You Priced That Job How?

By Richard Harshaw
Lodestar Consulting Systems, Inc.

Many businesses can realize greater profits by changing their approach to pricing. That's why one of the first concepts covered by contractors in Lodestar's *Fiscal Fitness Seminar* is how to price a job.

Here is a typical problem:

Equipment and material costs are $2,600, and labor costs are $800. The dealership averages 29% for overhead, and wants 12% pre-tax profit. What is the correct selling price?

A) $4,794
B) $4,912
C) $5,763
D) None of the above

About 90% of the participants miss it.

For instance, many approach it like this: "Total costs are $3,400; 29% plus 12% is 41%, so I'll increase $3,400 by 41% and get $4,794 (answer A)." No good.

Others add 29% to $3,400 and then add 12 to the new total to get $4.912 (answer B). No good, but better.

Only about one in 10 gets it right with answer C.

This is an example of the "single divisor" method, a good method overall, but not without its pitfalls.

The plain fact is that most contractors do not know how to mark up job costs properly and make the profit they need. The problem is that most contractors determine gross margin by starting with costs and working up. The correct way, however, is to start with sales and work down.

In the single divisor method (or SID for short) **the selling price equals direct costs plus gross margin**, which is defined as overhead plus net profit. Direct costs are those incurred because the job was won, such as equipment, labor, sales tax, freight, etc. Overhead is represented by ongoing expenses such as rent, salaries, vehicles, insurance, etc.

The important point is that overhead and net profit are always considered as percentages of sales– not percentages of costs.

How can we use this approach to simplify pricing? Let's return to the problem and use our basic formula:

Selling price =
direct costs + overhead + profit.

This can also be stated as:

Selling price = ($2,600 + $800) + 29% of sale + 12% of sale.

By calling the selling price 100%, the equation is as follows:

100% = $3,400 + 41%

Subtracting 41% from each side of the equation tells us that $3,400 is 59% of the total price.

To determine the total price, all you need to do is divide $3,400 by 0.59 (59% converted to a decimal). The answer is **$5,763**, the total price.

The generalized SID format is:

$$\text{SID Job Price} = \frac{\text{Job Direct Costs}}{\text{100\% - Gross Margin}}$$

To find the SID price for any job, just take the total job direct costs and divide that number by the result of subtracting the company's gross margin (its historical overhead and the net profit goal for this job) from 100%.

In the foregoing example, the SID equation would look like this:

$$= \frac{\$3{,}400}{100\% - 41\%}$$

$$= \frac{\$3{,}400}{59\%}$$

$$= \frac{\$3{,}400}{0.59}$$

$$= \$5{,}763$$

In this scenario, overhead was 29 percent of sales. Therefore, to determine how much overhead to assign to this job, we multiply the selling price ($5,763) by 29% to get $1,671.

The difference between our overhead and our gross margin (selling price less direct costs, or $5,763 - $3,400 = $2,363) amounts to $2,363 - $1,671, or a profit of $692– and this is exactly 12% of the selling price!

The success of this process depends upon the availability of accurate financial statements. Lodestar's *Fiscal Fitness Seminar* allocates half a day to defining and analyzing such statements.

SID Has Problems

But there are cases where SID does not work well. Here's an example to prove the point:

Equipment and material costs are $2,600. Labor would normally run about $800. For this job, however, you estimate labor will cost about $1,600 because of difficult jobsite conditions. You still have 29% overhead and you want 12% profit.

What is the correct price?

A) $5,922
B) $6,068
C) $7,119
D) none of the above.

First, divide the direct costs by (1 minus the gross margin percentage). Since the gross margin percentage is 29% plus 12%, or 41% total, the divisor becomes (1 minus 0.41), or 0.59.

Dividing the direct costs ($4,200) by 0.59 produces $7,119 (Answer C). If you chose this answer, you applied SID correctly.

Unfortunately, this price doesn't provide 12% profit. Why? The answer has to do with the company's annual income statement, which is a compilation of all the jobs for that year.

