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**What
You Need to
Know**



MAGAZINE EXCERPT:
Risk Mitigation: An Essential Guide
by APCT Global



Risk Mitigation: An Essential Guide

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Want the real truth about global risk? Not only is it more real than ever before, but it is rising because of a nearly infinite number of variables. The consequences can be more devastating—in one blow—than ever before. The traditional economic focus on quarterly reporting complicates maintaining a long-term vision and further complicates investment in risk identification, planning, and, thus, mitigation.

Risk mitigation in the global supply chain is nothing new to many industries. What is new, however, is the exponential rise in potential risks and the reality that those are risks that simply cannot be predicted. What are some factors for a winning strategy that might not immediately come to mind? Here are a few essential recommendations to the global PCB industry that might significantly lower the risk impact on a company's productivity, time to market, and financial success.

Ask Questions Early and Often

Unasked questions introduce many risks that could have been identified early and then accounted for in the mitigation plan. No lon-

ger is it the case that you wait until there is an issue or major problem to ask a question.

Some engineers who work for companies may feel isolated; that is, they have a problem, but they don't know how or where to start solving it. You should work with a supplier, for example, whom you can ask to confirm or clarify questions that may lead to new options for reducing costs and risks. You should have a partner to contact whom you do not hesitate to call, where your call is welcome and responded to in a timely fashion. In fact, an experienced PCB manufacturer should be proactive, offering to answer questions you haven't even asked.

The Elephant in the Room

If you were to survey hundreds of thousands of companies about what they would predict, or have experienced as, the biggest risk in their global supply chain, some answers might align. In general, however, every company has unique products, technical challenges, timeframes, and delivery and transportation requirements.

The elephant in the room is simply this: The biggest risk a company faces is the need for unique solutions to address its specific situations.

Companies today simply do not have the funding or the time to hire personnel who are experts in the technical, support, and logistical details of the global supply chain. For that, a partner and an expert with whom to collaborate is necessary. By not partnering with an expert team that can provide a 360-degree view of their specific landscape of needs, product teams could introduce a plethora of unknown risks and, almost certainly, neglect to include risk mitigation planning.

The Right Fit

Companies are looking to maximize their spending by using their current supply chain. Sometimes, they will force lower-end technology into a higher-end facility, so their price point will increase significantly. At other times, companies will go to a lower-technology facility to manufacture their higher-end technology; the result will be yield fallout. By working with a global team, the company can make sure they put the right technology in the right factory to achieve the best cost and technology solution.

These diverse manufacturer relationships ultimately provide customers with a win-win scenario. If you can focus on placing the proper technology into the right factory to maximize your yield and timeliness, then you will get the best solution at the lowest possible cost. From a risk perspective, both financial and timely delivery are addressed successfully.

Now More than Ever

The global supply chain should partner with the finance department of client companies to use the companies' resources most effectively. It's not just about cost-cutting anymore; it's about services and long-term planning. The risk mitigation inherent in choosing the right PCB supplier can significantly affect a company's financial risk.

The goal is to get time to market before your competition. Companies are looking to produce prototypes so that they can demonstrate their product's capabilities. Once the customers know what the product and the companies can do, then they can launch into production.

As the world has changed and evolved—everyone is on their cellphone or computer most of the day—we all have access to the latest and greatest of anything that comes to mind and being developed and brought to market. Any company that is looking for a time-to-market solution should also be invested in risk identification and mitigation, as well as what financial risk they face if their supply chain is disrupted.

Another financial risk strategy is to work with a supplier who offers inventory management programs. Not only do many suppliers offer program management and inventory projection analysis, but—as a prime example—many PCB manufacturers are striving to transform a custom PCB into an off-the-shelf commodity, like any other component in a build. They also offer quick transit time to the customer's door in as little as one day.

The Real Deal

There are hundreds of PCB manufacturers to choose from; standalone factories around the world can produce any number of technologies and volumes. There are brokers, essentially acting like middlemen, who do not produce PCBs but who represent manufacturers. And there are hybrids, manufacturers who engineer and specialize in product areas, yet also work with factories around the world.

Which is the best choice to reduce risk throughout a product's lifecycle? Ideally, one that offers you the most comprehensive solution to your specific needs.

Does your company have enough funding or time to qualify manufacturing facilities in different regions of the world? If you visit a facility one time, do you have the time and budget to visit quarterly or annually? Is there available staff to extend the workday to other global time zones? Could your on-site staff globally oversee the production and proactively work with the facility in real-time? These are just a few areas of potential risk reduction. Some of those burdens and risk issues can be alleviated by working with a company that has manufacturing, engineering, and full-service staff.

