

## Today's Cost Accounting Systems – Problem or Solution?

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## **Cost Accounting Systems – Today’s Problem or Solution?**

### **ABSTRACT**

A number of writers have criticized cost accounting systems in recent years. This paper examines a number of the limitations of present cost accounting systems and some of the solutions proposed. The conclusion is that companies should first decide how they will use the product cost information and then decide how to adapt the cost accounting system to satisfy those needs.

### **INTRODUCTION**

Some major issues have surfaced in recent years concerning the inadequacies of most management/cost accounting systems in the United States. We will discuss cost accounting as a subset of management accounting in this paper because of our focus on product costs. Critics state that the future of many businesses depends on proper cost accounting and advocate major revisions in both cost accounting concepts and systems. Even the most sympathetic supporters of cost accounting recognize that companies need to take steps to make the cost information more timely and useful.

### **BACKGROUND**

Writers have been critical of "present-day" cost accounting, some as far back as the early 1980s. They reported that cost accounting systems are inadequate to meet management's needs, especially regarding product costs. Kaplan has been a prominent critic and pointed out that there are problems with product costs (1984), use of cost accounting information for performance measurement (1983), and weaknesses in capital investment decisions (1986). Goldratt (1983) called attention to the distortion of profits through excessive allocation of "value-added" costs to inventory. Edwards (1985) maintained that cost accounting is not bad, just misused; however, Edwards and Heard (1984) agreed that there are several issues to resolve through the joint efforts of accounting and other management functions. Miller and Vollmann (1985) called overhead costs "the hidden factory" and pointed out that these costs were increasing, often caused by increased transactions, not product costs.

More recently, writers proposed new cost accounting systems such as activity-based costing (Cooper et al. 1992; Beischel 1990; Turney 1991), lean accounting (Maskell and Kennedy 2007; Drickelhammer 2004) and resource consumption accounting (RCA) by van der Merwe and Keys (2002). This paper describes how these new systems can help to answer some, but not all, of the issues associated with present-day cost accounting systems.

The principal uses proposed for product costs are inventory valuation, product pricing, performance measurement, cost analysis and reduction, capital investment analysis, business planning, strategic planning, and supply chain collaboration. The weaknesses often suggested for product costs are "incorrect" distribution of overhead costs, failure to recognize specific value-added costs, lack of sufficient discrimination among products, and an emphasis on financial measures over physical measures.