As long as the job you are bidding has the same relationship between costs and overhead that your income statement shows, SID will work fine. The problem occurs when the relationship changes.

To illustrate the point, consider the following simplified income statement:

Sales	**$1,350,000**
Cost of Sales:	
Equipment/Material	$575,000
Labor	$185,000
Other Costs	$ 90,000
Total Cost of Sales	$850,000
Gross Margin	**$500,000**
Overhead	$392,000
Profit	**$108,000**

The key relationship here is the ratio between labor and equipment/material, which is 185,000 to 575,000, or 32%. The SID method is appropriate as long as the cost of labor is about 32% of the cost of equipment and material. In the job we are considering, however, labor amounts to $1,600, or 62% of the $2,600 cost of equipment and material.

The problem lies in how overhead is recovered in a contracting business. In the SID method, all direct costs are divided by the pricing divisor. Since more than 85% of the direct costs of HVAC companies typically come from equipment, material, and labor, equipment and material tend to recover the lion's share of overhead.

Where is the danger in this?

Some overhead can definitely be charged to equipment (such as rent, utilities, and building insurance). Other overhead items, however, are more correctly charged to labor (such as supervisors' salaries and dispatchers' wages).

Our research and experience indicate that **labor generally accounts for more overhead than equipment and material**—much more! As an extreme illustration, consider a contractor without a warehouse. Since he picks up equipment as he needs it, most of his overhead comes from labor.

In other words, the supervision of labor causes far more overhead per dollar of labor cost than does the storage and handling of equipment and material per dollar of cost.

In the sample job, the labor cost of $1,600 is twice the normal labor for a job like this. This unusual job should incur more overhead than the "normal" job.

Yet when the job costing is done, this will not be evident! When the accountant returns the job-costing report, it will show a 10% profit based on the ***assumption*** that overhead is 29% of sales, and our markup correctly allowed for this. In reality, however, the overhead will be more than 29% of sales, and there is no direct way for the accountant (or the dealer at this stage) to know this. Instead of making 12% profit on this job, our unsuspecting contractor might be losing money!

COWL May Be The Answer

Two approaches may be used to price jobs when the single-factor method does not work well. Since both of these procedures employ a two-factor approach to job pricing, they can be classed under the general heading of "dual-factor job-pricing methods."

To set up an example, let's consider the income statement at the top of this page.

The ratio of overhead to labor is a key ratio. In this case, 392,000 / 185,000 or 2.12. In other words, for every dollar in labor, there will be $2.12 in overhead.

To price a job, I need only to estimate the total labor it will require, multiply the labor estimate by 2.12 to estimate the overhead, then add my cost of labor and equipment/material, then mark it all up for the profit goal for this job.

Let's apply that principle to the earlier job.

Equipment and material totaled $2,600; labor was $1,600, and profit should be 12%. We would then price the job like this:

Overhead ($1,600 x 2.12)	=	$3,392
Equipment and material	=	$2,600
Labor	=	$1,600
Subtotal	=	$7,592

Notice how our job costs are greater than the bid price (answer C, $7,119 earlier)!

Continuing:

Divisor for 12% profit	=	0.88
Job Price (7,592 ÷ 0.88)	=	$8,627

Using the single-factor method, we $7,119. We would have won the job, but our accountant would have revealed the awful truth, as follows:

Sale price	=	$7,119
Minus overhead	=	$3,392
Minus E&M costs	=	$2,600
Less Labor	=	$1,600
What's left	=	($473)

That's a 7% loss, not a 12% profit.

We call this method **COWL** (for "**C**overing **O**verhead **W**ith **L**abor) for short.

But there is a danger here.

What if we err when we estimate the amount of time the job will take? Since all our overhead is being carried by labor, an error in estimating or controlling labor will cause an error in recovering overhead.

Also, what if our income statement is inaccurate, or several months late by the time we get it? In that case, we would be like a race car driver who drives his car by looking in the rear view mirror. It can be done, but the risks are high!

