



Defining a Sustainable
Global Electronics
Supply Chain



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Introduction

■ Defining a Sustainable Global Electronics Supply Chain

Global electronics supply chains need to be responsive and evolve to keep up with today's economic turmoil and societal changes. One of the best ways to ensure responsiveness is to utilize technologies that help manage processes and relationships. It's only then that you can operate sustainably to ensure a thriving supply chain ecosystem.

The hallmark of a sustainable global electronic supply base is the ability to acquire renewable components that function as they should – with cost, security of supply, and compliance at the forefront.



In this ebook, sustainability is defined as the ability to maintain a high performance supply chain while also being responsible for the environment and the needs of society. We offer a glimpse into creating and managing a sustainable, optimal global electronics supply base.

What are the elements of a sustainable global electronics supply chain?

Product companies always aspire to create goods with parts that they can easily and cost-effectively acquire while being sourced responsibly. They want components that lower their costs, reduce the risk to their manufacturing operation, and are sourced from suppliers that can form a solid future focused supply base. On the other hand, customers also want something straightforward — a product that does what it's supposed to do.

Engineering a global electronic supply chain that meets the needs of both the company and the customer can create a competitive edge. From a procurement perspective, this begins with understanding the key levers of a sustainable electronic supply base.

Three elements are central to a supply base design—cost, security of supply, and compliance.



The relationship between these three needs to be in balance for the specific product being produced. Cost, security of supply, and compliance take on different levels of importance and priority depending on company strategy and industry. For instance, if meeting compliance mandates is the most important aspect of procuring that electronic component, this consideration should take priority over the component's cost and security of supply.

In today's environment, creating that balance can be challenging, but it's possible with foundational business practices, access to appropriate data, and the use of appropriate tools.

 **Cost management**

Superior cost management is the result of intelligent business practices that lead to component prices that are consistent with the value received from your supplier and your status as a “must-have” customer. Additionally, while the price you pay for a component is an important part of cost management, it's critical not to overlook the inefficiencies and errors in the procurement process which reflect that pricing.

Better processes lead to better cost results and enhanced sustainability. Conversely, cumbersome processes lead to poor data quality, errors, and strained supplier relationships, resulting in higher component pricing and overhead costs.

To start the journey of understanding your products' true cost potential, you first need a high degree of confidence in your component data integrity, how your components are organized and managed, as well as how well your processes benchmark in the marketplace.

The foundation of this journey often starts with tidying up your master parts list to prevent ordering mistakes and sourcing bottlenecks. This ultimately saves you money and reduces supply chain risk.



Once you've instilled trust and organization into your supply chain data, cost management best practices require you to benchmark your pricing against the industry to identify where you have suboptimal processes that need to be resolved. If you can't diagnose it, you can't fix it.

Sustainability in the supply chain is evidenced by cost management processes where components and suppliers are well documented, accurate, and able to be confidently acted on when making purchasing decisions. Organizations seeking to implement best-in-class cost management also need to embrace the concept of benchmarking to identify where their current methods are falling short in order to optimize them.

Security of supply

Electronic components are often critical to a company's final product offering and there are several factors that impact their level of security of supply. These include the selection of the manufacturers and components used in the design, the integrity of the data used in obtaining the components, and the risks that these components will be exposed to in the supply chain as it operates.



Selection of manufacturers and components

There are important considerations to keep in mind when selecting manufacturers and components for a sustainable supply base that will serve you well in your design. For example, for multi-source components, you should seek at least three independent sources of supply for each component that are not part of the same parent company or are not rebranded and sold by one of your other manufacturers.

For sole source components, you should make sure that you have several suppliers from which you can buy these components and that you're not registered by one of the manufacturer's distributors. Registration will restrict you from getting a better price from another supplier, locking you in to accept the registered supplier's price.

Finally, the area of product design and product roadmap is a critical one in supply base design. Product designers should not be allowed to select unapproved suppliers without purchasing involvement. That being said, designers should build solid relationships with key manufacturers so that they get easy access to the latest component innovations. These key manufacturers should also be willing to take on some development responsibilities to make a more superior designed product. That could mean giving early access to technology, providing free samples, or doing R&D on your behalf.



Integrity of the data used in obtaining components

All companies have some level of quality issues in their component data. Companies with high-quality data often perform better than their competition in acquiring components and for better prices. Efforts must be put into the business process of managing component data so that it is clean and accurate.