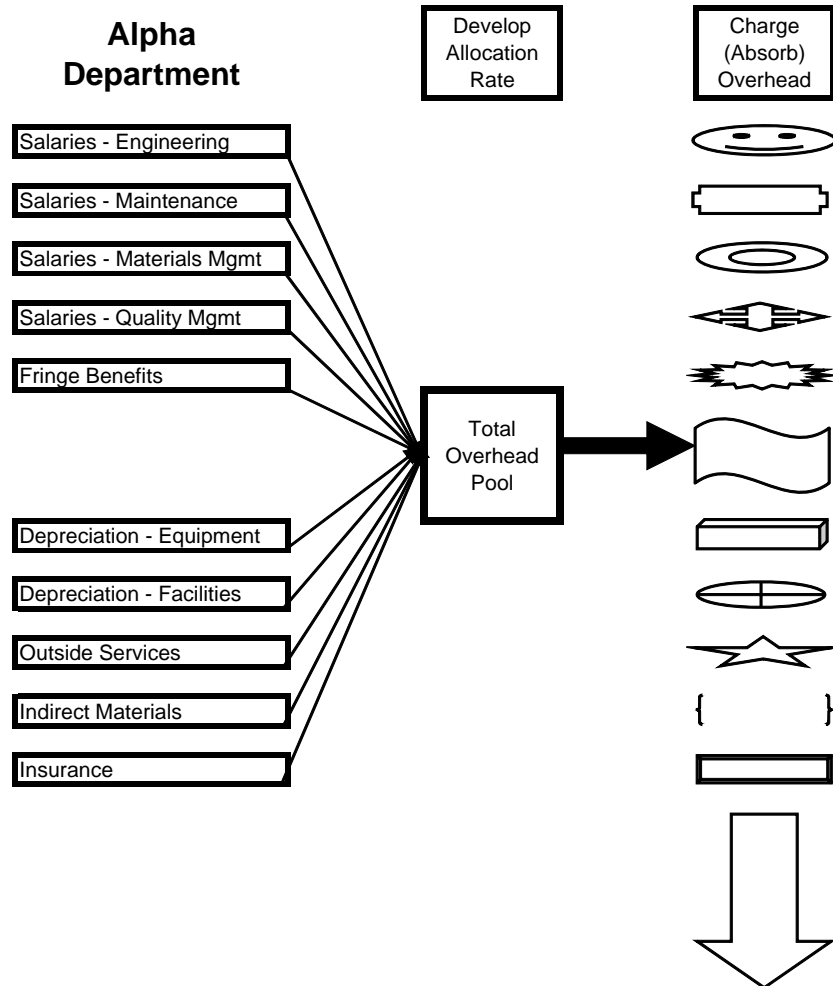
### **COST SYSTEM MODELS**

Some writers portray a typical cost system as consisting of one large overhead pool in a plant with one large work center that processes a variety of products, ranging from custom, low volume products with long setup times to standard, high volume products with negligible setup times. Figure 1 shows a schematic of how overhead expenses are distributed in such a cost system. This, of course, is an extreme simplification and, while such systems probably exist, their application is limited.

Figure 1. Schematic of Overhead Cost Allocation

### Overhead Allocation and Absorption

#### Traditional Method - Single Overhead Pool; Single Rate



If a company attempted to develop product costs using this limited system, even for a few products, they would likely misapply overhead expenses. For that reason, most cost accounting systems have greater flexibility in distributing overhead expenses to products.

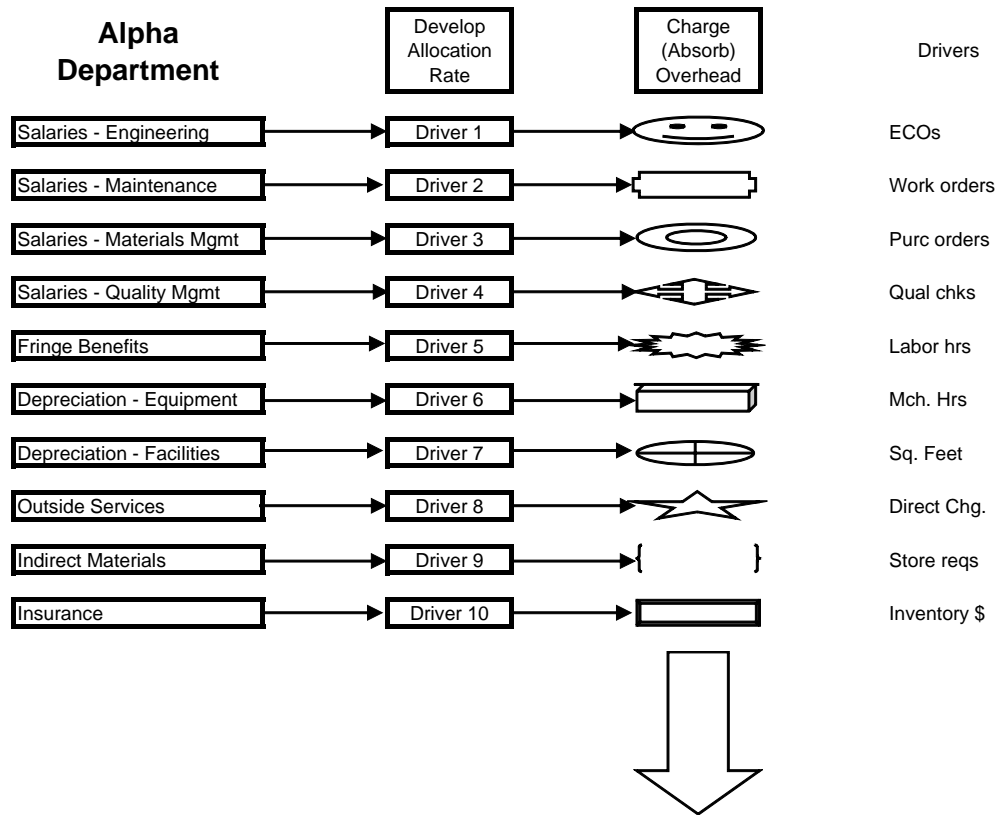
Figure 2 shows a model of a cost system that more precisely allocates overhead costs, exemplified by the activity-based costing (ABC) approach. In this model, costs of overhead departments are allocated to other overhead departments and to production work centers on some appropriate allocation basis, such as square footage (plant expenses), number of employees (human resources), indirect labor hours (maintenance or engineering), or consensus (plant management). Then, the accumulated costs

