

READING BETWEEN THE NUMBERS

Cost accounting can hide competitive advantages, biasing operations decisions toward outsourcing.

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As one major accounting scandal after another rumbles through corporate America, a minor one is also making noise. It's the seemingly arcane aspect of manufacturing cost accounting called burden absorption that fools some operations personnel into throwing away a competitive advantage. It makes underperforming operations look better than they are while loading costs onto large, efficient performers so that they look worse.

We doubt that burden absorption scandals will ever become headline news. Yet burden absorption carries a far more widespread risk to manufacturing operations, and, in many ways, its pernicious fallacies are like viruses. The ease, extent, and stealth with which it undermines sound decision making in operations is astounding, and, even more amazing, unlike the Enron/Andersen, WorldCom, and Tyco scandals, the age-old problem is relatively easy to fix. But instead of refurbishing factories or fixing cost accounting systems, thousands of companies have opted to outsource manufacturing. Then their bottom line suffers.

The attention focused on Enron has created a newly receptive corporate and financial environment in which to address the harm done by burden absorption, which boils down to inaccurate cost information and flaws in the data. Let's take a closer look.

ABSORBED IN BURDEN ABSORPTION

Getting a clear view of operational costs is of overriding importance in highly competitive business environments, yet our accounting systems mislead as often as they enlighten.

Over and over, we see bad decisions made on the basis of monthly, quarterly, and annual financial statements. Financial statements are written for outsiders—the Internal Revenue Service (IRS), the Securities & Exchange Commission (SEC), shareholders, and lenders—in a language that doesn't translate or apply to operations management.

Concerned with aggregates, financial statements document things like whether raw material costs have risen or fallen, whether wages have risen in terms of sales, whether returns on recent investments are adequate, whether shareholders' expectations are going to be met, etc. These numbers don't reveal which raw materials costs have risen (let alone why), whether some parts of the payroll grew while others shrank, or why an investment did or didn't work out.

Yet over and over we see otherwise savvy operations executives accept summaries from cost accounting systems without question. Though many of these executives are aware that the costs are tallied incorrectly, they rely on them anyway, trusting that errors cancel each other out. In our experience, they don't.

Take a classic example from our own operations consulting practice. Our client approached a recent year-end more or less out of cash. Sales had fallen unexpectedly, and, to conserve cash, vendors were asked to wait 90 days for payment. Then management thought they saw a way to make the accounting system lower the pain level. They

invested the last of their cash—\$20 million—in a year-end production surge accompanied by overtime and costly rush shipments, which significantly lowered unit costs though nothing else. Sales still didn't improve, so, deep in red ink, they shut down the plant for two months and eventually sold excess inventory at fire-sale prices. Management wanted us to believe that discounts would have been even deeper had they not lowered unit costs so astutely. We call this "being absorbed in burden absorption."

THE OVERHEAD PROBLEM

Since overhead constitutes almost half the cost of today's typical manufacturing operation, understanding it is critical. Beyond overhead, nearly all of the remaining costs are raw materials and purchased goods except for a tiny sliver representing direct labor. Overhead accounts are a grab bag of fringe benefits, pension costs, office space, insurance, utilities, real estate taxes, inventory taxes, allocations for production equipment and automation, and SG&A (sales, general, and administrative costs such as divisional and corporate offices and strategic planning). Most cost accounting systems lump these together before applying them to product costs.

For operations managers confronted with make-vs.-buy decisions, this isn't just bean counting. To calculate whether an outside contractor should take over part of a company's production, managers need to know their costs with a high degree of accuracy. If they don't, the contractor has a significant negotiating advantage.

Let's look at another example. A client making commodity office supplies ran a large and very efficient injection molding plant. Business boomed, but the surge of orders also created dozens of new SKUs, thereby generating more overhead. The cost accounting system also made it appear that operations caused other unrelated cost increases.

The dozens of new SKUs that drove the overhead increase were likely capacity related and incremental to the business they brought on. The increase in overhead could have been due to overtime, payroll taxes, additional supervision, warehouse services, material handling labor, utilities, factory supplies, etc., that were incurred to fill the surge in orders and additional SKUs.

