

# Choice Solutions

by **Karla Osorno**

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Electronics are the lifeblood of modern society ([SMT Magazine, December 2012](#)). But if you want to make products that depend on this lifeblood to function, then you face a lot of challenges. Often, you need to work with different partners for design, prototyping, and manufacturing of electronic assemblies—all of which slows your time to market. If you have to send your manufacturing operations to the Far East to keep them cost-competitive, it complicates your logistics and also puts you at risk for suffering losses through foreign counterfeiting. And changing manufacturers can quickly get prohibitively complicated and expensive. As an OEM, understanding these challenges will help you to navigate through them and choose the right partner.

## Different Partners

OEMs looking to outsource manufacturing to EMS providers do so for financial and logistical reasons. They are looking for a partner to take

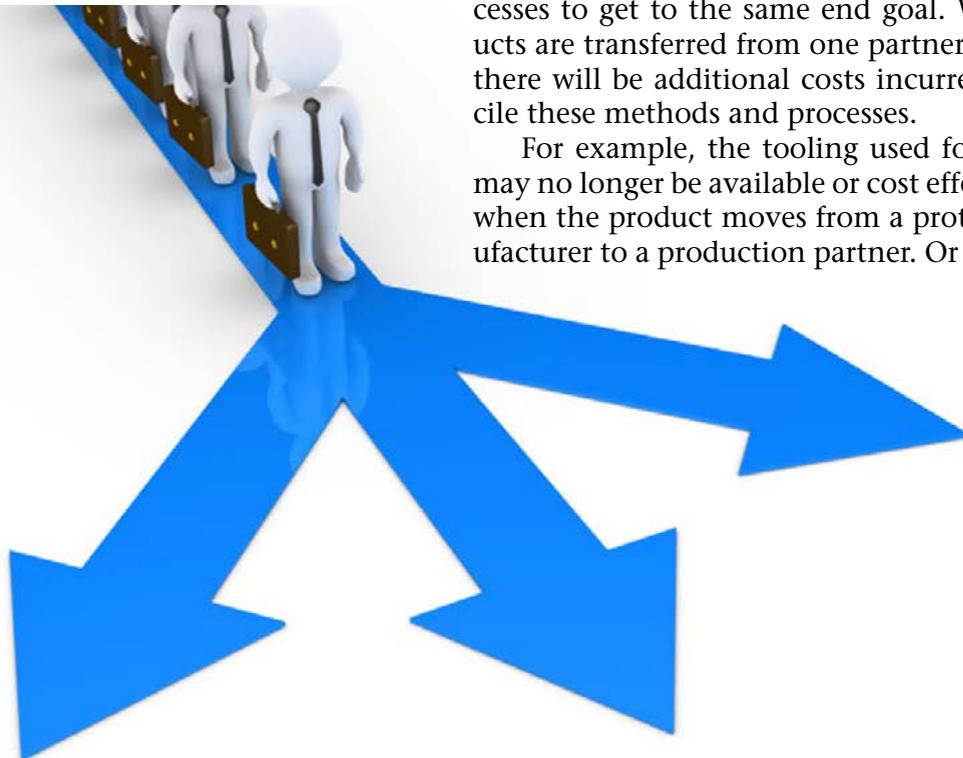
over the daily management and activities of manufacturing operations.

Many OEMs choose to focus on their core competencies and outsource design, prototyping and manufacturing of electronic assemblies. If the OEM has to outsource to three different partners—one for design, one for prototyping, and one for manufacturing—then it becomes more challenging. Now you are dealing with three different teams with different management, policies, and capabilities.

Another major factor is the costs related to transferring from design to prototyping and from prototyping to manufacturing. Some of these costs relate to tooling, manufacturability design changes, documentation and communication. Adding to the challenge, many are duplicate costs, meaning the OEM pays for each partner who incurs the costs and builds it in to overhead rates or direct bills the OEM.

Each partner has unique methods and processes to get to the same end goal. When products are transferred from one partner to another, there will be additional costs incurred to reconcile these methods and processes.

For example, the tooling used for a product may no longer be available or cost effective to use when the product moves from a prototype manufacturer to a production partner. Or it may have



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been developed for small runs rather than for long-term use. Or it may be heavy and impractical to transfer the tooling to the new partner.

