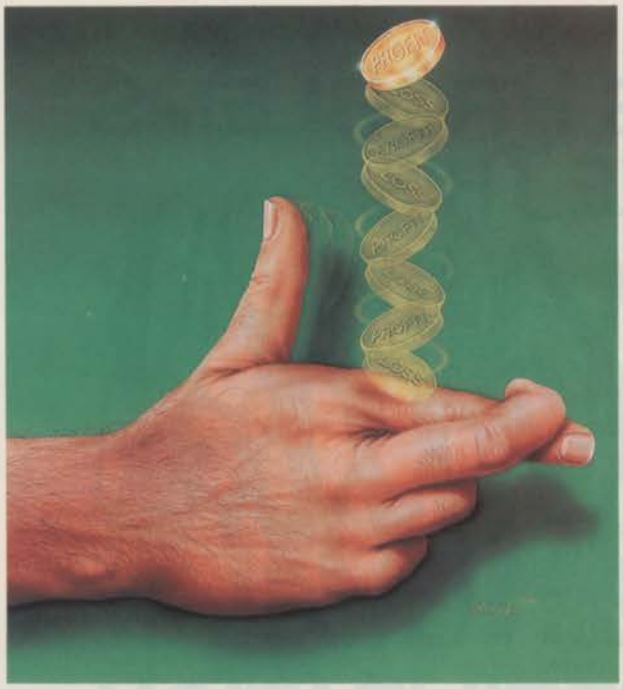

PRICING FOR PROFIT II

Break out your calculators! In Part II, the author explains different methods of pricing based on targeted return on investment.

by Travis Phillips, Ph.D.,
Mississippi State University

The "targeted return on investment" approach to pricing provides a means for allocating overhead. It is based on beginning with pricing to meet a targeted return on investment (ROI).

The procedure provides an estimate that covers all costs including overhead plus the pre-selected return on equity. The procedure has been widely supported by the Association of Landscape Contractors of America (ALCA). Broader and more varied applications are presented by Tucker in his book "Pricing for Higher Profits." Although the procedure is no cure-all, it does provide a framework for using already available accounting data.

Projecting income

In order to get a specific price based on ROI, the income statement for the year ahead must first be projected. This is necessary in order to arrive at the price based on conditions *when the service will be performed.*

For a business engaged only in landscape construction, landscape maintenance, or retail nursery sales, departmental accounting is probably not worthwhile. However, since many horticulturally-related businesses offer all these products and services, I shall assume a three-activity firm.

The basis for projecting the income statement is the previous year's income statement, being sure to consider coming trends. If the previous year was abnormal, adjustments will be necessary.

Table 1 reflects the income statements for contracting and merchandising. The contracting department (landscape construction) was chosen for detailed illustration purposes. However, the same analysis was applied to the service department (maintenance) and merchandising (garden center).

TABLE 1

Past year's income statement, by departments

Item	Department			
	Contract	Service	Merchandise	Total
Sales	$292,011	$90,849	$175,702	$558,562
Beginning invent.	32,273	5,691	32,608	64,881
Purchases	95,841		91,142	192,674
Ending inventory	36,250	5,691	31,034	67,284
Cost of goods	91,861		92,716	190,271
Gross Profit	200,147	85,158	82,986	82,986
Expenses				
Contracting Supp.	5,757			5,575
Vehicles	14,227	14,227	1,000	29,454
Equipment rental	2,303			2,303
Salaries	109,605	51,054	46,610	202,269
Advertising	1,964		4,583	6,547
Repairs	1,341	1,340		2,681
Rent	7,174	1,000	4,026	12,200
Taxes-payroll	9,126	4,250	3,464	16,840
Taxes-property	1,332	184	743	2,259
Depreciation	10,355	7,141	357	17,853
Utilities	4,384	877	12,274	17,535
Dues & subscript.	474		475	949
Buying expenses	85		85	170
Credit card disc.	262		786	1,048
Pro. fees	5,444	158	286	5,888
Insurance	8,264	3,849	3,138	15,251
Office supplies	2,587	892	1,706	5,185
Net interest	3,051	1,052	2,012	6,115
Miscellaneous	554	191	364	1,109
Total expenses	188,289	86,215	76,909	351,413
Profit	11,289	(1,057)	6,077	16,878

Begin the process of projecting the next year's income statement based on a targeted ROI by re-classifying items on the income statement for the previous year. The data in Table 2 are the classified cost items for the contracting department as shown in Table 1.

