

RESOURCE CONSUMPTION ACCOUNTING

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There is a pandemic in the accounting profession in businesses across the United States. This problem has been festering for years and is in dire need of fixing. Somehow American companies, large and small, have lost their way. But this has nothing to do with Enron. The accounting industry has lost sight of their most important clients: management. According to a July 2003 study done by the Institute of Management Accountants and Ernst and Young, 98% of managers believe their cost data is distorted while almost 40% believe their cost data is significantly distorted. Management is not getting accurate information to make decisions, and if 98% of managers recognize this fact, we need a new solution that supports decision making. Resource Consumption Accounting (RCA) is an emerging management accounting method. RCA is easier to understand, provides better decision-support, produces more accurate results, and may be the first accounting system praised by non-accountants and managers.

The problem with the state of the accounting profession is the skewed emphasis towards Financial Accounting. Financial Accounting is used to prepare financial statements for external users. These Financial Accounting reports are for outsiders to assess the business, but the reports focus on compliance with GAAP in broad totals and are not designed to support decision making. Despite this fact, 80% of organizations rely on the GAAP required Normal Costing method to provide management with reports (Sharman and Mackie 12). When management reports echo standard financial reports, management loses. These reports have no activity data and often require managers to prepare their own ad hoc reports when they require decision analysis. These financial reports are difficult to understand by non-accountants and do little to give managers the information they should have at their fingertips to run a company.

The Management Accounting problem in this country does not seem to be as problematic in other countries. According to the Sharman and Vikas article in the December 2004 *Strategic Finance* German companies employ just as many Managerial Accountants as Financial Accountants; The U.S. employs one-tenth the number of practicing Management Accountants than the U.K., Canada, and Germany (29). The weak emphasis on Management Accounting and providing information to managers to run a company is partly caused by the overwhelming requirements external parties place on corporations. Companies lose sight that the most important viewers of company feedback are people inside the company.

Another reason for the accounting focus disparity has been the lack of a good costing system. There are many costing method options, but few have been a good fit for corporations. Most companies use their Financial Accounting system method called Normal Costing (also called Full Costing, Traditional Costing, and Standard Costing) for management reporting because other costing methods have been too expensive or complicated. Normal Costing's main flaw is the overhead allocation method. Normal Costing treats all costs as variable to the businesses volume, which creates fixed costs distortions and inaccuracy whenever volumes change, a frequent phenomenon. In *RCA at Clonay*, Clinton and Webber wrote "Full-absorption method creates the potential for fixed-cost death spiral effects, where, for instance, if there's idle capacity, the costs are spread over fewer units, making the cost per unit artificially higher" (24). Fixed cost distortions can also lead to unwanted behaviors if costs for individual products change because of changes to other unrelated products.

Activity-Based Costing (ABC) is another costing method that received a lot of attention in the last couple decades. 60% of U.S. companies attempted ABC, but only 20% sustained it (Sharman and Mackie 12). ABC was ultimately an attempt at solving the cost distortions of

Normal Costing, but the method proved to be too complicated for most companies to maintain. ABC tracks multiple activities per cost center and is usually a separate system from the Financial Accounting system. ABC also assumes all costs are variable and is difficult to use as a forward thinking tool. Lean Accounting and Theory of Constraints are other tools used in Management Accounting, but none of these have been widely adopted to provide management decision support.

Resource Consumption Accounting is an emerging solution that integrates the best methods from across the globe. RCA combines the German cost management system Grenzplankostenrechnung (GPK) with the cost allocation methods of ABC to form a comprehensive Management Accounting system that may finally give non-accountants ready information to make decisions. RCA integrates measurement and management of the business into an accounting system that reflects how the company actually operates. Paul Sharman said in an IMA webinar on RCA “For any sort of management system to be effective, you must be able to articulate the plans you intend to execute in exactly the same terms that you measure the results of those plans.” RCA closely resembles Variable Costing, a method taught in Cost Accounting books but rarely used, by adjusting for volume fluctuations.

