

THE TRUE COSTS OF SOURCING ABROAD

SUMMARY

Increasingly, foreign firms are soliciting NTMA member's customers with quotes that can be as much as 20-50% below your best price. Your customer looks at the quoted price and weighs it heavier than other factors. So what can you do?

Over the past few years, NTMA has committed itself to develop a program to assist you in competing against foreign shops. NTMA began by carefully studying the attitudes of your customers and our members regarding the current competitive environment. Then a study was commissioned to determine whether there are "hidden costs" involved when a customer buys tooling and machining from a foreign firm.

The study had two basic findings: (1) the price quoted by foreign firms is often not the true cost for tooling and machining because of various hidden costs; and (2) that customers can identify these hidden costs and estimate the true price involved in purchases from foreign firms.

As this study suggests, when customers look at actual cost, not quoted price, the price differential between domestic and foreign firms usually narrows and may well disappear.

The study recommended that NTMA mount a major campaign to educate our customers about the hidden costs of foreign sourcing. The core of the program will be one-on-one presentations by you - the NTMA member - to your most important and knowledgeable customers. The special information developed to assist you in making your presentations is contained in this BMA.

This BMA has four parts: **How to Use the True Cost Education Program; Highlights of the NTMA Report; Hidden Costs: A Basic List; and the True Cost Worksheet.** The key to this program is the **True Cost Worksheet** which shows how a customer can actually calculate the hidden costs of dealing with foreign firms.

PART I-HOW TO USE THE TRUE COST EDUCATION PROGRAM

1. **Self-Education:** Start by becoming fully aware of the material in this BMA. Have your sales force learn this material as well.

Caution: All industrial purchases, from any domestic supplier as well as foreign firms, involve hidden costs based on delays, quality defects, etc. Consider the hidden costs that a customer might identify under your recent contracts. Be conscious of how your firm would do in an objective analysis of hidden costs.

If your firm has a particular problem area (delays, quality defects), consider ways to improve your performance and reduce your hidden costs.

2. **Contacting Customers:** Develop a target schedule to contact each of your major customers. It is important that

purchasing managers learn about the True Cost program from you as soon as possible. NTMA has raised the issue with purchasing agents in a variety of ways over the past year. But our customers should read and hear about the issue of hidden costs repeatedly. Decide on the best way to reach each of your leading customers whether by special appointment, a normal sales call, telephone call or letter. Wherever possible, a separate appointment that focuses just on hidden costs would illustrate to your customer that you take this program seriously and could help ensure that your customer concentrates on this issue.

3. **Identify Hidden Costs:** This BMA includes a Basic List of Hidden Costs generally involved in industrial purchasing and an additional list of those hidden costs uniquely involved in foreign sourcing. Talk through the list with your customer to find some of those hidden cost factors most relevant to his or her business. Don't get bogged down here with too much detail, just enough to show that this study is relevant.

4. True Cost Evaluation Systems: The NTMA Report found that various companies have designed systems that effectively identify and measure hidden costs. Some of these systems are complicated and can involve computerized evaluations of each purchasing contract, others are far more simple and qualitative. Our intent is not to preach to purchasing agents or to tell them how to run their business. This is a sensitive part of your presentation and must be done with great care. Our objective is only to point out this important development among some leading U.S. corporate purchasers.

If your customer expresses an interest in learning more about these true cost evaluation systems, then obtain a full copy of the NTMA report for him or her. The Report includes a detailed description of the different evaluation systems, including the complete Sourcing Evaluation Worksheet used by Texas Instruments, one of the most sophisticated systems found in use.

5. Hidden Costs and Foreign Firms: Ideally, you would like to get your customer to talk about his or her experience with and solicitations by foreign firms. But this is also a sensitive area and the nature of your relationship will determine how far you can proceed in this direction.

Depending on the experience of the customer with foreign solicitations, you can explain that U.S. corporations are increasingly receiving offers of substantial cost savings if they purchase tooling and machining from foreign firms. But if there are significant hidden costs involved in these foreign purchases, then the quoted price of the foreign supplier will not be the true cost to the U.S. purchaser. If a U.S. purchaser selects tooling and machining from a foreign firm based solely on quoted price, the purchaser may not really be getting the lowest actual price.

6. Our Objective: Our goal is to encourage professional purchasing managers to become mindful of hidden costs. You should be direct about suggesting to your customer that we hope he or she will consider adopting a true cost evaluation system that is customized to meet the company's needs. You should clearly acknowledge that this can be a difficult task and it is up to the purchasing manager to follow the approach best suited to the company.