As Lytica works with many client files, we see all kinds of issues impacting component data management:

1. Companies that have gone through multiple acquisitions often end up with various client names for the same components.
2. Companies with out-of-date information because of changes in lifecycle status or name changes of the manufacturing companies brought about through events such as mergers.
3. Keystroke errors or misspellings of Manufacturer Part Numbers (MPN). For example, certain characters inadvertently get changed, such as a “B” changing to an 8 or a 5 becoming an “S.”



The bottom line is that dirty data causes problems that can manifest as security of supply issues, higher costs, or noncompliance in critical situations. Component data should be reviewed and cleansed periodically. With Lytica reports, we provide feedback on your uploaded files and a data quality summary. This is useful in determining whether or not action is required to improve data integrity.

Risks to the supply chain

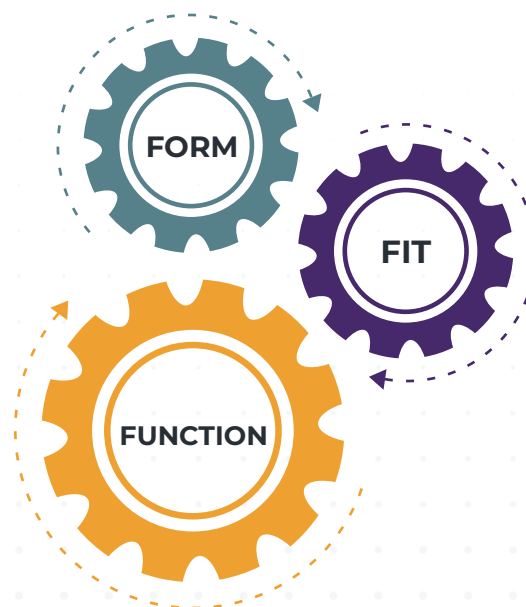
There are many risks to managing an effective and sustainable supply chain. Climate, geopolitical events, logistics disruptions, bankruptcies, and, most recently, pandemics are but a few. The best way to protect yourself against risk to the supply chain is through thorough due diligence on companies you're dealing with, along with understanding the key ingredients needed to manufacture the components.

Many of the actions required to be completely safe can be highly complex and expensive, but some can more easily be implemented to mitigate risk.

Here are a few practices you can implement to easily avoid the risk of supply and reputational exposure:

1. Selecting alternate source manufacturers that have geographic separation and country of origin differences
2. Consider having suppliers hold safety stock for you on high-risk components
3. Asking manufacturers for copies of their business continuity plans
4. Tracking component price and availability trends
5. Simulating geopolitical and geographic events and their impact on your supply chain and then monitoring the situations for occurrence. Develop a mitigation plan based on the simulation results.

If you know a **component's form, fit, and function**, Lytica can help you find an alternative or exact replacement. For example, suppose a part in your Approved Vendors List (AVL) meets component specifications, design requirements, and has been approved for use in the product. In that case, Lytica's platform can recommend other options that are drop-in replacements—answering the ultimate question, which parts can fit the need?





Compliance

Electronic supply chain sustainability means understanding the market you're in—that you're part of a larger ecosystem and not just operating as a single entity. Compliance issues come in various forms, from product design requirements to cyber security, government regulations, and ethical trade practices.

For components, those selected must meet all the requirements of the product and the marketplace in which your product will be sold, as well as have certifications supporting their sustainability and compliance claims. Adopting ethical sourcing practices, for instance, means you have ensured products are manufactured by legal workers who work in safe environments, get fair wages, and are treated well. For manufacturers, it's important to work with a vetted set of companies that have demonstrated practices to meet environmental and societal sustainability expectations.

Don't wait until your business is required to prove compliance. A global health crisis is one of many examples of how non-compliant companies can create unnecessary delays when found to be non-compliant. When compliance is a forethought, you can rest assured that parts of the supply chain are in good standing.

Where do companies often fall short in supply chain sustainability?

The COVID-19 pandemic put a heavy focus on *inventory availability*. As shortages abated, manufacturers were left with billions of dollars in unsold goods, causing inventory-to-sales ratios to surge until they could liquidate these inventories. As the economy shifted from shortages towards recession with unclear demand, businesses struggled to bring inventories and prices back to new normal levels, complicating an inventory-to-sales ratios balance. In short, a pandemic turned many supply chains into chaos, and procurement teams were left in a desperate situation.