Traditional cost management systems would lump those overhead expenses together for a given period and would spread them over the entire SKU production for that same period. Rather than use an activity-based management (ABM) approach to the costing of the new SKUs, the traditional cost system could easily aggregate the variable and periodic costs and reflect them over all

the SKUs, thereby making the “traditional” SKUs look less profitable for that time period. This is done automatically because the typical cost rollup wouldn’t segregate costs driven specifically by the new SKUs. It takes a seasoned cost accountant to use ABM to segregate the costs and properly assign them to the drivers, which ultimately should be traceable to the product.

An absorption-based cost accounting system would not only add the direct cost of the new SKU labor but would also (unless adjusted manually) continue to add all the allocations attached to the specific machines or to the department. This would overstate the cost of the operation because the period costs, fixed costs, and overhead costs would have already been absorbed in the original allocation.

A SKEWED PICTURE

Management soon “saw” that packaging and distribution were more profitable than manufacturing, so when they should have expanded the injection molding plant to meet record demand, they decided to outsource instead. Ignoring their primary competitive advantage, they closed the plant, laid off the employees, and sold the machinery.

Now they pay about twice as much per molded piece from the outside supplier, but the cost allocations look better, and that was what mattered to managers in the incentive-bonus plan. This would be true as long as the managers were compensated for lowering overhead costs or managing working capital better—or even if the bonus were based just on the ratio of assets employed to sales. Under an outsourcing arrangement, given the capabilities of the supplier, the inventories may have dropped based on just-in-time (JIT) deliveries alone, despite the per-unit costs going up. Payables to the vendor would rise because of the decision to outsource, but receivables from customers would be unaffected. The net result: Working capital efficiency improves.

Put simply, if fewer assets were employed for a given dollar amount of sales, the executives earned more money. Thus it made sense to them to get rid of the injection molding operations as “extraneous” assets even though profits were lower.

Those costs are still being paid, of course, but the accounting system won’t allow them to be factored into the purchased components: Zero labor cost equals zero allocation. We’re referring to the period manufacturing costs, which don’t go away. Because the majority of companies using traditional standard cost methodology allocate overhead based on direct labor per SKU, the

outsourced components have no direct labor assigned. They are, therefore, potentially undercosted in a traditional costing model. It’s up to the cost accountant to trace and assign the remaining overhead costs to the products that drive those costs. Otherwise, a traditional cost rollup methodology will recognize the zero labor on the product and won’t assign any overhead cost component to that item.

The accounting system at this company was actually set up to reflect only the overhead cost of the purchasing department in the outsourced SKUs, not the overhead of the plant, which wouldn’t be absorbed by the elimination of the plastic injection molding department. This was unrealistic, to say the least.

ACCURATE COST DATA IS CRUCIAL

This client never asked the most important question: If the basis on which costs are allocated goes to zero, do the overhead costs go to zero as well? Of course not! Yet management’s actions tell us that this is exactly the conclusion they drew. All costs count, but, obviously, some count more than others. The ones that count in outsourcing negotiations are variable costs, which are primarily wages and perishable tooling. Bills for nearly everything else keep coming in, including fixed or permanent costs that may be recovered—someday. Depreciation, certain utilities, rent, real estate taxes, insurance, management salaries, and benefits are examples.

If workers are laid off, severance pay and benefits may continue for months, and it may also take months to sell unused space or equipment or put it to new uses. Inventory taxes might even rise since finished goods are valued higher than work-in-process (WIP) inventory.

Fortunately, getting accurate cost information isn’t hard. In as little as two weeks, two or three people can generate a very serviceable cost snapshot for a \$500 million factory. Costs for things like automation and process-control software are sunk; they can never be recovered. Automation’s cost is often 10 to 20 times that of direct labor, so as a company becomes more automated, decisions regarding equipment need to be based on sound costing methodology that clearly spells out the before-and-after profitability scenario given the investment. This is another reason why sound cost data is even more crucial. Since fixed costs accrue regardless, and sunk costs are unaffected by who makes a product, including them in outsourcing calculations makes no sense. To do so almost guarantees the outsource contractor will look more cost effective.

One critical aspect of make-vs.-buy decisions is the

amount of available capacity in the operation that's being affected. If there's no available capacity, fixed costs that are expected to change (supervision, depreciation, etc.) should be included in the decision (prorated on anticipated unit sales for several years in the future). These become variable costs (i.e., incremental investments) at the first increase in volume. If excess capacity exists, the fixed costs become somewhat irrelevant because they, too, are sunk costs. Volume swings (within the operation's capacity) have no impact on the fixed costs when you're considering an outsourcing opportunity.