Direct and overhead costs

Two major classifications are direct costs (those costs which are a direct function of the product or service) and overhead costs (those which do not vary with the volume of sales).

The overhead category is further divided into variable and fixed costs. Variable overhead costs fall between direct and overhead fixed. These costs vary somewhat in direct relationship to the volume of sales. If possible, this group of costs should perhaps be charged directly to the product or activity.

The data in Table 3 represent regrouped data from Table 2. Costs of goods have been shifted from the accounting format to an item of direct costs.

Consider net worth

The next item of information needed is an estimate of the owner's equity—or net worth—for the next year.

Suppose balance sheet values have been assigned to the three departments the same way as the departmental income statements. Then, each department gets its pro rata share of equity based on book value of equity.

TABLE 2

CONTRACTING DEPT. : income statement for past year by classified costs

Item	Direct Cost	Overhead Costs Variable	Fixed	Total
Sales				$292,011
Beginning invent.				32,273
Purchases				95,841
Ending inventory				36,250
Cost of goods				91,864
Gross Profit				200,147
Expenses				
Contracting Supp.		—$5,757	—	$5,757
Vehicles	$11,327		$2,900	14,227
Equipment rental	2,303			2,303
Salaries	79,605		30,000	109,605
Advertising		1,964		1,964
Repairs		1,341		1,341
Rent			7,174	7,174
Taxes-payroll	6,426		2,700	9,126
Taxes-property			1,332	1,332
Depreciation			10,355	10,355
Utilities			4,384	4,384
Dues & subscript.			474	474
Buying expenses		85		85
Credit card disc.		262		262
Professional fees		0	5,444	5,444
Insurance		4,524	3,740	8,264
Office supplies		2,587		2,587
Net interest			3,051	3,051
Miscellaneous		554		554
Total expenses	99,661	17,074	71,554	188,289
Profit				11,858

TABLE 3

CONTRACTING DEPARTMENT: Income statement for past year

Item	Dollars	Percent of Sales
Sales	292,001	100.00
Direct costs		
Cost of goods (materials)	91,864	
Vehicles	11,327	
Equipment rental	2,303	
Labor	79,605	
Labor burden	6,426	
Total direct	191,525	65.59
Overhead costs		
Variable		
Contracting supplies	5,757	
Advertisement	1,964	
Repairs	1,341	
Buying expense	85	
Credit card discounts	262	
Insurance	4,524	
Office supplies	2,587	
Miscellaneous	554	
Total variable	17,074	5.85
Fixed		
Vehicle insurance	2,900	
Administrative salaries	30,000	
Salary burden	2,700	
Rent	7,174	
Property tax	1,332	
Depreciation	10,355	
Utilities	4,384	
Dues and insurance	474	
Professional fees	5,444	
Insurance	3,740	
Interest	3,051	
Total fixed	71,554	24.50
Total overhead	88,628	30.35
Net profit	11,858	4.06

TABLE 4

CONTRACTING DEPT. : Projected income statement for next year by classified costs

Item	Dollars	Percent of Sales	Percent of Exposure
Sales	343,627	100.00	
Direct costs			
Cost of goods (mat.)	108,105		
Vehicles	13,329		
Equipment rental	2,710		
Labor	93,679		
Labor burden	7,562		
Total direct	225,385	65.59	100.00
Overhead costs			
Variable			
Contracting supp.	6,778		
Advertisement	2,312		
Repairs	1,579		
Buying expense	100		
Credit card disc.	309		
Insurance	5,326		
Office supplies	3,046		
Miscellaneous	652		
Total variable	20,102	5.85	8.92
Fixed			
Vehicle insurance	3,248		
Admin. salaries	33,600		
Salary burden	3,024		
Rent	8,035		
Property tax	1,492		
Depreciation	11,597		
Utilities	4,410		
Dues and subsc.	531		
Professional fees	6,097		
Insurance	4,189		
Interest	3,417		
Total fixed	80,140	23.32	35.56
Tot. overhead	100,242	29.17	44.48
Net profit	18,000	5.24	

Equity then needs to be adjusted to current market value so that the selected return is comparable to the best possible earnings on this sum of money if it were invested elsewhere.