from these departments are assigned (absorbed) to products as they pass through the transformation process in each department.

**Figure 2. Schematic of Overhead Cost Allocation**  
(Typical Application)

**Overhead Allocation and Absorption**

**Activity-based-costing Method - Multiple Drivers**



Use of this overhead allocation system makes it possible to more precisely match the overhead costs with the product. True, not all companies take advantage of a system's capability; then, the problem is management of the system, not the system itself. In the following discussion of criticisms of standard product costs, we will assume that the system shown as Figure 2 is available for use by companies, if they so desire to use it.

Figure 3 compares the best-known cost systems, including the widely accepted absorption cost method, which is the standard for financial accounting purposes. A brief description of each system follows.

**Figure 3. Comparison of Cost Accounting Methods**

		Management Accounting Methods						
		Theory of Constraints	Direct Costs	Standard Costs	Absorption costs	Activity-based costs	Resource consumption accounting	Lean accounting
								VS1   VS2   VS3
<b>Costs included in Cost of Goods Sold</b>	Direct materials - actual	Direct materials - actual	Direct materials - actual	Direct materials - standard Variance	Direct materials - actual	Direct materials - actual	Direct materials - actual	Procurement i   i
		Direct labor - actual	Direct labor - actual	Direct labor - standard Variance	Direct labor - actual	Direct labor - actual	Direct labor - actual	Conversion 
		Variable overhead		Variable and fixed overhead - standard Variance	Variable and fixed overhead	Overhead 1 Overhead 2 Overhead 3 Overhead 4 Overhead 5 Overhead 6 Overhead 7	Overhead A Overhead B Overhead C Overhead D Overhead E Overhead F Variance	Distribution 
								Support 
Overhead allocation basis		Direct labor	Direct labor	Direct labor				Inventory adj 
Overhead assignment basis					Cost driver	Resource unit	Process step	
<b>Uses</b>								
Product pricing - full		Primary						
Product pricing - incremental		Primary						
Value inventory		Primary						
Budgeting - financial								
Budgeting - operations		Primary						
Performance measurement		Primary						
Analysis and improvement	Primary						Primary	
Complies with FASB		Primary						

- Theory of constraints accounting** – A cost and managerial accounting system that accumulates costs and revenues into three areas—throughput, inventory, and operating expense. It does not create incentives (through allocation of overhead) to build up inventory. The system attempts to provide a truer reflection of actual revenues and costs than traditional cost accounting. It is closer to a cash flow concept of income than is traditional accounting. The theory of constraints (TOC) accounting provides a simplified and more accurate form of direct costing that subtracts true variable costs (those costs that vary with throughput quantity). Unlike traditional cost accounting systems in which the focus is generally placed on reducing costs in all the various accounts, the primary focus of TOC accounting is on aggressively exploiting the constraint(s) to make more money for the firm (Blackstone and Cox 2005).
- Direct (variable) costing** – An inventory valuation method in which only variable production costs are applied to the product; fixed factory overhead is not assigned to the product. Traditionally, variable production costs are direct labor, direct material, and variable overhead costs. Variable costing can be helpful for internal management analysis but is not widely accepted for external financial reporting. For inventory order quantity purposes, however, the unit costs must include both the variable and allocated fixed costs to be compatible with the other terms in the order quantity formula. For make-or-buy decisions, variable costing should be used rather than full absorption costing (Blackstone and Cox 2005).