If you *are* considering outsourcing, you need to perform a "rifle shot" analysis. This is a specific ABM-type analysis that breaks down the operation into its cost components and what the drivers of those costs are under an outsourcing arrangement or the traditional production approach. It's an audit approach to decision making and doesn't simply rely on the broadly interpreted traditional cost system that can be prone, as we have shown, to providing skewed results given changing business situations. The audit approach would involve the careful tracing of variable and fixed costs to understand how they would react in a changing production environment. Even if it means coupling the legacy standard cost system to a more appropriate ABM review, this will ensure that all costs that affect the future of the operation are considered appropriately.

THE ALLOCATION PROBLEM

Compounding the jumble of variable, fixed, and sunk costs in overhead is using direct labor as a basis for allocation. This puts pressure on managers to keep reducing touch-labor hours in order to avoid being "charged" these costs—as if these costs would somehow disappear. Of course, they don't disappear. They are loaded in ever-larger amounts onto the remaining operations still using direct labor. Those operations then appear to be even less competitive, are dumped, and the cycle begins again.

For example, let's say overhead is allocated to direct labor at a rate of 300% (a low and reasonable rate) and the firm is producing 100% of its components. If the firm then decides to outsource 50% of its components, the overhead rate on the balance of the parts goes to 600%. This makes it look like the manufacturer has become a great deal less efficient in making those parts. If this reasoning is allowed to prevail, everything becomes an outsourcing candidate.

Despite the passage of 100 years and two or three revolutions in manufacturing methods, we still allocate overhead costs based on direct labor even though direct

labor's ranks have shriveled to less than 10% of enterprise head counts and approximately 5% of the total payroll. Yet these numbers have made no impact on the accounting profession's method of allocation. Here's a real-world example of what can happen:

A gear maker produces standard industrial gearboxes and very large specially engineered ring gears for ships and mining machinery. The special-gear business employed 86 engineers and a technically trained sales force, which ran up lots of sales-related travel costs. The standard gearboxes, however, required just four engineers, and sales expenses were minimal since most sales were to distributors and by catalog.

The indirect costs averaged a worrisome 40% and were badly skewed. Burden rates were allocated on the basis of direct labor hours worked. Despite the 86:4 engineering ratio, the big special gears required less labor than the standard gearboxes. The accounting system shifted a large chunk of the big special gears' overhead costs for engineering, sales, and tooling onto the standard products because they used more total direct labor.

This led management to believe the standard gears lost money when the truth was they were very profitable. The big gears lost money. The company almost sold the profitable part of its business to focus on specials that were killing them. Until we pointed out the unintended cross-subsidy, no one perceived the competitive advantages and disadvantages.

MORE ISSUES

From working with clients, we've seen the following occur due to burden absorption accounting:

- ◆ This accounting-induced obsession with direct labor persuades executives they are better off in designing, distributing, and marketing their product rather than manufacturing it. Thousands of manufacturing companies have opted for that transition rather than refurbishing factories or fixing cost accounting systems. The rationalization is always the same: "Nobody can make money in manufacturing because the overhead kills you." Fate has not dealt kindly with many of these companies.

- ◆ Thousands of new contract manufacturing and outsourcing firms are quietly getting rich on these throw-away manufacturing operations. For companies considering outsourcing, the lesson is this: Many of the former manufacturers pay more than ever for those products they now handle as resellers and distributors.

- ◆ High-volume mature and efficient manufacturing operations can be made to look extra costly when they

are charged for support services they don't need or use. These arbitrary allocations are a hidden subsidy for inefficient operations.

◆ Overhead doesn't go away when an operation is outsourced or when two or three hourly workers are let go. It's merely reallocated.

It should be obvious that competitive advantages are being thrown away for a lack of accurate cost information and lack of understanding of the flaws in the available data. We see this most often where executives pride themselves on running the company by the numbers as if the business were a financial portfolio. They will assert that the numbers let them read between the lines of managerial obfuscation.

To this we reply: Don't mistake the numbers for the answers. Lots of things change the numbers, but very few things change the answers. Any operation that's big enough to be well-managed, well-maintained, and well-staffed should have a competitive advantage. Don't give it away. ■

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