Of course, we believe that an evaluation of true costs would be beneficial to NTMA members in competing against foreign firms. Be candid about our motive. But you should also stress that the experience of other companies shows that by monitoring hidden costs they have been able to make purchases based on lower total costs actually incurred and have been able to reduce costs associated with late deliveries and product defects.

7. True Cost Worksheet: To assist purchasing managers, NTMA developed a True Cost Worksheet. (The Worksheet is reproduced at the end of this BMA.) Take out the Worksheet and explain its purpose. This is the most

important part of your presentation. Be sure you understand how the Worksheet is used so you are not embarrassed by a question from a customer that you cannot answer.

Part A provides a checklist for purchasing managers to compare the hidden costs involved in competing bids, where foreign sources are involved. Part B gives some general ranges of the added costs that are most often involved. Instructions are included in this BMA.

In using the Worksheet, don't make it overly complex or cumbersome. It can be used in any way that the purchasing agent finds most useful and comfortable. At one extreme, it could be used for actual calculations of hidden costs for those who are willing to undertake that difficult step. However, that might be too forbidding for many purchasing managers. It would be equally valuable if they used the Worksheet simply as a checklist to ensure that hidden costs are considered in purchase decisions, even if they are not precisely quantified.

A final Note: The NTMA study suggests that substantial differentials between the prices quoted by foreign suppliers and domestic shops may not in fact be what they appear. However, even if a purchasing manager were to adopt this approach and rigorously applied a hidden cost evaluation system, it would not automatically guarantee that a domestic supplier will fare better against a foreign shop unless the domestic firm maintains a consistently high standard of quality and high level of service and responsiveness.

Make that a final point in your presentation. We are not asking for any penalties to be imposed on foreign firms, or any special favorable treatment for U.S. suppliers. We are only asking that our largest and most sophisticated purchasers consider such critical factors as quality, delays and responsiveness along with quoted prices.

PART II-HIGHLIGHTS OF THE NTMA REPORT

Many American purchasers of machining and tooling are receiving frequent offers from foreign firms that promise substantial cost savings for machining and tooling products and services purchased off-shore.

Are these claimed cost savings real?

That is the basic question raised by the NTMA's Report on The True Costs of Sourcing Abroad. To answer that question, the report analyzes various hidden costs often not included in the quoted price for certain foreign made products.

What are hidden costs?

Some hidden costs are obvious and can easily be quantified, such as customs duties, freight and insurance. Others are harder to define and difficult to calculate such as delays in delivery, quality defects and difficulties with design changes. Almost every major industrial purchase has some hidden costs not reflected in the quoted price.

What is true cost?

The true cost of any purchase adds the hidden costs to the quoted price so that the true cost is almost always higher than the quoted price and sometimes substantially higher.

Can true costs be calculated without great difficulty?

A number of U.S. corporations have developed workable procedures to identify hidden costs, monitor them on an on-going basis and calculate the true cost of purchase decisions. For example, Texas Instruments uses one of the most refined sourcing worksheets for every major material-intensive purchasing decision.

Are true cost evaluation systems expensive and complex?

Some of the most sophisticated systems, that use computerized evaluations of each vendor, can be. But other companies are using relatively inexpensive approaches that simply identify hidden costs in a qualitative way. A system should be custom designed to meet the particular needs and purchasing procedures of each company.

Are purchasers aware of hidden costs?

An NTMA survey of corporate purchasing managers shows that machining and tooling purchasers generally appreciate these hidden cost factors. Nonetheless, they are rarely reflected in actual contract awards where the lowest quoted price usually wins.

Why don't purchasers act on costs, rather than quoted price?

Most purchasers lack a reliable way to identify and quantify hidden costs with sufficient credibility to justify awarding contracts to bids that have a higher quoted price.

What should purchasing managers do?

While complex hidden cost evaluation systems can be designed, they are unlikely to be practical or appropriate for most purchasing managers. What is important is for purchasing manager's to adopt some systematic approach to supplier evaluation that includes hidden costs and then to recognize formally these hidden costs in vendor selection procedures.

The True Cost Worksheet:

To assist purchasing managers in selecting their own approach, the NTMA Report includes a True Cost Worksheet. The Worksheet provides a general framework for identifying and evaluating the most common hidden costs in machining and tooling contracts. The Worksheet can be used as a form for purchasing managers to use in calculating hidden costs as either a percentage of the quoted price or in dollar terms. It can also serve as a model to help purchasing managers develop evaluation procedures customized to their own

company's needs or, most simply be used as a basic check-list for the purchasing manager to run through to identify the key hidden costs in a qualitative fashion without attempting to put precise cost estimates on each item.