- **Standard cost accounting** – A cost accounting system that uses cost units determined before production for estimating the cost of an order or product. For management control purposes, the standards are compared to actual costs, and variances are computed (Blackstone and Cox 2005).
- **Absorption costing** – An approach to inventory valuation in which variable costs and a portion of fixed costs are assigned to each unit of production. The fixed costs are usually allocated to units of output based on direct labor hours, machine hours, or material costs (Blackstone and Cox 2005).
- **Activity-based cost accounting (ABC)** – A cost accounting system that accumulates costs based on activities performed and then uses cost drivers to allocate these costs to products or other bases, such as customer markets, or projects. It is an attempt to allocate overhead costs on a more realistic basis than direct labor or machine hours (Blackstone and Cox 2005).
- **Resource consumption accounting (RCA)** – A dynamic, integrated, and comprehensive cost management system that combines German cost management principles with activity based costing (ABC). RCA is dynamic in that changes in the environment are reflected in the cost model in a timely manner. RCA is integrated with all relevant organization systems. RCA is comprehensive in that it focuses on resources but readily includes ABC, ABM, variable costing, absorption costing, actual costs, standard costs (set in a formal process), a complete set of segmented income statements, activity based resource planning, primary costs, secondary costs and more. RCA is typically applied as part of an enterprise resource planning (ERP) system effort to achieve the best combination of cost management principles implemented in an integrated fashion. (Clinton and Keys 2007)
- **Lean accounting** – An accounting system designed for lean manufacturing. The traditional accounting systems were designed for mass production, and lean thinking violates these rules. Lean accounting addresses these needs: (1) replaces traditional measurements with few and focused lean performance measurements that motivate lean behavior at all levels of the organization, (2) Identifies the financial impact of lean improvements and establishes a strategy to maximize these benefits, (3) implements better ways to understand product costs and value stream costs, and use this cost information to drive improvement, make better business decisions, and enhance profitability, (4) Save money by eliminating large amounts of waste from the accounting, control, and measurements systems, (5) frees up time of finance people to work on strategic issues, lean improvement, and to become change agents within the organization, and (6) focuses the business around the value created for customers (Maskell and Baggaley 2004).

### **MAJOR CRITICISMS OF COST ACCOUNTING SYSTEMS**

This section addresses the major criticisms of standard costs. We identify eight different uses of product costs and the various criticisms associated with each use of the product cost. Writers have suggested many solutions, so the problem is not a lack of ideas; on the contrary, there may be more ideas than needed, suggesting that some of them are treating symptoms, not causes.

The issues described below have different causes and different solutions. There is no single, quick fix. In addition, accounting cannot do it alone, but only with help from the other members of the management team.



## Inventory Valuation

Accountants use product costs to value inventories, and this value has a direct impact on the profit reported for the company. A build-up of inventory causes profits to be higher, while a reduction of inventory causes profits to be lower (Fry 1992). The major issue for this application is the treatment of fixed overhead expenses. Generally accepted financial accounting practices require matching product costs with product sales; as a result, they cause fixed overhead costs to be stored in inventory. If the product is readily salable, the fixed overhead costs will quickly flow from the inventory value, and almost any method of valuing inventory will be satisfactory. However, if the product doesn't sell, or sells at a substantially discounted price, the value of the inventory will eventually have to be written off as an expense, often long after its creation. This means that profits were overstated when the inventory was produced, and understated when it was finally sold. Table 1 shows some possible solutions; however, only the prevention of excess inventory will produce a completely satisfactory result. Most cost accounting systems can handle any of the remaining alternatives. As a result, this is primarily a concept problem, not a system design or management problem.

**Table 1. Inventory Valuation Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"><li>Absorption of overhead costs into inventory distorts (overstates) profit if there is a buildup of inventory (production exceeds sales).</li></ul>	<ul style="list-style-type: none"><li>Control allowable level of inventory through business plan (do not plan to build unneeded inventory).</li><li>Charge appropriate value of excess inventory to period expense.</li><li>Charge only standard costs to inventory; expense the variances.</li><li>Charge only direct costs to inventory; expense indirect expenses.</li></ul>

The major problem with traditional methods of allocating overhead may be that absorbing overhead costs into inventory can disguise the need for action. A benefit of ABC is that it forces the identification of all overhead expenses at a level of detail susceptible to analysis and reduction. Lean accounting carries with it the implication that inventories will be minimal and fast moving. In the short-term (month-to-month), profits may be distorted. In the long-term (year), profits will be the same for all methods.

