Offshore Sourcing: The Hidden Costs

Photo Courtesy of the North American Die Casting Association.

Questions and answers on the real costs of offshore sourcing of diecasting tooling and production.

Lured by a vision of low prices four U.S manufacturers joined many other Original Equipment Manufacturer (OEM) purchasers in sourcing die cast components from offshore producers. For them, the transoceanic pipeline proved very long and beset with unexpected twists and turns. Are they unique?

The Temporary Quote

A West Cost company retooled a large die cast substructure for a computer printer in Taiwan a year before it planned to put the product on the market. The unit price quoted was 50% under its domestic supplier quotation.

Problems with the die casting die and the initial casting resulted in a 12-month delay. When the Taiwanese tooling was finally approved, new prices were quoted for the die casting production—42% higher than the agreed-upon figure.

After adding in all of the built-in costs of doing business overseas, the company said its costs exceeded what they would have been doing domestically.

Lost Market Share–Creating a New Competitor

Perhaps the largest cost of using overseas sources is the potential cost of creating a new direct competitor for your product. While tooling up an offshore source for a component or subassembly, the American OEM provides both marketing intelligence and engineering specifications about the piece part and the subassembly or finished product.

All of the situations described below happen every year to unsuspecting American manufacturers who fail to see the long term cost and marketing implications of using offshore sources for components.

1. The offshore firm sees the production numbers and concludes there is sufficient volume to justify copying the product for sale in overseas markets. The cost, in the very least, is the potential loss of market share for the U.S. firm in the foreign market.

2. The offshore firm enters the U.S. market as a competitor. It uses the American company's engineering and builds duplicates of the tooling.

3. The offshore firm enters the U.S. market with off

price knockoffs of the American product: often they use the identical name for the product and copy the packaging. Sometimes the American company is unaware that some of the product in the marketplace was not produced in their own plants. It usually is discovered when returns come back and the company realizes the parts are different in some way from their own.

4. The offshore company will use the American company's tooling. This could involve the die casting die or all of the tooling used to produce the components in the subassembly or finished products. This use of "free tooling" gives the offshore competitor a decided advantage over the U.S. OEM.

The costs from the various scenarios listed above include: loss of market potential in the export market; loss of market share in U.S. market; creation of a new competitor who has an unfair cost advantage (based on using free tooling); or loss of intellectual property, including design, specifications, and know how.

The Die That Failed

After aggressively seeding out a "less expensive" overseas supplier, a producer of power saws and snow blowers in the Southeast discovered inferior tooling-trouble with design and workmanship that required extensive welding on die cores and other major tooling repairs.

The overseas business arrangement looked "cheaper at the front end," but management is now seriously concerned with how long the dies will last. "It's difficult to put a number on what we will have gained, if anything, in the long run," the company's purchasing agent said, adding that management is not optimistic.

The Lead Time That Stretched

A Midwestern small appliance manufacturer was attracted to the shorter tool manufacturing time offered by offshore die casting toolmakers and rushed to gain an advantage over competitors. "In our highly competitive business, timely entry of new products is imperative if we want to remain a leader in the industry," a manager pointed out.

However, as is common in production of new components, design changes were necessary. Difficulties in communicating the revisions to the overseas supplier resulted in delays that wiped out the initial saving in lead-time. The purchasing agent does not believe the company saved money in this venture, and he is sure it did not save time.

The Door Handles That Wouldn't

Then there is the tale of the unusual refrigerator door handle. The failure of this particular zinc die cast handle is the basis of a lawsuit filed by a manufacturer of restaurant kitchen equipment against its domestic hardware supplier. The door handles, cast in Taiwan, "pulled right off the units" and were designed in such a way that the defective handles could not be replaced. The entire door had to be replaced instead.

The OEM is suing its hardware vendor because it will not cover the cost of the door handles and the additional expense of replacing the doors. The vendor sees itself as a victim, unable to recoup its losses from the overseas die caster who produced the defective part. All relationships have been severed as a result and the litigation is pending, but it appears no one will end up a winner.

Stories like these—in marked contrast to much of the accepted publicity about global sourcing—have recently been surfacing. To look deeper into the offshore sourcing story, a nationwide telephone survey of companies known to be buying die castings overseas was undertaken.

In-depth interviews with company purchasing managers engaged in offshore sourcing of die casting indicate that trouble—sometimes big trouble—often accompanies the decision of top management to mandate purchasing from Asian Basin producers such as Taiwan, Singapore, Korea, Japan, India, and Hong Kong.

Discussions with a wide range of original equipment manufacturers across the U.S. play back a recurring theme-smooth sailing across the Pacific is far from guaranteed. Though some executives were unwilling to talk about their experiences, many who were badly burned were more than willing to share their stories.

Global Complexities

The complex underpinnings of offshore sourcing appear to be the breeding grounds for added costs in time and money, the survey revealed. Buyers who focus only on price quotations and obvious add-ons such as duty and transportation charges are deceiving themselves, the more experienced managers say.