Suppose that the book value of the equity in the contracting department is $95,000. However, some assets appreciated, some fully depreciated. A conservative estimate of market value of equity is assumed to be $120,000.

Add previous year data

After estimating equity for the next year, data for the previous year are used along with budgeted fixed costs and targeted profit to find the sales to substain fixed cost and profits. The historical relationship for direct costs and variable overhead, along with the projected fixed overhead and profit, generate the projected income statement.

Suppose that we select a 15 percent ROI as a goal. Profit then would be estimated at:

$120,000 × .15 = $18,000

Fixed costs last year were $71,554 and are expected to increase by 12 percent next year;

The total percent of sales figure is called the marginal ratio, or the amount of each dollar needed to cover fixed costs and profit. If these percentages of sales reflect trend, we use the marginal ratio in the next step. If not, we use a trend line to arrive at a representative value.

We now have the basis for completing the next year's income statement (Table 5). Direct cost items are increased by the same percentage amount that sales for the next year are projected to increase above sales for the previous year. Variable overhead costs are expected to maintain the same proportional relationship as for the previous year. Since fixed overhead costs were projected to increase by 12 percent over the previous period, each cost item in this group is multiplied by 1.12. Profit is the goal of $18,000.

$71,554 x 1.12 = $80,140
Profit plus fixed costs to be covered are:
$18,000 ROI
80,140 Fixed cost
$98,140 Total
From the previous year's records, we find the following:

	DOLLARS	% of sales
Fixed cost	71,554	24.50
profit	11,861	4.06
		28.56

Sales required to meet the targeted ROI

$$\frac{\text{Budgeted Fixed Cost + Profit}}{\text{Marginal Ratio}}$$

$$\frac{\$80,140 + \$18,000}{.2856} = \$343,627$$

Subtotals

Next, the subtotals of costs are first calculated as a percent of sales. Of course, direct and overhead variable costs maintain the same percentage relationship to sales as for the previous year unless adjustments were made in the marginal ratio. Overhead fixed and total overhead costs and profits as a percent of sales change

TABLE 5

SERVICE DEPT. : Income statement for past year by classified costs

Item	Direct Cost	Overhead Costs Variable	Overhead Costs Fixed	Total
Sales				$90,849
Purchases				5,691
Cost of gds.				5,691
Gross Profit				85,158
Expenses				
Vehicles	$11,327		$2,900	$14,227
Salaries	41,054		10,000	51,054
Repairs		$1,340		1,340
Rent			1,000	1,000
Taxes-payroll	3,400		850	4,250
Taxes-prop.			184	184
Depreciation			7,141	7,141
Utilities			877	877
Pro. fees			158	158
Insurance		1,508	2,341	3,849
Office supp.		892		892
Net interest			1,052	1,052
Misc.		191		191
Total exp.	55,781	3,913	26,503	86,215
Net profit				(1,057)

TABLE 6

SERVICE DEPARTMENT: Income statement for past year

Item	Dollars	Percent of Sales
Sales	90,849	100.00
Direct costs		
Cost of goods	5,691	
Vehicles	11,327	
Labor	41,054	
Labor burden	3,400	
Total direct	61,472	67.66
Overhead costs		
Variable		
Insurance	1,508	
Office supplies	892	
Repairs	1,340	
Miscellaneous	191	
Total variable	3,931	4.33
Fixed		
Vehicle insurance	2,900	
Admin. salaries	10,000	
Salary burden	850	
Rent	1,000	
Property tax	184	
Depreciation	7,141	
Utilities	877	
Professional fees	158	
Insurance	2,341	
Interest	1,052	
Total fixed	26,503	29.17
Total overhead	30,434	33.55
Net profit	(1,057)	(1.16)