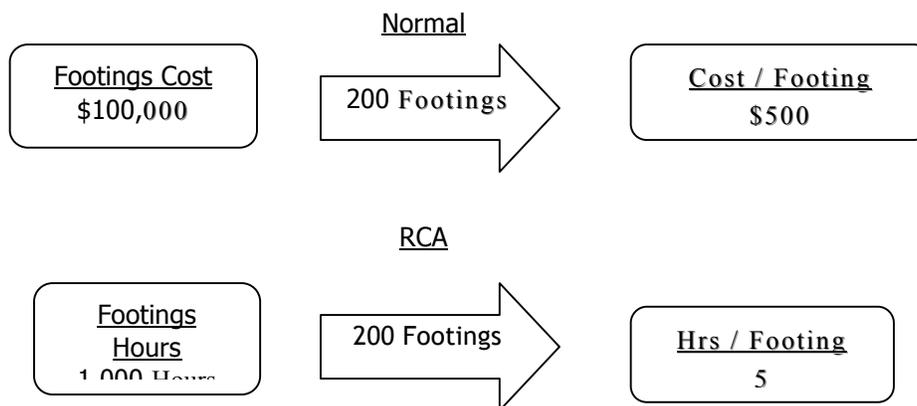
There are three main principles to understand about RCA. The first principal is the view of resources. RCA focuses on operational costs and resource consumption, and chosen cost centers reflect this. The RCA model uses many more cost centers than traditional accounting methods. Each cost center’s resources must be homogenous and must be the responsibility of only one manager. By grouping resources around a simplified output measure, cost centers are simpler to manage. The Outdoor Builders example in Table 1 explains this concept well. Under Normal Costing, Outdoor Builders has two cost centers, Decks and Porches. RCA typically has more cost centers than Normal Costing, but managers that have implemented RCA prefer this because they are easier to manage. For instance, it is very difficult to measure the deck or porch cost center’s performance from job to job because of all the variables that go into each deck. RCA attempts to break these down into more manageable measurements. At Outdoor Builders, the Decks cost center is broken down into six different cost centers that have an easy to measure output. Measuring the performance of the Footings Cost Center based on the total hours for each footing provides managers more relevant information to make decisions than the old Decks Cost Center. Additionally, these cost centers can then be aggregated to summarize any higher level of information. These summaries are easy to obtain at any level, including the old Deck Cost Center or at the overall company perspective.

Table 1 - Outdoor Builders Cost Centers

Normal	RCA	Measure
Decks	Footings	# of Footings
	Railings	Ln. Ft.
	Framing	Sq. Ft.
	Stairs	# steps
	Support Posts	# support posts
	Decking	Sq. Ft.
Porches	Walls	Sq. Ft.
	Roofing	Roof Sq. Ft.
	...	

The second main principle of RCA is the quantity-based model. Normal Costing's method of explaining relationships are based on dollar values, but expressing this relationship on a dollar basis causes fixed cost distortions. By using quantitative relationships based on causality, RCA produces more accurate results as a predictive model. Diagram 1 shows an example of how the different costing systems view work in Outdoor Builders. Using the new Footings cost center we created in the previous example, we can look at the differences of how these relationships are expressed. Under Normal Costing, a value based relationship is established. Normal Costing lumps all the cost of the cost center together, \$100,000 in this case, and then divides by the driving factor. The end result is \$500 cost per footing. This dollar relationship is then used to compare jobs and cost upcoming jobs. The problem is, as the later example explicitly shows, that this dollar value is not causal and can be deceptive when managers use this information to make decisions.

Diagram 1 – RCA Quantitative-Based Model



RCA looks at relationships based on cause and effect and applies dollar values later, not as the leading relationship. Costs that cannot be expressed in causal relationships are not applied to product costs. Diagram 1 shows how RCA approaches the Footings cost center. Instead of looking at the dollar value, RCA looks at the cause and effect relationship between hours and the number of footings. Our example has 1,000 hours for 200 footings, equaling 5 hours per footing. From the RCA perspective, the number of footings is driving the amount of hours up. These additional hours are what drive the dollars up. By calculating the 5 hours per footing, we will be able to better predict the cost of future jobs. Plus, the 5 hours per footing is more helpful information for a manager than the cost of the footing to manage his/her cost center.

The third important principal in understanding Resource Consumption Accounting is the nature of costs. RCA separates costs according to their behaviors, while Normal Costing assumes all costs are variable. Table 2 is a good example of how this principal provides managers with better decision support. The Normal Costing example pools all the cost center's costs together and divides by the number of hours. This gives the cost center a cost rate of \$100 per hour. RCA, however, recognizes that these costs are not going to rise and fall at \$100 per hour evenly because there are fixed equipment costs involved. RCA separates the costs into both Variable and Fixed Classifications and provides two hourly rates for managers. This distinction allows us to better see how volume changes affect our costs. Separating the fixed costs from the variable costs also allows us to highlight idle capacity, as you can see in Table 3. This is one of the major strengths of RCA. In order for managers to manage their idle capacity, they must be able to quantify it. RCA explicitly defines the idle capacity and gives this information to managers to utilize unused resources and make better decisions.

Table 2 - Cost Behavior

		1,000 Hours	
Normal		RCA	
Labor	\$30,000	<u>Variable Costs</u>	
Materials	20,000	Labor	\$30,000
Equipment	50,000	Materials	20,000
Total Cost	100,000	Variable Rate	\$50 / Hr
		<u>Fixed Costs</u>	
		Equipment	40,000
		Equip. Unused Capacity	10,000
Normal Cost Rate	\$100/ Hr.	Fixed Rate	\$50/ Hr.