Huge risk factors are inherent in segmented

engineering staff, both in terms of recipe transfer and real-time production engineering attention. Some companies have an engineering team work on the prototype or first run, and then transfer to another group specializing in volume production engineering. To reduce risk throughout the product lifecycle and real-time build activities, ideally, the same engineering team would never leave that product, would understand all the engineering details, and would know exactly how the transition to production should go, and then that same team would do all the tasks involved. Taking it one step further, after the first-run prototype is approved, the manufacturer should ensure a full recipe transfer for the customer company into their next production build in the life cycle. This would allow them to work on their next project and program.

Manufacturers that invest the time to get an upfront intake profile to better understand customer needs can then create a custom program that suits those needs. This will reduce additional time and concerns of customers, and provide a solution that offers both peace of mind and risk mitigation.

Speed-on HyperDrive

"We need five panels in 24 hours, and we'll need 1,000 pieces in two weeks. Then, we'll move 10,000 pieces in four weeks and do a 100,000-piece product ramp-up after that."

Can product concept to market at volume get any faster? Yes. It will. And along with increased speed comes greater risk. How a manufacturer can put into place such a fast-transitioning program—and what they do to ensure recipe transfer, complete Q&A, AQL sampling, and spot-on delivery time—are just a sample of the basics of a risk analysis. Smart companies insist on working with manufacturers who have a significant history of success in ramping in multiple stages, apparently simultaneously.

Competitive Risk

In other industries, specifically ecommerce, conversations in the PCB industry between buyers and suppliers have shifted to include

fostering collaboration that will spur innovation. This particular supplier relationship brings tremendous value that fuels a company's growth. As technologies and DFM innovations are skyrocketing, a PCB may play an integral and valued part of a company's success.

Who Is Kept Up at Night Worrying About Risk Mitigation?

You would think that just one person is concerned about risk mitigation: the company CEO. In all practicality, though, within the last year or two, everyone in a company structure seems more than mindful of the risks and "situations" that have impacted their role within their company.

A completed PCB is the foundation of the product. If you don't have one, you don't have a product. You won't be able to populate it, put it into your final product, or, ultimately, ship it to your customer. PCB risk mitigation is very important to the CEO, your finance team, your engineers, program managers, your quality and procurement teams, and people in the supply chain. Ultimately, it is the person who's focused on getting the product out the door who must know how to take a deep dive into effective, risk-reducing supplier relationships.

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When You Only Hear Crickets

Then, you have a problem. PCB companies are very aggressive in marketing and reaching out directly. A quick way to rule out providers who may offer you a low price, but will ultimately expose you to significant risks that can contribute to real losses, is to follow this process. When you evaluate a new supplier, ask to schedule a site visit that will help you determine whether they are a fabricator or a broker.

Is their technology competency real, and is it a match for your company? Quiz them on a few typical risk scenarios and evaluate the quality and depth of their answers. What you want to avoid is a PCB supplier who just takes an order and a commission, but is not able to help when, inevitably, “things happen.” Work with a company that meets your technical, support, and risk profile. Most companies will value having peace of mind knowing that their PCB manufacturer has their back.

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Just in Time

A significant risk, financially as well as to the brand reputation of a company, involves supplying the product when it is needed. As design and manufacturing cycles continue to concatenate, significant risks are introduced into the transportation strategy. There are several ways to mitigate these risks.

It is essential to work with a supplier who has experience in planning or rapidly responding to transportation disruptions. There are many transportation options, such as air and ocean, and smaller shipments at regular intervals, with larger shipments to follow as next-step manufacturing ramps up. Pre-existing, dependable relationships with multiple carriers reduce delivery risk situations. And it goes without saying that crisis mode may not be the wisest time to start developing a new relationship on your own. Here's one example:

“Near Thanksgiving, a company needed product brought in from Asia. They had planned to have a couple of thousand pieces delivered. Based on customs being closed for the Thanksgiving holiday, and when it was going to be shipped, it wasn't going to arrive

at the customer until the week after the holiday. When the customer brought that concern to our attention, we confirmed that they needed five pieces to make the build for their end customer. Since this was a smaller production lot, we were able to get those completed and shipped out earlier, clearing customs before they closed for the holiday weekend. The company was able to complete their product, deliver it before the holiday break, enjoy their holiday, and avoided having to pull a team in and pay them holiday overtime.”

It is ideal to work with an experienced supplier. If you suddenly find yourself in a bind, you want to choose to work with a team whose prime focus is real communication. Their goal and focus should be to provide you with a complete solution. Having clearly assessed the details of your situation, they will look for solutions to mitigate all risks.

Future Trends

Several new industries coming into the marketplace are new to the PCB industry, the global supply chain, and their risks. These industries—such as autonomous vehicles, 5G networking, as well as industrial applications, such as smart pools and lighting—will offer PCB manufacturers new growth opportunities and new technology solutions to develop with them. Yet, when investing in understanding the risks and mitigating them quickly and successfully, clients should look to a complete solution provider to underscore the extreme growth and technical response required. **SMT007**



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