TABLE 7

SERVICE DEPT. : Projected income statement for next year by classified costs

Item	Dollars	Percent of Sales	Percent of Exposure
Sales	132,750	100.00	
Direct costs			
Cost of goods	8,316		
Vehicles	16,551		
Salaries	50,988		
Labor burden	4,968		
Total direct	98,823	66.67	100.00
Overhead costs			
Variable			
Insurance	2,204		
Office supplies	1,303		
Repairs	1,958		
Miscellaneous	279		
Total variable	5,744	4.33	6.39
Fixed			
Vehicle insurance	3,248		
Admin. salaries	11,200		
Salary burden	952		
Rent	1,120		
Property taxes	206		
Depreciation	7,998		
Utilities	982		
Pro. fees	177		
Insurance	2,622		
Interest	1,178		
Total fixed	29,683	22.36	33.05
Tot. overhead	35,427	26.69	39.44
Net profit	7,500	5.65	

from the values of a year earlier.

A new column called percent of exposure is added. These are calculated as a percentage of total direct costs. This value means that total direct costs must be marked up nearly 44.5 percent in order to break even if about $343,600 in sales are achieved.

An example

Let's examine the procedure used to reach a bid price which meets the goal of 15 percent ROI.

Suppose the proposed job contains $10,000 of direct costs (materials, labor, etc.).

Overhead mark-up to direct job cost:

$10,000 × 1.4448 = breakeven price

Target price = profit + breakeven

Target price − profit = breakeven

Profit may be expressed as target price × profit as percent of sales which in this case is 5.24 or .0524. Substituting, we get:

Target price − .0524 target price = breakeven

.9476 target price = breakeven

Target price = breakeven/.9476

$14,448/.9476 = 15,247

Check:

$15,247 − $14,448 = $799

$799/15,247 = 5.24%

Alternative: (Adjust exposure factor for profit)

1.4448/.9476 = 1.5247

Illustrating with the job containing $10,000 direct costs:

$10,000 × 1.5247 = $15,247 target price

Material	$5,000
Labor & other direct costs	5,000
	10,000
$10,000 x 1.5247 = $15,247	

		% of sales
Fixed cost	$26,503	29.17
Profit	(1,507)	(1.16)
		28.01

Adjustment:

Material $5,000 x 1.20 = $6,000

Labor, etc. 5,000 x y = 9,247

15,247

$5,000y = $9,247

y = 1.8494

$15,247 - 6,000 = 9,247

Material markup fixed

Often it is not possible to markup some of the materials to achieve the firm's goal. When this is the case, other direct costs must be marked up more to compensate.

Suppose we have the following situation:

However, materials can only be marked up 20 percent instead of the 52.47 percent needed for targeted profit.

Therefore, labor and other direct costs must be marked up by 1.8494 instead of 1.5247 when they carry equal weights in total direct costs.

The service department

The past year's income data are contained in Tables 5 and 6.

Next year's income statement was projected on basis of a 15 percent return on equity with a market value of $50,000. Fixed costs in the department were also expected to increase by 12 percent.

Since profits in the previous year were negative, the negative value is used in calculating the marginal ratio:

Sales for the next year were projected as $132,750 = ($29,683 + 7,500)/.2801. The next year's income statement is contained in Table 7.

Another strategy often used in pricing results when one item of direct costs greatly dominates, or when a major cost item such as labor maintains a fixed relationship to the other direct costs. When this is the case, this key factor may be used for bidding or pricing rather than using all direct costs.

The 1.4779 is multiplied by the ap-

TABLE 8

MERCHANDISING DEPT. : Income statement for past year by classified costs

Item	Direct Cost	Overhead Costs Variable	Fixed	Total
Sales				$175,702
Begin. inventory				32,608
Purchases				91,142
Ending inventory				31,034
Cost of goods				92,716
Gross Profit				82,986
Expenses				
Vehicles	$800		$200	$1,000
Salaries	31,610		10,000	41,610
Advertising		$4,583		4,583
Rent			4,026	4,026
Taxes-payroll	2,614		850	3,464
Taxes-property			743	743
Depreciation			357	357
Utilities			12,274	12,274
Dues & subsc.			475	475
Buying expenses		85		85
Credit card disc.		786		786
Professional fees			286	286
Insurance		1,509	1,629	3,138
Office supplies		1,706		1,706
Net interest			2,012	2,012
Miscellaneous		364		364
Total	35,024	9,033	32,852	76,909
Profit				6,077