These three main principles of RCA are important in understanding how this cost management system works. There are other RCA differences that make this method unique as well. Assets and equipment depreciation are expressed at replacement cost instead of book value. Book value depreciation is required for external reporting, but does little to help make decisions. Often new machines will have higher rates than old machines using book value depreciation even though the products and processes are very similar. Replacement costs depreciation gives managers a consistent cost to make decisions across all assets.

Another difference in calculating asset costs in RCA is using Theoretical Capacity instead of planned usage. This helps to highlight the costs of machines when they are not at full capacity. Normal Costing usually applies these assets' costs over the planned usage. This strategy hides

unused capacity instead of highlighting it by having the productive costs inconspicuously absorb the non-productive costs

Resource Consumption Accounting applies these concepts to provide better information to managers to make decisions. Table 3 below highlights an example of how RCA can give managers better information that will directly improve their decisions by continuing the Outdoor Builders Footings Cost Center example. The example compares RCA to Normal Costing through a special order request to produce a new deck. This special order will require 20 footings and will pay \$300 for each footing. Should the company accept the order from the Footings Cost Center standpoint?

First, we will look at it from the Normal Costing perspective. Diagram 1 shows that each footing costs \$500 using the Normal Costing method. Since the special order's price is at \$300 per footing, we will lose \$200 per footing, or \$4,000 total by accepting this job.

But looking at this same situation from the RCA perspective provides a different outcome. Diagram 2 shows how the quantity-based model uses causal relationships to predict future costs. Using the 5 hours per footing calculation from Diagram 1, we see the new job will take 100 hours to produce 20 footings. Now that the job's hours are figured, we can use our cost classification rates in Table 3 to find the cost of the new order. Using the calculation from Table 2, the Variable Costs for this order would equal 100 hours at \$50 per hour, or \$5,000. Applying the fixed cost rate is not as simple. You can see in Table 3 that the \$50,000 of equipment costs is made up of productive equipment costs as well as unused capacity of those equipment costs. The capacity of the Bobcat equipment in this example is 300 footings, or 1,500 hours. But the RCA report available to managers shows that there are still 2,000 hours the equipment is sitting idle, which means the new order of 100 hours will not incur any new fixed costs. Without additional fixed costs, Table 3 shows this job will increase the Footings Cost Center profit by \$1,000. RCA, in contrast to Normal Costing, readily shows managers that this new order is good for the company.

Diagram 2 – RCA Example

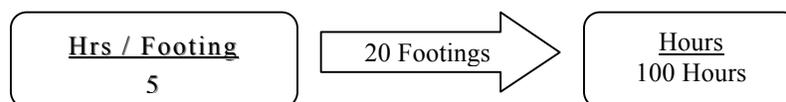


Table 3 - RCA Example

Before Order		Accept Order ?	
Variable Rate	\$50/Hr	Variable Costs (100 Hrs @ \$50)	\$5,000
Fixed Costs		Fixed Costs	\$0
Equipment	40,000	Additional Costs	\$5,000
Equip. Unused Capacity (2,000 Hrs)	10,000	Additional Revenue (20 @ \$300)	\$6,000
Fixed Rate	\$50/Hr	Added Profit (Loss)	\$1,000

There are many benefits of utilizing RCA. RCA does not replace Financial Accounting, but it can work together in one ERP system. RCA does not add the complexity Activity Based Costing does because RCA is General Ledger based. RCA is easier to understand for managers

and reduces the wasted ad hoc reporting managers must do to get the information they need to make decisions. RCA also breaks down cost reporting at the lowest level and can be aggregated at any level.

Another benefit RCA has is that it provides better cost control. By treating fixed and variable costs separately, RCA eliminates the fixed cost distortions found in many other costing methods. Quantity-based relationships highlight variances better and give managers better information to hold employees accountable. These causal relationships also provide easier and more predictive budgeting and forecasting. Most importantly, like the Outdoor Builders' Footings example, RCA gives managers the ability to manage capacity. By quantifying capacity, non-accountants can manage the unused and already purchased resources to best serve their department or company.

As with any new system, there are some drawbacks to RCA. RCA is expensive to implement. There is significant planning time required, and an integrated ERP system must be implemented as well. This will prove to be difficult because RCA is very new and very few software companies have implemented these methods. Also, RCA may not be a good fit for companies with non-routine activities. Causal relationships will be hard to define for non-routine activities.

Overall, Resource Consumption Accounting is an emerging cost management method that may help managers make better decisions. By separating cost behaviors, RCA highlights idle capacity and reduces fixed cost distortions. These features are critical to help solve the pandemic of inadequate management accounting systems. Initial research suggests RCA may have the ability to sustain implementation in American companies and improve the trust managers have in their cost data.

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