Lack of Resources



Lack of Transparency



Mergers & Acquisitions

Why did this happen? And why has this sort of thing happened in prior disruptive environments?



Lack of Resources

Some companies simply didn't have the data, tools, and reports to know their risks and how they fell short. Disconnected information, outdated processes, and legacy systems all contributed.

Today, companies with limited resources must balance their inventory, deal with rapid fluctuations in the costs for parts, overcome disruption, and strengthen their Approved Vendors List (AVL) with stronger and more secure manufacturers.



Lack of Transparency

All companies have some poorly priced components and variations in their price performance across commodities. Why is it that many companies believe their material costs are competitive when they lack confirmation through data?

When companies benchmark themselves with component pricing data that's consistently trusted, they make significant gains in cost, security of supply, and compliance. Often times, this is not the case and organizations are left in the dark.



Mergers & Acquisitions

Mergers and acquisitions can impact your supply base in various ways – whether the M&A pertains to two of your suppliers merging or your organization is merging with another.

First, the merging of suppliers carries the risk of discontinued product lines and disruption caused by changes to the manufacturers' names or brand names. This creates a significant problem for most companies in keeping their component data system accurate and up-to-date.

The changing of the guard that occurs when your company is merging with another can also cause complications. In such instances, there are often rationalizations of organizations, alignment of business processes, and selections of tools and classification systems for component management. For example, problems frequently arise post-merger when one company has labeled a part one way and the other in another way. Most likely, these companies also had vastly different business processes, favored relationships with suppliers, and differing suppliers for many components.

A newly merged company is often in desperate need of actionable insight at a component and supplier level to efficiently streamline procurement and determine how they should manage components and inventory in a way that will drive better savings opportunities while considering risk.

How can Lytica products help solve supply base sustainability?

Lytica's products help solve supply base sustainability challenges by assessing an organization's business process performance from the perspective of cost, security of supply, and compliance. Through benchmarking, sourcing recommendations, and price guidance, customers gain a new perspective on their business process performance and variation - therefore creating a more robust and sustainable supply chain.



Spend
Benchmarking



Price
Estimator



Spend Benchmarking

Spend Benchmarking draws on the world's largest and only independent database of millions of electronic components and their real-world prices paid by actual customers. By securely uploading electronic component spend data, you receive an industry benchmark and comprehensive spend and risk analysis with negotiating advice at the part number level.



With Lytica's Spend Benchmarking, clients benefit from:

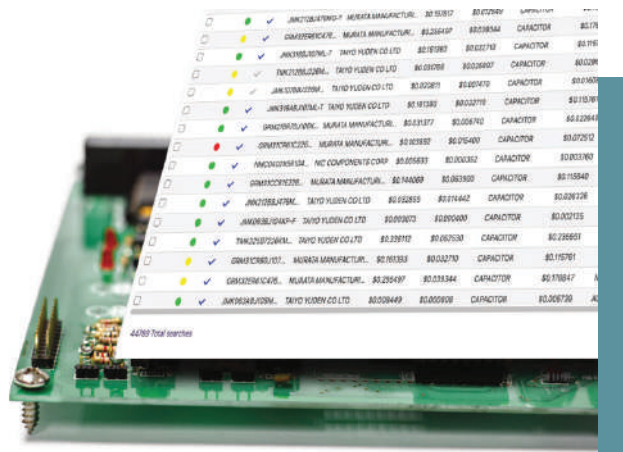
- Identifying areas of variation in your business process and areas of unnecessary component exposure
- Pinpointing the best savings opportunities and risk intelligence to better understand suppliers and manufacturers
- De-risking of components and bill of materials by finding alternatives for use in your products
- A benchmarked price competitiveness score to tell you exactly how you're performing relative to the market
- Locating second-source alternatives

**Don't worry, Lytica takes the security and confidentiality of client data very seriously. No customer data is ever released, revealed, or sold. The data received is used only in aggregate. Learn more about our Data Information & Security [here](#).*

Price Estimator

Price Estimator is similar to Spend Benchmarking and also based on real-world customer data but uses a queried search.

When using Lytica's Price Estimator capability, you simply enter a Manufacturer Part Number (MPN) and retrieve market pricing on that electronic component. You no longer have to search for a component and wonder what the price would be if you were market-leading.



