
Price is Right

by Anthony F. Costonis, Ph.D.



Editor's Note: Dr. Anthony F. Costonis is President of Corporate Development Services, Inc., Lynnfield, MA, a management consulting firm exclusively serving the construction industry. This article has been excerpted from Dr. Costonis' soon-to-be published book, "Strategic Business Planning: An Overview."

In Part 2 of this two-part article, the relationship between price and cost is explored in terms of "Return on Overhead Investment."

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PART II

While the relationship between overhead and volume suggests that you can influence the demand for the services which your company offers in the marketplace, this is generally not the case. The demand for construction services actually fluctuates more as a result of external forces such as interest rates or general economic conditions.

However, you *can* influence the overhead/volume relationships of your company through the pricing strategies which you adopt for the particular market niche in which your company may be operating. For example, no matter what your current work in process or backlog may be, if you are successful in winning a new project at a given price, your overhead will fall as a percentage of sales the instant that you sign the contract.

Hence, the third step in the planning process is to determine the Markup Rates which you will sell your work in the marketplace. Markup Rate describes the ratio of the *price* your company bids for a job relative to the *direct costs* it will incur as it does the project.

Unlike the Overhead Investment, which is totally in your control, the price that you can sell a job for is not solely in your hands. It is determined partly by the competition which may exist in the marketplace, as well as the willingness of a customer to accept the markup on cost which you can place upon the project

In negotiating this relationship, you are taking a risk in submitting the price, insofar as you do not know what your true costs are going to be on a project until *after* the project has been completed. Thus, you must set the price based upon what you *believe* you can get the job done for. On the other hand, once your customer agrees to pay a certain price to get the work done, the next most important consideration is that the project is completed on *time*. This places a burden upon your company to not only get the work done on time, but also to keep the costs within the budget established by your initial cost estimate.

Your success in balancing these variables on each job is part of your company's learning process. For example, on a project where you estimated the correct costs and you were able to turn over the project to your customer

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on time and within budget, you will have generated a gross profit out of which to pay your overhead expenses and your direct job costs. Given this positive reinforcement, the proportion of the overhead investment required to process the work is reduced, profit is generated and you will tend to repeat the same process the next time you take on a similar project. If, on the other hand, you estimated your costs incorrectly, and/or you were unable to deliver the project to the customer on

time and within budget, you will have generated a loss. Given this negative reinforcement, the proportion of the overhead investment required to process the work is increased, profit is lost, and you will try to find new and different ways to do the work the next time you take on a similar project.

Hence, a natural mechanism of feedback emerges as your company learns to survive and compete effectively in the marketplace. As this learning becomes incorporated into the decision-making structure of your company, it ultimately gets reflected in the costing and pricing strategies which you will use to adjust your relationship to your customers, and the strategies which you will use to control your internal overhead investments in people, plant and facilities to ensure that your company gets its work done on time and within budget.

Thus, *profit*, the fourth variable of the CDS Model, is really the result of the intelligence with which you make your decisions to manage your overhead, volume and cost/price strategies in the marketplace.

Profit/Overhead Relationships

Given an understanding of these variables, the final step in the application of the CDS Model is for you to judge how well or poorly you are managing the resources of your company over a given planning period. Since the CDS Model starts with the overhead investment and ends up with profitability as the result of the planning efforts of a company, this judgment can be made in terms of a new and powerful measure of organizational effectiveness identified as *R.O.O.I.* — the Return on Overhead Investment.

R.O.O.I. is defined by:

$$\text{R.O.O.I.} = \frac{\text{Pretax Net Income}}{\text{Overhead Investment}}$$

For example, a construction firm generating \$500,000 in Pretax Net Income with an Overhead Investment of \$1,000,000 has an *R.O.O.I.* of 50 percent (\$500,000 divided by \$1,000,000).

Is a 50 percent *R.O.O.I.* too low? Too high? Or, is it right on target? While most construction executives tend to have a natural and intuitive "feel" for how well or poorly they may be doing, very few know what the expected *R.O.O.I.* should be for their company.

Conventional measures of organizational performance such as net profit as a percentage of sales, net profit as a percentage of net worth, or gross profit as a percentage of sales present a very incomplete picture of the cause and effect relationships which are so critical to evaluating how well or poorly you may be doing. Moreover, none of these ratios *even consider overhead* as a fundamental variable in the decision making process of a company.

Unlike the Overhead Investment, which is totally in your control, the price you sell a job for is not.

By contrast, *R.O.O.I.* provides a direct, clear and simple measure of the intelligence with which you make your decisions to manage the overhead, volume and cost/price strategies of your company. Hence, this measure can become an extremely powerful tool which you can use for developing the framework of your strategic business planning efforts.

R.O.O.I. STANDARDS FOR THE CONSTRUCTION INDUSTRY

Since this information is so vital to success, we have prepared some norms which we use to help our clients set realistic *R.O.O.I.* goals for their companies. Figure 2 shows these results derived from 150 selected clients that have installed the CDS Model in their companies. This data presents the expected *R.O.O.I.* for six major types of contractors, reflecting their true operating income and expenses prior to any "creative accounting." While fur-

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ther research is necessary to expand the size of the sample base in each category, Figure 2 shows that there are substantial differences in the *R.O.O.I.* that can be expected for the different types of contractors. Thus, a general contractor is likely to generate an 80 percent return for every dollar that he spends on overhead; a heavy and highway contractor will likely generate a 74 percent return; a mechanical contracting firm will likely generate a 43 percent return; an electrical contracting firm will likely generate a 34 percent return, etc.