### **Pricing**

The marketplace heavily influences prices; however, there are occasions when a company bases its prices, or the decision to add or remove a product from its line, on the projected product costs. In this situation, the major issue concerning product costs is the allocation, and absorption, of overhead costs to products. The traditional method tends to overcharge established products and undercharge new products. As a result, established products often have prices set by the marketplace; they may appear to have low profit margins and become candidates for elimination from the product line. Conversely, new products may be underpriced, thereby reducing the total income for the company. This is primarily a problem in correctly designing and managing the cost system. Table 2 identifies the problems and some possible solutions.

**Table 2. Pricing Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>Allocate overhead costs based on direct labor. This often overcharges older, more standard products that do not need as much overhead (interpret engineering help); and undercharge newer, less standard products that are in the early part of the product life cycle and need more support.</li> </ul>	<ul style="list-style-type: none"> <li>Establish separate product lines (SBU) or manufacturing cells (JIT) to reflect clearly the difference in process requirements.</li> <li>Adjust costs by using supplemental overhead allocation bases, such as in ABC, by which to allocate different kinds of overhead more appropriately to the work centers (pounds of material, square footage, and kilowatts of power).</li> <li>Organize process steps into different work centers and develop different overhead pools for each work center with different overhead rates.</li> <li>Use job costing to charge all costs (direct and indirect) directly to the product as it moves through production. Machine charges would have to be based on some prorated cost per piece.</li> </ul>

An increase in the number of product lines, work centers, overhead allocation bases, and overhead absorption bases, such as proposed for Activity-Based Costing (ABC) and Resource Consumption Accounting (RCA) increases the complexity of the cost accounting system. While the assignment of costs to products will be better, at least theoretically, this added complexity should be evaluated against the increased benefits expected. Prices should never be based solely on product cost; conversely, prices should not be set without regard to product costs.

**Performance Planning and Measurement**

Performance measures should be objective and fair to satisfy the needs of both the person measured and the manager. Many managers agree there is a need to use more nonfinancial measures in performance measurement. Today, such a requirement exceeds the capability of most cost accounting systems. Although most systems use physical units such as hours, pounds and pieces for inputs and convert them to dollars, the systems do not have a data retrieval system to extract these physical units in a usable form. Therefore, there is a systems design requirement to provide integrated physical and financial measures. Table 3 summarizes the problems and possible solutions.

**Table 3. Performance Measurement Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>Performance measurement often is more meaningful with nonfinancial measures; cost accounting systems do not provide the nonfinancial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Product (standard) costs contain nonfinancial inputs such as pounds of material, hours of labor, and units of product, that are extracted for use in performance measurement.</li> <li>Other measures, such as number of orders, on-time deliveries, and so on, must be extracted from other systems, not the cost accounting subsystem.</li> <li>Use selected key indicators for performance measurement (with data from a variety of subsystems).</li> </ul>
<ul style="list-style-type: none"> <li>Performance measures derived from cost accounting systems satisfy external reporting requirements, but not internal management use.</li> </ul>	<ul style="list-style-type: none"> <li>Develop internal measures (profit contribution instead of net profit after taxes or ROA instead of ROI).</li> <li>Change top management emphasis to internal performance measures.</li> </ul>

It is unrealistic to expect a cost accounting system to provide all performance measurement information. Companies that rely only on the accounting reports for performance reporting usually limit their measures to financial ones. There should be a total integrated planning and control system, within which the cost accounting subsystem resides. The same measures can then be used in planning and actual performance measurement. This integrated system should be able to retrieve both physical and financial information for use in performance measurement.

