

Strategic Material Management Generates Value

When designing innovative products, material concerns often take a backseat to user experience goals. This is natural – after all, good products that offer value to end-users are essentially guaranteed a place on the modern tech marketplace. However, material management concerns take priority when considering the cost and turnaround time of product manufacture.

Whether designing retail electronics or heavy industrial machinery, clients always want cheaper prices whenever possible. Effective material management is the best way to lower prices without compromising the quality of the resulting product.

Material Screening Increases Unit Reliability

One of the major obstacles that printed circuit board manufacturers run into is finding inexpensive sources for high quality components and materials. The material used to create a printed circuit board is extremely important – brittle, poor quality board substrate can crack during assembly, ruining entire batches of PCBs.

Responsible prototyping firms have dedicated purchasing departments look for reliable indicators of quality when sourcing components, and prioritizes the most efficient option each time.

Here are some of the factors we take into consideration when sourcing printed circuit board substrate:

Glass Transition Temperature

A high transition temperature protects the resulting PCB from barrel cracking. It also protects against pad fracture during soldering.

Coefficient of Thermal Expansion

Certain assembly processes expose boards' wiring assemblies to temperature shocks. Materials that expand in response to heat may generate defects or other problems after manufacture. This is a particular problem when PCB designers use multiple dual-layer substrates – each one can expand at a slightly different rate, inducing uneven levels of stress.

Dissipation Factor

The tendency of an insulating material to absorb arc energy from an electromagnetic field passing through it. This value should be low for circuit boards designed for radio wave applications.

By carefully screening source materials through these and other factors, we're able to guarantee the quality of the resulting boards.

Efficient Sourcing Reduces Unit Cost

With clear and objective criteria for the materials we use, our purchasing department has a free hand to find the least expensive avenues for procuring those materials.

Only by taking logistics and economy of scale into account can reputable PCB prototyping firms calculate the total unit price of each PCB with precision. This way, the company can make informed decisions about which supplier offers it – and by extension, its clients – the best possible price.

Where most PCB assemblers go wrong is treating procurement as a tactical process rather than a strategic one. Many PCB companies in our industry under-optimize their supply chain because they source components and materials on an as-needed basis.

The correct way doing things is more strategic – firms that predict future needs for certain materials based on work history and track record enjoy lower procurement costs. That data allows them to craft procurement strategies that keeps inventories well stocked for future orders, decreasing prices and turnaround times across the board.

[Power Design Services](#) is a printed circuit board manufacturer based in San Jose, CA. We design, build, and assemble prototype PCBs for clients in a wide variety of industries, from wearable tech to heavy machinery. Get a quote on your assembly project today!

Meta Information

Focus Keyword(s): Material Management

Meta Keywords: Printed circuit boards, PCBs, retail electronics, sourcing, logistics, procurement

Meta Title: Strategic Material Management Generates Value

Meta Description: Low prices do not always equal low quality. Efficient material management produces significant savings for Power Design Services clients – find out more in this article.

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