TABLE 9

MERCHANDISING DEPARTMENT: Income statement for past year

Item	Dollars	Percent of Sales
Sales	175,702	100.00
Direct costs		
Cost of goods (purchases)	92,716	
Vehicles	800	
Labor	31,610	
Labor burden	2,614	
Total direct	127,740	72.70
Overhead costs		
Variable		
Advertisement	4,583	
Buying expense	85	
Credit card discounts	786	
Insurance	1,509	
Office supplies	1,706	
Miscellaneous	364	
Total variable	9,033	5.14
Fixed		
Vehicle insurance	200	
Administrative salaries	10,000	
Salary burden	850	
Rent	4,026	
Property tax	743	
Depreciation	357	
Utilities	12,274	
Dues and insurance	475	
Professional fees	286	
Insurance	1,629	
Interest	2,012	
Total fixed	32,852	18.70
Total overhead	41,885	23.84
Net profit	6,077	3.46

TABLE 10

MERCHANDISING DEPT. : Projected income statement for next year by classified costs

Item	Dollars	Percent of Sales	Percent of Exposure
Sales	220,189	100.00	
Direct costs			
Cost of goods (purch.)	116,187		
Vehicles	1,002		
Labor	39,612		
Labor burden	3,276		
Total direct	160,077	72.70	100.00
Overhead costs			
Variable			
Advertisement	5,742		
Buying expense	106		
Credit card disc.	985		
Insurance	1,891		
Office supplies	2,138		
Miscellaneous	456		
Total variable	11,318	7.07	7.07
Fixed			
Vehicle insurance	224		
Admin. salaries	11,200		
Salary burden	952		
Rent	4,509		
Property tax	832		
Depreciation	400		
Utilities	13,747		
Dues and insur.	532		
Pro. fees	320		
Insurance	1,825		
Interest	2,253		
Total fixed	36,794	22.99	22.99
Tot. overhead	48,112	30.06	30.06
Net profit	12,000		

For example, we shall use labor:

Sales		**$132,750**
Direct costs	**$8,316**	
Cost of goods	**16,551**	
Vehicles	**59,988**	
Labor	**4,968**	
Labor burden	**89,823**	
Total direct	**5,744**	
Overhead-variable	**29,683**	
Overhead-fixed		**$125,250**
Total costs		**$7,500**

For example, we shall use labor:

$$\frac{\text{Total Direct + Overhead + Profit}}{\text{Total Direct}} = 1.4779$$

propriate total direct cost for the price of the job. However, only labor (labor cost) may be used:

Total direct + overhead + profit ÷ = 2.2129

Thus, the markup is 2.2129 times direct labor instead of using total and direct cost.

Merchandising department

Tables 8 and 9 contain the data for the previous year for the merchandising department. Profit for the year ahead was projected as 15 percent on an equity with a current market vlue of $80,000. Fixed costs were projected to increase by 12 percent.

In order to achieve the $12,000 desired ROI, sales were projected at $220, 189 (Table 10).

For example:

Sales		**$220,189**
Direct costs		
Purchase	**$116,187**	
Vehicles	**1,002**	
Labor	**39,612**	
Labor burden	**3,276**	
Total direct costs	**160,077**	
Overhead-variable	**11,318**	
Overhead-fixed	**36,794**	
Total costs		**$208,189**
Profit		**$12,000**

Using the total of direct cost:

$$\frac{\text{Total Direct + Overhead + Profit}}{\text{Total Direct}} = 1.3755$$

This required a factor of 1.3006 markup on direct costs to breakeven or 1.3755 to cover all costs and profit. Rather than pricing merchandising at retail as a function of direct cost, a more common policy is to mark it up as a function of merchandise (purchase) cost.

For example:

The 1.3755 is multiplied times the appropriate total direct cost in order to ascertain the selling price. However, if only the merchandise (purchase price—cost of goods) cost is used:

Total direct + overhead + profit ÷ merchandise (purchases) = 1.8951

Thus, the markup is 1.8951 times merchandise cost instead of total direct cost. However, usually at retail, the selling price is expressed in terms of markup from the selling price instead of the purchase price. The factor of 1.8951 to be multiplied by the purchase price may be converted to selling price basis (Table 11).