**Cost Analysis and Improvement**

Costs must be analyzed before plans are developed to reduce costs or increase productivity, or both. Usually such an analysis involves choosing among alternatives. The most typical mistake is to work on average costs, as if all costs were equally shared by all products (Ames and Hlavacek 1990). Analysts struggle with how to identify the major overhead (value added) costs that vary among alternatives. One approach developed by Hewlett-Packard was to divide overhead costs into procurement overhead,

production overhead, and support overhead to better identify the causes (drivers) of costs. (Berlant, Browning and Foster 1990) Presently, the information among these detailed expenses is in the expense budget portion of the financial plan, and is often not in a format easily reviewed by operating managers. These expense budgets may not include reference to specific product lines and the resulting expense reports may not (usually do not) have any indication of the fixed and variable portion of costs. As a result, managers who review these financial reports have a difficult time relating to their department's activities. This is both a systems design and an educational problem (for non-financial persons). Table 4 lists some problems and possible solutions.

**Table 4. Cost Analysis Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>• Cost accounting systems do not distinguish between value-added and non-value-added costs; as a result, product costs contain unnecessary costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Overhead costs can be separated into those costs that are to be allocated (value-added) and those that are to be expensed (non-value-added).</li> <li>• Some overhead costs, such as defects and excess hours, may not be included in the product costs; they are charged as variances (defects and excess hours).</li> </ul>
<ul style="list-style-type: none"> <li>• Cost accounting systems do not clearly identify line items of overhead; therefore, there is little effort to reduce those costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Analysts should use the overhead line item expense reports, or budgets, as a source of information.</li> <li>• The budgeting process offers the point in the process where overhead costs should be planned (and controlled).</li> <li>• Transactions should be analyzed to see what is causing the need for overhead costs (often as employees and space). This is an extension of the zero-base-budgeting process that was popular a few years ago.</li> </ul>
<ul style="list-style-type: none"> <li>• Cost accounting systems do not identify such special cost areas as “cost of quality” or cost of “going green.”</li> </ul>	<ul style="list-style-type: none"> <li>• Trace special costs on a project basis or until the chart of accounts can be revised to more easily collect the special costs</li> </ul>

Cost analysis involves extracting cost information from the cost accounting system and other sources. Cost control occurs at the point when expenditures are approved, not after the action has been completed. Cost improvement programs are separate projects from the everyday assigning of costs to products, and should involve the collection of project costs separately, as in job costs, that can then be entered into the cost accounting system.

### **Capital Equipment Justification**

Capital equipment justification usually differs from operating cost analysis and improvement, because of the need to evaluate investments over a multiyear period. The major issue is the lack of use of long-term intangible factors in the evaluation process. One study showed that, although capital investment in new equipment is necessary to sustain growth, capital investment may result in reduced productivity for up to a year. A process for managing change must accompany the investment to maximize productivity benefits (Hayes and Wheelwright 1986). In most companies, accounting directly performs, or controls an analysis process that requires justification based on demonstrated cost savings, perhaps using discounted cash flow (DCF) techniques. Few companies incorporate the evaluation of intangible factors that cannot be readily quantified, and even fewer companies attempt to assess the value of (1) avoiding loss of market share, (2) preventing product or process obsolescence, or another similar considerations. This is primarily a concept problem in deciding how to structure the investment analysis. Table 5 describes some problems and possible solutions.

**Table 5. Capital Investment Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>• Cost accountants do not consider factors other than direct financial payback effects, such as quality, delivery performance, and customer service.</li> </ul>	<ul style="list-style-type: none"> <li>• Ignore DCF and make decisions within the framework of management, and manufacturing strategy, guidelines.</li> <li>• Supplement traditional DCF analysis with intangible factors. Evaluate project with objective measures; use intangible when objective DCF is negative (project would be rejected) (13).</li> <li>• Use incremental costing (do not apply overhead on some predetermined allocation or absorption basis) to consider all changes in costs.</li> <li>• Use holistic costing to consider the effect of a single project on other phases of the operation (integrated approach).</li> <li>• Use life cycle costing to show the expected life of the product as well as the expected life of the equipment.</li> </ul>

Discounted cash flow techniques are not to blame; they are valid methods when appropriately applied and properly used. However, they should be supplemented as appropriate. Capital budgeting and project evaluation should not be done solely by accounting; it is a multi-function process and top management should be active in the process.