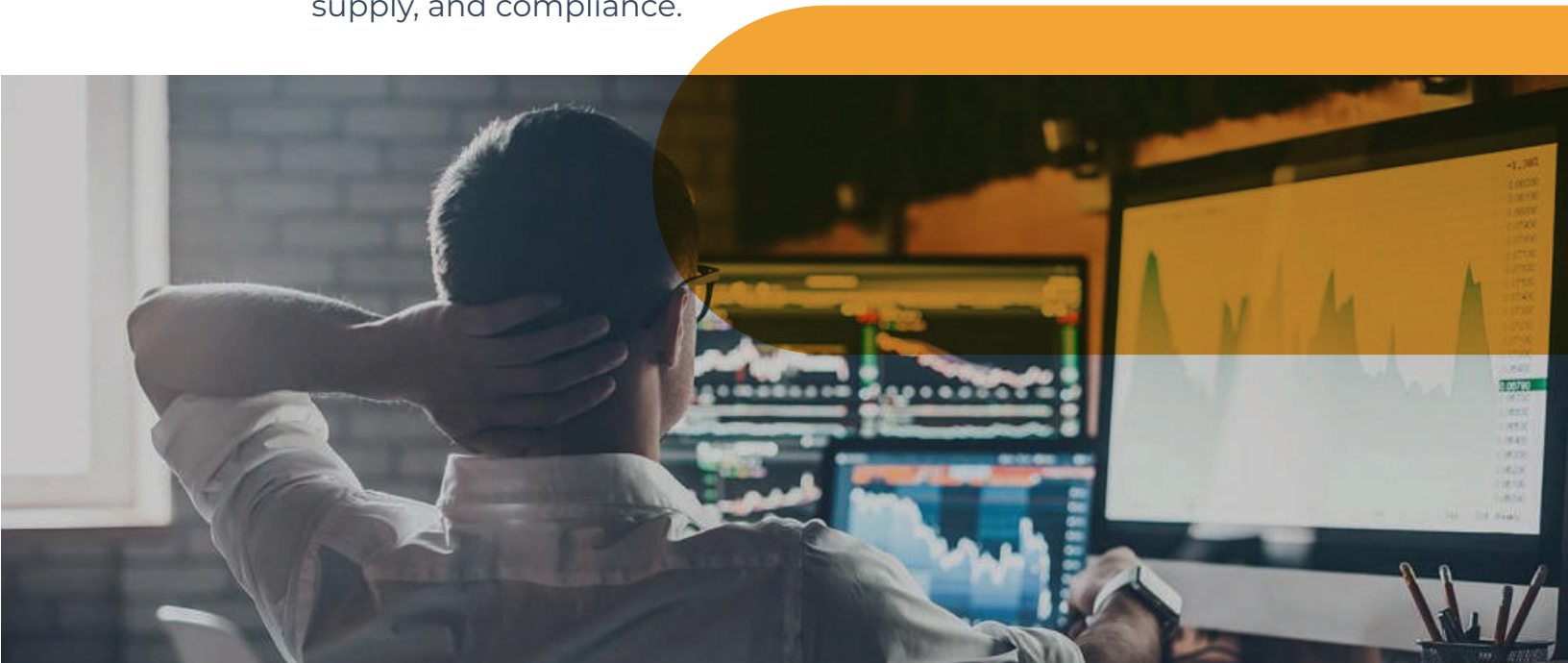
Instead, Price Estimator unlocks that information for you, making you more confident leading up to the next negotiation.

With Lytica's Price Estimator plug-in, clients benefit from insight into:

- ⦿ Average and market-leading price by MPN
- ⦿ Competitiveness level pricing by MPN
- ⦿ Overall risk assessment
- ⦿ Up to 5 alternatives per MPN
- ⦿ Real-time pricing and risk notifications
- ⦿ Shared projects & community view
- ⦿ Achieved price tracking

Embracing automation for a sustainable electronic global supply chain

Creating a sustainable global electronic supply chain is both very challenging and unique to every organization. Foundationally, procurement teams need to ensure they are clear as to their strategic objectives and KPIs, then create business processes that optimize the organization along the dimensions of cost management, security of supply, and compliance.



In undertaking this endeavor, businesses need to turn to technology to eliminate the prevalent shortcomings associated with benchmarking their current processes and ensuring they have high-quality data to succeed in cost reduction, risk mitigation, and compliance initiatives. By doing so, they'll not only accomplish their objectives but do so in a manner that's cost-effective and agile in order to respond to ever-changing demands.