Why is the true cost analysis important for foreign sourcing?

While sourcing abroad can involve all the hidden costs involved with domestic purchases (such as defects in quality and delivery delays), it may also involve additional costs unique to foreign suppliers - such as customs duties, language and other communication problems, additional paperwork and the risks of long distance international delivery.

There are particularly high risks that can result from differences between U.S. and foreign industry standards and practices, and different meanings for the same technical terms. For example, in making molds and castings, the term "first shot" means in the U.S. the mold is completely ready to sample and inspect, while in the Orient the "first shot" mold is without many critical features (no ejector pins, no inspection, no polishing). While the foreign "first shot" may take 10 weeks compared to 16 in the U.S. and cost much less, it is in effect a different product. Similarly, regarding terms of measurement, a "micron" in the U.S. can be one-millionth of an inch. In countries using the metric system, a micron is one-one-millionth of a meter-roughly 39 times as long.

What happens when purchasers look at hidden costs?

Corporations that have developed systems to evaluate hidden costs have found that when purchasers use total cost data, the supplier with the lowest quoted price might not be the one selected. These purchasers have also been able to reduce costs associated with late deliveries and substandard quality. Other benefits of these hidden cost evaluation systems have been a clear record of the basis of purchase decisions for later review and audit and an objective basis for performance reviews with suppliers.

Is there a significant difference between the quoted price and the true cost of foreign sourcing?

This will depend on the extent to which there are hidden costs unique to foreign sourcing that are far in excess of the quoted price. These hidden costs can result from:

- Customs duties
- Financing costs and paperwork
- Foreign exchange rate fluctuations
- Travel costs
- Contracting terms
- Extensive transportation delays and disruptions
- Turnaround time for modifications
- Communications problems and costs

One major study of steel stamping has shown that the hidden costs involved in foreign sourcing were, at least in this

case, large enough to overcome the nominal advantage in quoted prices - even when the quoted price differential was as great as 42%.

**Contracting for Machining and Tooling:
The Hidden Costs of sourcing Abroad**
A Report for the
National Tooling and Machining Association
by Quick, Finan & Associates

PART III - HIDDEN COSTS: A BASIC LIST

Quoted prices from foreign sources of special tooling and machining often do not reflect the actual costs involved with the purchase. Purchasing management literature cites many factors other than quoted price that affect the total costs of contract purchases - the "hidden costs" that should be considered in choosing suppliers.

For example:

Geographical Location:

Turnaround time, costs of shipping, travel, and communications all increase rapidly when distant suppliers are selected. While this consideration may be relatively unimportant in normal times when production schedules are known and steady, it becomes critical in periods of rapid changes and shifting production priorities.

Transportation Alternatives:

A plant located near several rail, truck, air and barge routes, even though further away in miles, might be more advantageous than one where access is limited to one or two alternatives.

Inventory Costs and Controls:

Economic order quantities ("EOQs") depend on inventory costs, the cost of transportation, turnaround times, and the cost of delays. Enough material must be on hand to keep production going, plus a large enough safety or reserve stock to take care of emergencies. Close proximity or quick response time means that inventories can be kept to a minimum. On the other hand, if long lead times require additional inventories be maintained, these additional costs could offset any price break from the distant suppliers.

Quality Controls:

If a supplier has adequate statistical controls and other quality control procedures, some inspection chores normally done by the customer can be reduced or eliminated, thereby decreasing the buyer's internal costs.

Reserve Capacity:

Business's ability to meet surges in demand economically often means the difference between profit and loss in a given product line. Relying on a low-bid supplier without sufficient reserve capacity to meet the customer's peak needs risks long-term losses for a nominal short-term gain.

Responsiveness:

More generally, a manufacturer's flexibility in meeting its own customer's demands depends on whether its suppliers are willing to meet emergency and rush shipments, can adjust to the inevitable changes in specifications after an order is placed, and are willing to stand behind their products and services to deal with problems, accidents and errors. These are critical factors, but especially difficult to measure.

Technological Depth:

Finally, a purchaser should look to the longer term-how good is a supplier's research and development? What is the supplier doing in areas of interest to the purchaser in the next five to ten years. Stagna technology may be associated with lower bid prices in the short-term, but will result in long-term obsolescence and diminished competitiveness.

