenge. The Supply Lens Pro plugin library is full of real customer data normalized and categorized for you to use. Our data is continually updated, and available instantly to help assess the risk of parts, manufacturers, and vendors. Supply Lens Pro also removes the blind trust given to MSRP and provides actual pricing data that can be studied by your team. Use the Supply Lens Pro platform to reduce your costs, mitigate risks, and create a strong, future-focused, electronic component supply chain.



Conclusion

The economy is full of unknowns and there will always be another challenge on the horizon. If the past two years have taught us anything, it is to be prepared and be agile. Diversification is imperative for a reduced margin of risk. Most of all, be open minded and dynamic. Supply chains require constant calibration and this activity should rely on real data for the strongest, most accurate outcome.

