

# Solving the Outsourcing Equation

By: Chris Coghlin

Hidden costs and emotional ties can cloud a company's perspective on offshoring.

## GUIDE TO OUTSOURCING

Increased globalization and a suffering economy are tightening the screws on domestic manufacturers that must push the envelope to stay competitive and cut costs. In response to these pressures, companies frequently consider offshoring and domestic contract manufacturing. It would be disingenuous to suggest that it is easy to choose between these options—both methods offer appealing elements as well as drawbacks. The following discussion illuminates some issues that OEMs should prioritize when wrestling with their outsourcing options.

### Clearing Up the Terminology

First, it is necessary to define the terms used in this article. Although outsourcing and offshoring are often used interchangeably, they do not mean the same thing. *Outsourcing* is a blanket term broadly referring to the act of receiving goods or services from a contracted partner or supplier. *Offshoring* specifically refers to receiving goods or services from a contracted partner based in another country. For the purpose of this article, the terms *domestic outsourcing* and *offshoring* will be used. Note that offshoring is used to refer to any use of a supplier in another country—not just a supplier located across an ocean. For example, U.S. firms contracting with a firm in Mexico or Canada would meet this definition of offshoring.

Both domestic outsourcing and offshoring could influence strong business outcomes or, conversely, they could increase risk and negatively affect results. But this is where the similarity ends. To understand the differences between the options, it is useful to examine them from three angles: cost, chains (as in supply and delivery), and trust.

### Visible and Invisible Costs

A few years ago, an article in *Reliable Plant* pointed to the fact that “an hour of labor and benefits in Mexico may cost \$1.50–\$3. The same hour in an area of interior China may cost less than 15 cents. While rates vary widely across the United States, even a minimum-wage contract worker costs 60 times as much.”<sup>1</sup> For many decision makers or boards, such simple math makes the offshoring decision a no-brainer. Although there's no denying such compelling numbers, hidden factors can make it difficult to correctly calculate the advantages of offshoring.

Companies on the verge of outsourcing a project often fall into the trap of choosing a contract manufacturing partner based solely on the price per unit—whether that unit is an hourly wage per worker or the cost associated with producing one product. But price per unit is rarely figured in the same way for two different companies. Nor will contract manufacturers figure their costs in the same manner. If any step or cost related to bringing a product to market has been omitted, downstream challenges could result in missed market opportunity, poor product quality, lower performance, brand damage, and high field-service costs. Additionally, the whole chain of costs alters with production-volume changes. Any of these factors could severely affect cost and eclipse benefits from low hourly wages.

An example of this occurred recently when an electronics OEM reacted to the economic downturn and flagging demand by moving its volume machine production to a low-cost region. While demand remained relatively stable, the company realized a significant cost reduction from manufacture in the new location. However, when business conditions further declined and production volume dropped significantly, the offshore contract manufacturer demanded a significant per-unit-price increase. Domestic outsourcing services offered flexibility that could not be matched by the offshore partner, and the OEM returned a percentage of its business to domestic manufacturing—ultimately a positive move, but a circuitous way to get there.

## **Jobs: The Hardest Cut to Make**

In a difficult economy, all managers and business owners feel a particularly keen responsibility to employees and their families, as well as a desire to keep jobs in the United States—if not within the company. While maintaining their fiduciary responsibilities to owners (whether stockholders or relatives), OEMs want to do what they can to keep jobs at home. Yet, during the growth phases of many companies, skills and processes are brought in-house that don't necessarily add value to the business's core competencies.

Outsourcing, whether domestic or offshore, can offer a way for companies to return to their core businesses. But what does this have to do with jobs? By using outsourcing partners with a well-developed supply chain, many companies ultimately find themselves in a stronger financial standing. They reduce inefficiencies in areas in which they did not have much expertise to start with, and they find themselves able to grow the core of their business. This leads to a more competitive position and better growth potential in the market. While initial job losses can be difficult, they can eventually reinvigorate a company.

For example, one device company decided to outsource all manufacturing and warehousing, including supply-chain management, assembly, test validation, burn-in, and worldwide fulfillment. Among other savings, the company eliminated approximately 15,000 sq ft of expensive warehouse space. Productivity gains followed, in part because the company was able to place single blanket orders from a single contract manufacturing partner rather than managing the hundreds of orders and suppliers it had dealt with in the past.

The company also saw an improvement in its internal processes and a dramatic improvement in company morale. In this example, outsourcing domestically enabled the company to make up some of the job losses while providing increased business to a domestic contract manufacturer. Even if offshoring, the company would still have benefited by its return to core capabilities and a refreshed ability to grow.

## **The Chain Gang**

Whether warehousing or managing production, hourly wages, and price-per-unit, the “cost is king” cliché applies. The hard part is identifying all the visible, hidden, and disguised costs, and the chains that bind them.

The process that takes a product from a concept to development and production, and finally to an end-user's facility can be thought of as a chain. More accurately, it's a web of interconnected and interdependent chains, and any part of it can become the single point of failure.

During an economic slowdown, the supply chain becomes a likely candidate for failure. Suppliers can go out of business or suffer shortages from their own suppliers or staff, and workloads can change. One supplier's difficulties can create a domino effect on other suppliers and freeze significant parts of the chain, leading to costly delays in manufacturing. When outsourcing, whether domestically or abroad, it's important to understand just how resilient your contract manufacturer's domestic and global suppliers are in every area: electronics, sheet metal, machined parts, plastics, raw boards, simple subassemblies, and more. You must get a sense of how solid the relationships are, and what kind of authority your contract manufacturer will command when times get tough for its suppliers.