When a company sources abroad, all these hidden costs are still relevant, but new complexities can come into play. For example:

Customs Duties:

These are fixed and readily calculated, but sometimes are not included in the price quoted by a foreign supplier.

Financing Costs and Paperwork:

Terms of payment on foreign shipments may require letters of credit, bankers acceptances, or some other international financing mechanism-most of which require a fee to be paid to a guaranteeing bank plus additional paperwork to document the transaction.

Foreign Exchange Rate Fluctuations:

If a price is specified in foreign currencies, then the U.S. purchaser is bearing the risk of dollar devaluation before delivery and payment. But there is also a risk if the price is quoted in dollars, which is usually the case. A sharp decline in the value of the dollar will reduce the local-currency profitability of the contract for the foreign supplier. This could affect its quality/responsiveness performance, ultimately raising the risk of total lack of completion and delivery if the potential loss under the contract becomes too great.

Travel Costs:

Purchasing agents and engineers will often have to conduct site visits to assess the facilities, personnel and quality control systems of the supplier. These can be considerably more

expensive than comparable visits to domestic firms. The greater distance, with the inconvenience and added cost of frequent visits to both sides, will also make it harder to develop close working relationships between customer and supplier personnel. These added travel costs - and other management costs as well - often are not evident because they are hidden in administrative accounts outside the purchasing areas.

Contracting Terms:

European and Asian suppliers sometimes demand annual contracts with specified monthly shipments established, in contrast to the more flexible arrangements that are more customary from U.S. suppliers.

Delays:

Greater distances, the possibility of disruptions in transportation, and fewer transportation alternatives mean late shipments are more likely, and the length of delays may be longer.

Modifications:

The turnaround time necessary for required repairs and modifications (if available at all) takes longer due to distance and delays and other difficulties associated with moving goods and services across borders.

Communications:

Some communications problems are obvious. Foreign sourcing requires, for example, higher cost long-distance phone calls and telexes, as well as any translation costs. Also, the opportunity for direct oral communication may also be limited by the difference in time zones. But some communications problems are less well known—like differences in U.S. and foreign industry practices, standards and use of technical terms.

PART IV-THE TRUE COST WORKSHEET

“Hidden costs” not included in a quoted price can often be substantial enough to negate an apparent foreign price advantage. To assist purchasing managers in evaluating hidden costs, NTMA has designed the True Cost Worksheet. The Worksheet can be used in several different ways:

- As a statistical worksheet for calculating each hidden cost involved in a contract bid either in dollar terms or as a percentage of the quoted price,
- As a model that can be adapted to a company’s particular needs and procedures, or
- As a basic checklist to identify the key hidden costs in a qualitative fashion without attempting to put precise cost estimates on each item.

The True Cost Worksheet has two parts:

- **Part A** includes a basic list of the most prevalent hidden costs and can be used to evaluate bids from any competing suppliers, whether domestic or foreign.
- **Part B** provides a way to estimate the probable hidden costs for a foreign supplier where no prior experience exists by extrapolating from the hidden costs involved with a typical domestic supplier. **Part B** provides benchmark ranges of the potential additional hidden costs involved with foreign suppliers which were developed by the NTMA's consultant based on a broad study of industry experience.

The Worksheet Parts A and B are reproduced at the end of this BMA. Instructions for their use follow.

INSTRUCTIONS

Part A-Hidden Cost Ratios

1. Review the factors listed in the left hand column under "Hidden Costs" to determine which are potentially most important to this specific purchase decision. (These items may have to be refined for specific jobs.)
2. Using available information based on prior experience with each supplier and your knowledge of the suppliers, assign to each supplier an "expected cost" associated with each factor.
3. The "expected cost" is equal to the cost that could be incurred if a particular problem occurs, multiplied by the probability that the problem will occur. For example, suppose there is a 5 percent probability that Supplier 1 will produce inferior quality products that will cost \$1 00,000 for rework. Then the expected cost of rework is \$5,000. (In some cases, a supplier's performance could be superior, or above standard. Then the expected cost or cost ratio should be negative-that is, it should act to reduce the true cost relative to quoted price.)
4. Each expected cost can be expressed either in dollar terms or as a percent of the quoted price and entered into the cost-ratio column for each supplier.
5. If dollar amounts are used, they are totalled and then added to the Quoted Price to arrive at the Adjusted Total Cost. If cost ratios are expressed as a percent, they are then added together to get the total hidden cost. Add

100% to this total hidden cost, and then multiple it by the Quoted Purchase Price to get the Adjusted Total Price, or the true contracting cost.