There will also likely be design improvements based on manufacturability that may not make it back to the original customer documentation. The changes may be customer approved and updated at the contract manufacturer location, but due to cost and organizational restraints, the customer chooses not to update the original documentation. Thus, the prior revisions that are no longer current get sent to the new partner. This is unfortunate and costly since the OEM paid for the changes and will ultimately pay again.

Verbal instructions and internal manufacturing documents would not be transferred either. So the new partner must learn from production experience the same lessons learned by the previous manufacturer—and the OEM has again paid twice for the same information.

Communication methods and styles are developed during regular communications between OEM and its partners. When partners change then this communication has to be developed between the OEM and the new partner. Again, the duplication of costs will often show up in additional time and production delays.

This duplication of effort has a price and the OEM ultimately has to pay it.

**Offshoring**

Some products are perfect candidates for sending offshore to be manufactured in low cost regions of the world. OEMs that make this decision have typically counted the cost and determined that offshore is the best option. However, this practice carries risks and often uncalculated qualitative costs.

Logistics get significantly more complicated when the product is being manufactured overseas. Many factors including language, time zones, culture, communication styles, communication barriers, and transit times add to the complexity and therefore, the costs.

Collaboration is a challenge because of geographic distances and time zones. The size and weight of the product is a major factor in both shipping methods and costs. Access to raw materials is another consideration. And cost advan-

tages have to be enough to offset slower delivery times and less responsiveness.

Risks of counterfeiting also exist. Management oversight to help protect intellectual property is more challenging with overseas production. And protection of proprietary designs takes on a whole new meaning when dealing with another country and its unique and foreign legal systems.

Some OEM companies are choosing to re-shore their products to avoid this challenge ([SMT Magazine, May 2013](#)). Definitely, choosing the right partner can minimize the risks and costs associated with offshoring.

**Changing Manufacturers**

Mistakes will happen. However, when complete breakdowns in controls, communication, or results occur then drastic action is needed. The partnership is not going well and it is necessary to make a change. This change may be qualifying a second source or it may mean completely changing to a new supplier. The challenges of changing manufacturers to an OEM will be similar to the challenges of having different partners, but significantly magnified.

Costs related to tooling, design for manufacturability changes, documentation and communication will be incurred. Additionally, there will be other challenges including maintaining production during the transition. Customers still need to be served regardless of supply chain issues.

Some other challenges include making decisions about the timing of the transition and about the number of products to transfer. Many factors will impact this decision. Definitely the severity of the quality issues from the previous partner will have the largest impact. The options and timing for qualifying a new supplier have a large impact also.

When possible, OEMs will want to transfer small runs of the most critical products to the new partner after qualification has been finalized. When these specific final products are deemed qualified, more production can be transferred. At times, multiple products will be transferred at the same time. Generally, there is a schedule of product transfer created and communicated to the new partner.

The previous partner may or may not be told of the schedule depending on whether the communication will be detrimental to product deliveries. If the manufacturer is aware that they are losing the business they may cut ties and leave the OEM in a critical position. This assessment must be made and is an example of an OEM challenge when changing manufacturers.

### Solutions

If you really want to achieve quick time to market you need a partner with extensive manufacturing capacity who you can also turn to for custom design expertise as well as turn-key product development that is based on your specifications. A single integrated design engineering and manufacturing partner you can depend on for high-quality, cost-effective and on-time product delivery. OEMs want to choose a proven and experienced partner to minimize these challenges.

One solution is to choose an industry-leading electronics manufacturing and development firm that specializes in full-service circuit board

design and assembly for your segment. Choose a company that provides the strictest process and quality controls. Choose a company that offers in-house engineering and prototyping services, which will drastically reduce your development time and expense. Choose a company with extensive experience helping you switch manufacturers. In fact, choose a company that can handle most all the details for rapidly transitioning multiple product lines so you can quickly optimize all of your manufacturing operations to reduce costs and improve quality. Choose the company that offers solutions instead of more problems. Whatever you do, choose well. **SMT**



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## Video Interview

### Aegis Introduces FactoryLogix System

by *Real Time with...*  
IPC APEX EXPO 2013



Aegis CEO Jason Spera discusses ways their FactoryLogix system helps manufacturers speed NPI, improve material flow, and address increased regulatory requirements. Additionally, he discusses the ability of FactoryLogix to support system-level as well as PCBA-level assembly.



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