**Business Planning**

Business plans, or the annual plans, prepared by many companies, should integrate the plans from each functional area of the organization, both financial and nonfinancial. The major issue is the level of cost detail and the relationships between costs and other planning variables. At present, business plans tend to be overaggregated and do very little to provide meaningful cost relationships; such information may only be found in the working papers of the public accountants. This is a systems design problem.

Table 6 shows the problems and possible solutions.

**Table 6. Business Planning Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>Use aggregate costs instead of costs broken down by major products or major process steps.</li> </ul>	<ul style="list-style-type: none"> <li>Reorganize operation into profit centers, or cells, and work centers, or process steps.</li> <li>Develop fixed and variable relationships; plan at + (-) levels for optimistic or conservative plans.</li> </ul>
<ul style="list-style-type: none"> <li>Overhead costs do not properly reflect the effect of volume changes (fixed and variable) or other factors, such as product mix changes.</li> </ul>	<ul style="list-style-type: none"> <li>Provide simulation capability to test the sensitivity of product mix changes.</li> <li>Use direct charges to products to assign these charges (involves having engineers, customer service, accounting, and top management employees filling out a job card).</li> </ul>
<ul style="list-style-type: none"> <li>Product costs do not include all costs (selling, engineering and administrative) because of accounting convention or other reasons.</li> </ul>	<ul style="list-style-type: none"> <li>Use some consensus method of allocation (for a fixed period in the future) to allocate expected SG&amp;A expenses.</li> </ul>

Business planning usually corresponds to the fiscal year; however, action programs do not necessarily conform to the fiscal year. As a result, it is sometimes difficult to make programs fit the fiscal period. The exclusion of selling, general and administrative expenses (SG&A) from product costs is a financial accounting practice, not management accounting. For cost analysis leading to product line planning, the incremental effect for these costs should be included.

### **Strategic Planning**

The major cost accounting issue in strategic planning is the need for non-financial factors to be used. At present, there is an overemphasis on financial projections, often because other non-financial information is not readily available, or is not compatible with the financial information. The core of lean accounting is using value stream costing and actual product costs in an effort to provide more accurate and timely information that is relevant to both current decisions and future strategies (Kennedy and Huntzinger 2005). This is an organizational concept problem. Table 7 shows some problems and possible solutions.



**Table 7. Strategic Planning Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>• Cost accounting does not identify non-value-added costs in preparing product costs.</li> <li>• Cost accounting does not reflect the true cost drivers (what makes the costs increase).</li> <li>• Product costs do not usually identify cost reduction opportunities.</li> <li>• Cost accounting does not involve other functions enough in the preparation of product (standard) costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Distinguish between customer requirements and process inefficiencies; eliminate the latter.</li> <li>• Study costs more carefully to identify the drivers (usually transactions or some type of customer-related problem).</li> <li>• More carefully detail the process steps (with process flow charts). Question each cost to be sure it provides enhanced order-qualifying or order-winning capabilities.</li> <li>• Top management should insist on shared responsibilities in the preparation of product costs and financial plans.</li> </ul>

Strategic planning should be the driver and cost accounting a source of information (not the other way around). Top management and other functional managers should understand the numbers they have to work with and use them in an appropriate fashion. As in equipment justification, the cost accounting function should only be one of the participants in generating the numbers used to describe the strategic plan. In addition, strategic plans should not be constrained by the fiscal year; they should be geared to events, not time periods.

### **Supply Chain Collaboration**

Advocates of supply chain collaboration suggest that information sharing is a part of the collaboration process, and that cost information may be an important element of the information shared. Cost information is one of the more sensitive areas for most companies; in fact, many companies may still not share some cost information within their company, much less with other companies. Even if companies are willing to share cost information with other members of their supply chain, the technical problem of how best to do this remains daunting. As described above, some of the most useful information is not

easily available from the present cost accounting systems. Does this mean that sharing with external companies will require customized cost studies, perhaps slightly different for each contact? That appears to be undesirable, if not unrealistic. Table 8 lists some of the problems and possible solutions for supply chain cost information sharing.