By partnering with a manufacturer that has well-developed supply management capabilities, a robust manufacturing resource planning system, secure infrastructure, and world-class quality systems, OEMs can optimize material costs across their entire customer base. They can also deliver high-quality end items in the same price range as offshore providers of electronic manufacturing services with far less risk.

In a recent blog post, the vice president of marketing for Kinaxis, a supply-chain management company, advised companies to take a holistic approach when managing increasingly complicated supply chains: “There is a need for more integrated planning, execution, and strategizing instead of pure exchange of goods or service and money.”<sup>2</sup>

The risk of breaking any part of the complex web and the logistical difficulties involved with fixing potential problems may seem to give domestic outsourcing an advantage over offshoring. Its benefits are also noticeable when manufacturers examine shipping concerns.

### **The Shipping Link**

"In the first quarter, significant shipments were delayed due to a faulty component detected in the contract manufacturer's supply chain."<sup>3</sup> This statement from the Q1 2008 revenue report of Gemalto, a provider of security services, illustrates the importance of the cumulative time that it takes a product to get from the manufacturer to an end customer. Such time is obviously increased when a manufacturer's partner is located in another country.

An article in *Manufacturing Engineering* points out that besides travel time, there are other factors that could slow the delivery of product from an offshoring partner: "From land shipping in China, through unload and land ship in the United States, it can take four to six weeks for a product to reach its destination."<sup>4</sup> Homeland security issues, unexpected delays such as the West Coast dock strike of 2002, and port fees are other problems cited in the article. Furthermore, if a manufacturer realizes that a product has to be reworked after it's shipped, it's very hard to get the product back.

There are, however, situations in which the above concerns are overruled by an OEM's objective. For example, if an OEM's main priority is rapid deployment of a product across faraway regions, assuming that the product is revision stable and the market demand reasonably predictable, then offshoring is most likely the best option. In this case, the benefits that offshoring offers (i.e., reduced-cost parts and materials) outweigh the risks that it poses.

### **Who to Trust?**

Among the three broad categories of outsourcing considerations—cost, supply chain, and trust—trust is arguably the most important. Trust can be the savior when a chain breaks down. Trust will keep both parties adjusting the business model to ensure cost-benefits on both sides of the relationship. And trust, most significantly, may be the last defense when it comes to protecting intellectual property (IP).

The MET Overseas Study Tour Committee noted in its 2005 report on China's role in the global supply chain that examples of counterfeiting "business-to-business items such as valves" had been observed in the country. Although the report said that China's "legal system now has the desire to enforce international IP laws," it still suggested that companies guard their IP by distributing "parts supply between different suppliers and commercially sensitive parts as late as possible in the supply chain. This means that no single supplier can counterfeit the product."<sup>5</sup>

As you seek to retain and improve the core technology that provides your company with a true advantage in the marketplace, you may not want to go through the trouble of creating a production and supply chain that prevents suppliers from counterfeiting your product. Your contract manufacturer should be a trusted partner that will assist you with IP protection, overall product cost improvement, and delivery flexibility. It should also provide recommendations for product enhancement and design for manufacturability on future product generations. To operate at such a level, the relationship cannot be fettered by trust issues.

The trust umbrella also encompasses the need for a contract manufacturer to be up-to-date on all necessary certifications and regulations as mandated by FDA. This matters particularly for devices with a high concentration of electronics that need to be built in accordance with 21 CFR Part 820, which provides guidelines for a contract manufacturer to set policies, operating procedures, and best practices. It is possible that international contract manufacturers that are not regulated by FDA may not comply with these guidelines.

### **To Offshore or Not?**

It would be wonderful if there were guidelines that pointed to certain product types or categories for which the advantages of domestic outsourcing would clearly outweigh offshoring, or vice versa. A few years ago, some might have believed that simple toys were the best candidates for offshoring—yet the lead paint scare of the last few years contradicts that theory. Or, people might have agreed that certain medical devices should only be

manufactured domestically. However, successful examples of complex devices, such as those used in radiology and rehabilitation, are successfully manufactured in many regions worldwide.

Often companies looking to manufacture products in extremely high volumes (10,000 or more units per year) can achieve great benefits from offshoring. Both the cost-benefits and the rapid distribution to worldwide markets can make the difference in these cases. Similarly, products that require a highly automated manufacturing process and do not undergo frequent revisions may be appropriate for international manufacturing. In such cases, immediate access to the partner and product and control over the process may not be as critical to the product's success in the market.

At the same time, certain kinds of products tend to benefit from domestic manufacturing: those of significant size or weight, or those that require a low- to medium-volume, high-mix manufacturing process. Size and weight are gaining importance as the cost of transportation rises, and products bound for the United States can greatly increase in cost because of overseas shipping. In addition, low- to medium-volume, high-mix manufacturing requires suppliers with the highest-quality supply chain, credentials, and processes in place, as well as a strong global sourcing team to leverage component costs from lower-cost regions.

## Conclusion

Both domestic outsourcing and offshoring have emerged as critical components of the modern manufacturing model for the device industry. They enable elasticity for OEMs and create opportunity for a substantial number of large and small businesses that provide specialized services. When it comes time to choose between the options, there is no right or wrong answer; there is only what makes the most sense for your business and allows you to confidently focus on what you do best.

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