Maybe DORM Is For You?

The second dual-factor pricing method lets E&M carry some of the burden of overhead and is called **DORM** (**D**ual **O**verhead **R**ecovery **M**ethod). In this method, an error in estimating labor will not be as serious as in COWL, since E&M (a well- known quantity) carries some of the overhead burden, too.

Recall the income statement from the top of page 3.

By dividing the overhead by the total cost of sales ($392,000 ÷ $850,000), we find that we need a 46% markup on direct costs to recover overhead.

As a test of our logic, let's apply this 46% markup to each major component of direct costs to be sure all the overhead is recovered. For Equipment/Material (E/M) and Other Costs, we find $575, 000 x 0.46 = $265,200 of overhead (using several decimal places in the calculator). For Labor, we get $185,000 x 0.46 = $85,300 of overhead. And for "Other", we get $90,000 x 0.46 = $41,500. Combining them, the total overhead recovered amounts to $392,000. So far, so good.

However, E/M & Other Costs are recovering 78% of the overhead, while Labor is recovering only 22%. This does not coincide with our conclusion that labor produces more overhead burden per dollar of sales than equipment and material. How, then, can we derive a more accurate picture of our overhead burden?

The simplest way is to let the markup on E/M and Other Costs "trade places" with the

markup on Labor. In other words, we will allow E/M & Other Costs to recover $85,300 of overhead and Labor to recover $306,700. Given this new information, *we can recalculate the markups needed on E/M & Other Costs and on Labor to recover the overhead for any given job.*

To calculate the markup needed on E/M & Other Costs, we divide the assigned overhead ($85,300) by E/M & Other Costs ($665, 000). The answer is 13%, giving us a multiplier of 0.13. To calculate the markup on Labor, divide the assigned overhead ($306,700) by the cost of Labor ($185,000). The answer is 166%, for a multiplier of 1.66. (It doesn't matter that these numbers don't add up to 100%; since we are not comparing apples to apples, the markups rarely total 100%.)

Now, let's return to our high-labor job and apply DORM. In the job, E/M &Other Costs totaled $2,600; Labor was $1,600 (instead of the usual $800); and we wanted 12% profit. Using our new method, we would price the job as follows:

Markup on E/M/Other
= $2,600 x 0.13 = $338
(material's overhead contribution)
Markup on Labor
= $1,600 x 1.66 = $2,656
(labor's overhead contribution)
Direct Costs (less labor) = $2,600
Labor = $1,600
Subtotal = $7,194
Selling Price = $8,175

In contrast, using COWL, we produced a price of $8,627, which might have caused us to lose the contract. And the SID method produced a price of $7,119- a winning bid, but so low as to cause a loss on the job!

The DORM method offers an advantage. A contractor usually can estimate the E/M & Other Costs more accurately than labor costs. Using this pricing method reduces the impact of estimating labor costs incorrectly.

In conclusion, here is an important question: Where do you make most of your profits- when you sell equipment or when you sell labor? Most dealers would answer, "When I sell equipment!"

Then notice this: **When the dual-factor methods of pricing are applied to jobs with high-equipment and low-labor content, they *always* produce lower bids than a single-factor method.**

Conversely, dual-factor methods *always* price high-labor jobs high. Therefore, **consistent use of dual-factor pricing will (1) land you more equipment-rich jobs, (2) land your competitors more labor-rich jobs, and (3) begin to alter the numeric ratios on your Profit & Loss Statement, in essence producing a self-sharpening razor.**

In other words, as you use dual- factor methods consistently, you will win more and more of the high-equipment jobs while your competitors will win more and more of the labor-intensive jobs. And, the subsequent equipment sales will bring you greater dollars.

For more information on Lodestar Consulting Systems or to attend a Lodestar seminar, check our web page (www.lodestarconsultinginc.com) or check with your distributor, or write us at lodestar@kc.rr.com.