These substantial differences in *R.O.O.Z.* have to do with the level of risks that a given type of contractor

**FIGURE 2
R.O.O.I. RESULTS BY TYPE OF CONTRACTOR¹**

	General Contractor	Heavy² Construct	Mechanical Contractor	Electrical Contractor	Interior Specialty	Exterior Specialty	Your Company
LEVEL III							
Markup Rate	1.11	1.17	1.23	1.25	1.28	1.32	_____
Volume	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	_____
Cost of Sales	90.1 %	85.00 %	81.3 %	80.0 %	79.0 %	76.0 %	_____
Gross Profit	9.9 %	15.0 %	18.7 %	20.0 %	21.0 %	24.0 %	_____
LEVEL II							
Direct Overhead	0.5 %	0.0 %	3.3 %	3.3 %	5.7 %	6.0 %	_____
Indirect Overhead	3.5 %	5.8 %	8.2 %	8.6 %	5.2 %	5.9 %	_____
Operating Overhead	1.5 %	3.0 %	3.6 %	3.0 %	3.2 %	4.4 %	_____
Total Overhead	5.5 %	8.6 %	14.9 %	13.1 %	14.1 %	16.3 %	_____
LEVEL I							
PreTax Net Income	4.4 %	6.4 %	5.6 %	5.1 %	6.9 %	7.7 %	_____
R.O.O.I.	80.0	74.0	43.0	34.0	49.0	47.0	_____

¹These figures present R.O.O.I. results in terms of the conventional profit and loss statements prepared for the 150 contractors who have installed the CDS Model of Strategic Business Planning® for their companies. To calculate the values for your company, obtain your most recent financial statement, Reclassify your overhead items to reflect the conventions of the CDS Model. calculate markup rats by dividing volume by cost of sales. Calculate R.O.O.I. by dividing pretax net income by total overhead. To compare your company to other companies, show your data as a percent-ags of volume, with the exception of markup rate and R.O.O.I.

²Heavy constructors show zero dollars invested in direct overhead given the assumption that equipment costs are written off to cost of sales at full utilization.

must take on each job. As we have reviewed our client's statistics on overhead, volume, markup and profit relationships, we have seen that, in general, the greater the risk taken at the level of the project, the greater the markup on cost is likely to be. In turn, we have found that the greater the markup on cost, the greater the overhead investments that are required to support the operation of the company. This result can be observed in Figure 2 by reviewing the changes in mark up rates and overhead percentages as you read the table from left (General Contractors) to right (Electrical Contractors). Slight variations to this pattern exist in Interior and Exterior Specialty Contractors given the wide range of different types of subspecialty contractors which are included in these two categories.

Still, to the extent that the work undertaken by a contractor requires a heavy overhead investment to process it, to that extent, the contractor is likely to experience a lower *R.O.O.I.* Put in another way, the "ease" with which contractors can earn money varies substantially with the type of work that they do in the particular marketplace which they serve.

USING THE CDS MODEL TO PLAN FOR PROFIT

Figure 2 provides you with a blank column to insert your own operating statistics into the *R.O.O.I.* data base. Simply take your financial statement, reformat it to reflect the conventions of the CDS Model, and make the appropriate calculations as shown in Figure 2.

Knowledge of these figures and familiarity with the *R.O.O.I.* standards can help you use the CDS Model to plan for profit for the particular market niche in which you may be operating.

Consider how you can use *R.O.O.I.* to shape and direct your planning efforts. Suppose you want to move your company into a growth mode. Since you know that overhead expenditures will have to be made before profits will be earned, you must be prepared to sacrifice *R.O.O.I.* for a time, until the

new volume level is achieved. By contrast, suppose you anticipate a slowdown in the marketplace and decide you ought to downsize your operation by laying off members of your estimating or project management staff. In this case, you should be looking for an artificially high *R.O.O.I.* prior to the time that your company settles into its new position of economic equilibrium. Alternatively, if you choose to remain in a steady state of equilibrium, then your task becomes one of carefully monitoring the variables of overhead, markup and volume to ensure that the *R.O.O.I.* goals of your company are achieved.

In all three cases, you can develop your objectives in a clear and crisp fashion. You will be thinking in terms of spending a certain number of dollars in overhead in order to get back a certain profit on the bottom line. This objective can be stated directly in the form

of *R.O.O.I.* allowing you to communicate the expected economic benefits of your strategic business plan to all of your employees in a very straightforward manner. For example, if you plan to invest \$1,000,000 in overhead to generate a \$500,000 bottom line, you can simply state to your employees that for every \$1.00 you invest in overhead to support the operations of your company, you are looking to get back \$.50 on the bottom line. All employees from general managers to field mechanics can understand this language!

Thus, the challenge of strategic business planning is significantly simplified through the application of the CDS Model. Now, you can truly plan for profit armed with the knowledge that you have taken into account all of the elements which are necessary to develop a rational and predictable plan of action for your company. 