For example, an item which has a purchase price of $1, with the above targeted markup would be priced by $1.0000 × 1.8951 = $1.90 or $1.0000/.5277 = $1.90.

The asking price

Now that we have looked at alternative applications of arriving at the price, what price do we actually ask? Let's look at merchandise first because it is less complicated.

The targeted price is designed as the average realized by the department. Since some merchandise will

Table 11

Selling price = purchase price + markup
Selling price - markup = puchase price
Markup may be expressed as selling price x markup as a percentage of the selling price
Selling price - markup % x selling price = purchase price
Selling price (1 - markup %) = purchase price
Selling price = purchase price/(1 - markup percent)

In our example:

Markup percent = (Selling price - purchase price) /Selling price
= (1.8951 - 1.0000)/1.8951
= .4723

Then, = purchase price /(1 - .4723)
Selling price = purchase price /.5277

be lost, damaged and marked down, the initial asking price should be adjusted upward. Also, competition may make it difficult to get a full markup on some items so that other items must compensate. In some cases the exact calculated price may not fit conventional pricing strategy.

For example, almost no one would price a product at $10.51. So the calculated target price should merely be a starting place for arriving at the price finally used.

Adjusting the bid

How badly you want the job and the degree of competition influence the adjustment process. But how low and how high can you go?

Typically, we would say that on the low side, the bid should not be below variable or out-of-pocket cost. In the language we have been using, this would be all direct costs plus most of variable overhead costs. After all, in the short run, we are going to incur fixed overhead regardless of business volume.

At least two exceptions should be mentioned about the low price. In the case of contracting, for short periods of time it may pay to subsidize the labor cost in order to keep a valuable crew member. In merchandising we take whatever we can get for perishable merchandise such as Christmas trees at Christmas.

The higher bid

Consider at least two factors when bidding on the higher end of the spectrum: competition and the price/volume of business sales relationship.

For some products and services, a relatively high price sells fewer units but total sales are higher than if a lower price were charged.

On the other hand, when price is increased, the percentage decrease in quantity sold exceeds the percentage increase in price. In this case the price increase results in a decrease in total sales.

If you have considerable competition and the services you offer are not particularly exclusive, the higher price may lead to lower total sales. In this case lower prices result in greater total sales. In this case knowing the price which meets your goal becomes especially important because you must, on average, meet your goal.

Weaknesses of price systems

All pricing systems have weaknesses, starting with the information put into the system. Even though you may not have started with the information from your income statement for the previous year, expenses and cost allocations are relatively arbitrary. Depriciation may be used for the expected life of the item or may be based on the fast write-off system allowed in recent years.

The targeted ROI approach has much appeal because it provides a method of allocating overhead costs.

At least three warnings should be sounded:

1) Allocation of many costs among categories is somewhat arbitrary. Many cost items have some elements of more than one category.

2) The method works only if realized sales are in the vicinity of that amount projected. If you come up short, overhead costs not covered comes from profits.

3) The method tends to place equal weight of overhead on each dollar of direct costs. Obviously, there are different demands on overhead for each job. Calculated bid priced may have to be adjusted in order to be competitive, but if downward adjustments are made on some, upward adjustments must be made on others to be offsetting.

A time of competition

There is no magic formula for pricing landscape services. However, some methods which recognize that general overhead must be recoverd do not necessarily tell you how to price a product or service to cover it. The targeted ROI has the appeal of making the allocation, but caution is needed in applying the technique.

Competition in providing landscape services is increasing as more firms enter the business. Those firms which price their services in accordance with their costs are likely to be those which survive. **LM**

(ED. NOTE: We hope this examination of pricing theories for landscape contracting has been helpful. Let us know what you think. If you have a pricing system that works for you, drop us a line. We'll publish your ideas in a future issue.)

For some products and services, a relatively high price sells fewer units, but total sales are higher than if a lower price were charged for the service.

Dr. Phillips is a professor/economist in the Department of Agricultural Economics at Mississippi State University. He has written numerous articles on the economics of crop and horticulture production, and has developed and presented marketing programs for Mississippi landscape management firms.