They are ignoring the complications of defining and implementing design changes across time, space, and cultural differences, the inflexibility of international finance, or the after-effects of delayed delivery or miscommunications.

Without the expensive services of an attorney, they may be ignoring the implications and ambiguities of Public Law 98-39, which assesses additional custom costs when "assistance" is given by a U.S. company to an offshore toolmaker.

In a strategy that has nothing to do with short-term costs, a U.S. bicycle manufacturer in the Northwest rejects Asian suppliers simply to keep its technological breakthroughs at home.

"Once an overseas supplier had our business, he would use the technology to manufacture for everyone else too. We are nipping our competition in the bud, so to speak," the purchasing manager said.

Saving money on tooling is always appealing, but a false economy where long production runs are anticipated. Some offshore die casting suppliers refuse to certify die steel or guarantee any tooling life.

The 20% Differential

Cheap labor and generous government subsidies may allow overseas suppliers to offer initially attractive die casting piece-part costs. But U.S. company executives who have been trading overseas for several years are dubious about the reality of those savings. American buying pros generally agree it is not worthwhile to buy die castings offshore for anything less than a 15-20% margin as additional "hidden costs" become evident. Travel budgets, larger inventories, and cash flow restrictions are areas for careful evaluation.

Overseas visits are imperative, first in the initial investigation of the supplier, and then to keep a lid on failures and rejects in the initial stages of tooling design and production. Relying on a trading company or manufacturers representative may seem easier, but it can be an invitation to disaster.

Most companies contacted indicated regular and on-going visits were necessary to ensure continuity. "We average three or four visits a year overseas, teaching the supplier new techniques and developing a relationship. It's pretty much like running your own business," an East company official said. Additional travel time is an add-on that rarely gets added to the officially quoted price, purchasing managers say.

Frozen Money Costs

Payments for goods are generally made through a letter of credit that calls for having funds on deposit with the bank so money can be drawn as needed, with final payment required before or at the time of shipment. Management decries the loss of fluid funds but rarely is the cost of frozen cash factored into the offshore supplier's quotation.

One Midwestern bank has developed a computer model that helps buyers and sellers analyze payment terms and determine the time value of money and transaction costs. By using data about current payment initiation and other delays, together with estimates of other costs, the computer model suggests payment terms that benefit both buyer and seller. Such sophisticated computations reveal the disadvantage the U.S. trading partner labors under by having to freeze certain funds for future payments.

"We have had our money tied up for six months or longer an exercise equipment manufacturer reported. "And then we pray that the merchandise arrives in good, usable condition."

Why is prayer sometimes a necessary ingredient in offshore sourcing? A vice president at a large Chicago bank that specializes in international trade provided some insight.

"With a slight draft, the supplier is entitled to receive payment just as soon as the proper documents appear at the bank. Neither you nor the bank has any right to review the shipment itself. If the documents supporting your transaction come in and we find the bill of lading is not an original, you won't be able to take possession, even though it's the supplier's fault, not yours. A properly drawn letter of credit can protect you from missing document problems, but basically you're still buying a pig in a poke."

No bank assumes any responsibility for shipment quality or completeness. International trading depends very heavily on trust; a Canadian bank admonishes its clients. "The quantity and quality of goods shipped, although possibly specified in the documents submitted to the bank as required by the credit terms, ultimately depend upon honesty and integrity of the seller or his agent."

Legal Liabilities

It's an open secret that one reason for the lower cost of some castings manufactured offshore is the use of alloy that does not meet ASTM alloy specifications.

Testing of a zinc die cast component for a security device manufactured in Taiwan revealed high lead and low aluminum and manganese content, which could result in intergranular corrosion and accelerated failure of the part. Testing of a cast part for a large fan similarly revealed a potential for product failure due to out-of-spec alloy. Understandably, this is not a subject that company purchasing agents care to discuss, but the threat of future liability suits when vital components crumble is all too real.

The cost of legal counsel also may be involved in the U.S. business plans to assist the offshore toolmaker in any way. Public law 96-39 outlines possible liability for certain custom costs. Purchasing agents state that legal advice in this complex area is required if any such assistance is rendered.

Forecasting Perils

Long production lead times and other time delays necessitate forecasting business needs months or years in advance of production. "There's hardly a soothsayer in the world who can predict what the customer wants a year down the road," another buyer commented. "Messed up targets can cost the company plenty," another offered. "In the small appliance business the price of coffee in Brazil can alter the market at any given time."

However, the commitment to accept shipment and make payment to overseas suppliers must be made early in the game. "There is no turning back because something isn't selling anymore. You just load up the warehouses with the unused parts."

"Going offshore can take a company from the black into the red in one big hurry," one buyer commented. The pitfalls are real; the savings often illusory.