Part B-Additional Hidden Costs of Foreign Sourcing

1. Follow the same procedure described for Part A to estimate the expected hidden costs for a representative competing U.S. supplier with which the purchaser is familiar. Enter each item as a percent in the first column under "U.S. Supplier."
2. The second column provides benchmark estimates of the probable additional hidden costs associated with a foreign supplier, expressed as a percent of the U.S. supplier's quoted price. These benchmarks are expressed as a range, so that the combined impact of the first three items (freight and packaging, insurance and financing terms) usually involves between 4 and 12% in added costs above that incurred when dealing with the typical U.S. supplier.
3. For each hidden cost item, choose a number within the benchmark range for the probable additional cost incurred by using the foreign supplier. Add this number to the estimated hidden cost of the domestic supplier (under column one) and you have the estimated hidden cost for the foreign supplier, expressed in percent, which should be entered under column three ("Foreign Supplier").
4. Those items listed as "Too variable to set benchmarks" must be estimated by the purchaser based on specific knowledge of the particular product or service involved. Specific knowledge may also produce estimates for other items that are outside the benchmark ranges.
5. Add the percents listed under column three to get the total hidden cost for the foreign supplier. Add 100% to the total hidden cost and multiply it by the Quoted Purchase Price to get the Adjusted Total Price or the true contracting price.
6. Follow the same process with the percents listed under column one to get the Adjusted Total Price or the true contracting price for the representative U.S. supplier. The difference between these two Adjusted Total Prices allows for a fair comparison of the difference between the foreign or domestic suppliers.

This BMA was reviewed by NTMA Staff.

**TRUE COST WORKSHEET
PART A
HIDDEN COST RATIOS
(Percent of Quoted Purchase Price)**

Hidden Costs	Supplier 1	Supplier 2	Supplier 3
Freight and Packaging Costs	_____	_____	_____
Insurance Costs	_____	_____	_____
Financing Costs	_____	_____	_____
Travel and Communications Costs for Up-Front Consultation, Review, Etc.	_____	_____	_____
Paperwork Problems (Include Paperwork In- accuracies and Additional Paperwork Required)	_____	_____	_____
Inventory Costs	_____	_____	_____
Internal Inspection Costs	_____	_____	_____
Internal Rework Costs	_____	_____	_____
Lost Time for Rejected Parts	_____	_____	_____
Lost Time for Delayed Delivery (Initial Orders and to Correct Errors)	_____	_____	_____
Customs Duties	_____	_____	_____
Exchange Rate Risk	_____	_____	_____
Additional Features Required to Bring Product In Line With U.S. Standards	_____	_____	_____
Total Hidden Costs (%)	_____	_____	_____
	+100%	+100%	+100%
x Quoted Purchase Price (\$)	x	x	x
= Adjusted Total Cost (\$)	=====	=====	=====

**TRUE COST WORKSHEET
PART B
HIDDEN COST RATIOS
(Percent of Quoted Purchase Price)**

Hidden Costs	U.S. Supplier	Benchmark Estimates of Added Foreign Costs (% of U.S. Quoted Price)	Foreign Supplier
Freight and Packaging Costs	_____		_____
Insurance Costs	_____	+4 to 12 combined	_____
Financing Costs	_____		_____
Travel and Communications Costs for Up-Front Consultation, Review, Etc.	_____	+3 to 8	_____
Paperwork Problems (Include Paperwork In- accuracies and Additional Paperwork Required)	_____	+2 to 4	_____
Inventory Costs	_____	+5 to 10	_____
Internal Inspection Costs	_____		_____
Internal Rework Costs	_____	Too Variable to Set Benchmarks	_____
Lost Time for Rejected Parts	_____		_____
Lost Time for Delayed Delivery (Initial Orders and to Correct Errors)	_____		_____
Customs Duties	<u>None</u>	+4 to 6	_____
Exchange Rate Risk	<u>None</u>	+1 to 3	_____
Additional Features Required to Bring Product In Line With U.S. Standards	<u>None</u>	+5 to 35	_____
Total Hidden Costs (%)	_____		_____
x Quoted Purchase Price (\$)	_____ +100%		_____ +100%
= Adjusted Total Cost (\$)	<u><u>x</u></u>		<u><u>x</u></u>