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To compensate for longer overseas lead times, an electric motor manufacturer planned to place orders for die cast motor housings at regular intervals, postponing shipments if and when the supply outstripped the demand. Too late, the manufacturer discovered that the offshore supplier required larger minimums than anticipated to fill the shipping containers before they could be loaded on ocean vessels. The result was either a feast or famine of motor housings. To help determine whether an overseas vendor could provide what an appliance manufacturer needed, a purchasing manager requested a copy of the company's standard practices manual. It was provided quickly but failed to clarify anything as it was literally written in Chinese.

A West Coast office machine manufacturer, lured by the low piece-part cost, placed an order with a Taiwanese die caster for two castings to be finished and packaged as a subassembly. The price was based on a minimum order, which was nearly equal to the manufacturer's annual requirement. Operating under the assumption that shipments could be staggered, managers were looking forward to a substantial saving. Only after tooling was in progress was the company informed that the total quantity ordered would be the quantity shipped. The unanticipated extra cost for necessary storage space for the subassemblies wiped out the anticipated saving.

Waiting and Praying

A manufacturer of fuel injection equipment who deals in high precision parts in high volume voices concern about communication. Because their part specifications are so tight, the company says a tolerance problem can arise at any time. "We then must quickly get on the telephone to explore, in detail, what the problem is and how to get it resolved. There is no room for a middleman here. It is complicated enough dealing through a telephone."

Some purchasing managers are on call 24 hours a day and most admit that the hidden, intangible costs of communication, time, travel, and inventory carrying time are never added into the cost of dealing overseas.

"When estimating the cost of a part, I add in 10-12% to cover other costs, but there is no way to accurately measure the intangibles or even predict the possible problems," a buyer for a toy manufacturer noted.

"Besides, we tend to think of problems as one-time situations that won't be repeated. But that still doesn't take into account another problem that may occur."

Building vendor relationships through close communication is recognized as an important part of doing business. "There is no way to build a long-term relationship with an overseas buyer," one executive commented, "unless the company is willing to send some of its people overseas permanently or to employ people there." Global trading creates a complex situation in which problems are multiplied by cultural differences. How many buyers are equipped to understand the culture of a foreign people and work within that culture?

The Pendulum Swings

Ironically, it was the auto industry, which, after being wounded by the Japanese, looked at the Japanese model for a way to become competitive again. What it saw were tightly knit groups of buyers and vendors, working toward the same goals. Today, a strong U.S. dollar, coupled with the rising costs of Japanese labor is forcing U.S. carmakers to re-evaluate their assumptions regarding overseas sourcing. U.S.-based Japanese auto assembly plants are also using U.S. suppliers in greater numbers not only because of the strength of the dollar, but because a local supplier is more conducive to the "Just-in-Time" strategy of production and inventory control with its significantly lower inventory carrying costs.

A *Purchasing Magazine* survey of 1,700 buyers indicates that "Just-in-Time" strategy is on the rise in American businesses, with almost half of those surveyed operating on a JIT system or in the process of implementing one. The survey also unveiled a series of business priorities, which include improved coordination of statistical process control and systems communication, establishment of closer supplier partnerships with responsible vendors, and reduction in their supplier base—all made more complicated and costly by reliance on offshore diecasters.

America's only motorcycle manufacturer made a nationally acclaimed comeback after being left in the dust behind the Japanese in the early 1980s. Management turned the company around by adopting Japanese techniques to jockey it back into competition, but that didn't include adopting Japanese suppliers.

"We get our castings from suppliers within 100 miles of our plant," the purchasing manager explained, "and we've worked out a system of round-robin trucking, which keeps our leased vehicles full and our transportation costs down. You can't do that with overseas suppliers."

The motorcycle production plant works from a greatly reduced inventory and is developing close, tight relationships with its suppliers, of which die casters are the majority. Closing the circle of manufacturer, supplier, and market is more important than transoceanic sourcing for lower prices.

"We are looking for value and we are looking for lowering our costs of production, but we are not looking for cheap prices because we know that purchasing castings on the basis of the cheapest price alone doesn't add up to real cost savings. The costs surrounding that way of doing business are too high. We know because we used to do it—and it didn't work when the competition got tough. So we got smarter."

In turning the company around, one of the first approaches taken by the motorcycle manufacturer was to ask its domestic suppliers for extended payment terms, which were granted. Other OEMs say domestic suppliers have adjusted terms of payment in various ways, either on tooling costs or part production.

"You can't hope to get that with an overseas vendor," a buyer pointed out. "Minimums are often set and up front costs are low, there is no leverage for negotiation. So you take the price and absorb the extra costs. Most of the time it's a wash—if you are lucky."

Coming Home

Some buyers seem resigned to the twists and bends in the long pipeline and accept the problems as the cost of doing business expected to be incurred wherever the supplier is located. But other manufacturers are discovering some good reasons for coming home again.

Having greater control over getting components from the vendor to the manufacturing plant is high on the list. Eliminating the extra expense and time delays of pushing and pulling those supplies through the long pipeline is more valuable than a lower up-front cost, they find.

"After four years of dealing overseas, our enthusiasm has faded," an executive summarized.

"Our experiences have made us smarter, but not more profitable. Our overseas purchases are dwindling." **FMT**

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