**Table 8. Supply Chain Information Sharing Issues and Possible Actions**

Issues	Possible Actions
<ul style="list-style-type: none"> <li>• There is insufficient trust among supply chain participants to share cost information.</li> <li>• There is uncertainty about the correct information to share.</li> <li>• The cost information to be shared is not routinely available from the cost accounting system.</li> <li>• The interorganizational communication systems are not capable of transmitting the cost information.</li> <li>• The cost information is not sufficiently accurate or consistently reliable.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop the collaborative relationship that fosters trust among participants.</li> <li>• Requires consultation among supply chain members.</li> <li>• Begin with selected bits of information and build toward a fuller range of information.</li> <li>• Begin the process of making the IOS compatible.</li> <li>• Decide what information is important and work to make it accurate.</li> </ul>

As Table 8 indicates, there are a number of issues with supply chain cost information sharing and none of them has easy answers. This is certainly one of the major areas to be considered by the cost accounting system designers.

## CONCLUSIONS

Problems fall into two broad groups: systems issues and concept issues. Companies have probably made more progress in dealing with the former group than with the latter group.

### Systems

The cost accounting issues that are the result of inadequate systems include identification of nonvalue-added costs, allocation of overhead, frequency of standard cost changes, separation of direct

and absorption costs, development of physical and financial measures, and the like. Most of these needs can be satisfied with today's integrated systems that include accounting modules, along with marketing and production planning and control modules. The system capability exists; what a rational company chooses to use depends on the economic implications of the choice. If management chooses not to use the system capability for irrational reasons, they should not fault the system.

To say that many of the cost accounting questions or issues can be solved through the proper choice and use of an integrated information system is an oversimplification; the choice and implementation of an appropriate cost accounting system is a major project. However, good software packages are available with enough features to satisfy most applications. While a full discussion of this systems topic is beyond the scope of this paper, companies can consider the following:

- Look at their information needs from a global perspective, to include marketing, production, engineering and other functions, as well as accounting and finance. This requires an integrated information system.
- Consider buying software "off the rack" instead of having it custom-tailored. Many companies cling to outdated or unnecessary practices that could be changed to fit the system instead of insisting on changing the system to fit them.

If a company's cost accounting system is inadequate, they should look around to see what is available.

Table 9 summarizes the major modifications needed to adapt the cost accounting systems to be more useful for the various applications discussed earlier.

**Table 9. Major System Modifications**

Application	System Modification
Inventory valuation Product pricing	Refine the cost accounting system to allocate overhead costs in an acceptable manner
Performance measurement Cost analysis for improvement Capital equipment analysis	Supplement the cost accounting system to include the physical units that are more meaningful for analysts
Business (annual) planning Strategic planning Supply chain collaboration	Extend the system to link past cost relationships with future (projected or targeted) cost relationships that are compatible among entities

### Concepts

The deeper-rooted issues, of a conceptual nature, are just beginning to get attention. The following observations address these long-term opportunities.

- Both accountants and nonaccountants have focused widespread attention on cost accounting and product costs. This is a positive step because, in the past, while management accountants recognized the need, they were not motivated, or not able, to convince others of the need to act. As a result, only a few companies understood why they should do something and what they should do.
- Non-accountants have been willing, even eager, to identify the problem; hopefully, they will be just as willing to participate in the solution. The solution requires a holistic (multi-functional) approach to management, just as with most of today's vital programs, such as Total Quality Management or Six Sigma, Just-in-Time or lean manufacturing, and Strategic Planning.
- Management accounting must be reestablished as the primary reason for accounting; financial accounting must learn to adapt. If managers have better cost information, they will do a better job of managing, the financial results will be better, and satisfying external financial reporting requirements will be easier. If the news is good, the form of the report is less important.
- All managers need to have a better understanding of accounting and its use in business applications. Too many accounting courses for non-financial managers teach bookkeeping methods, not accounting issues and logic. The universities have a responsibility to provide the technical and conceptual skills required in this area.
- There are no quick fixes; the answer lies in communication and cooperation, which are behavioral and systems (as in General Systems Theory) issues. There is adequate systems technology (hardware and software) available to do a much better job; the bottleneck is in understanding what needs to be done and then adapting attitudes to make action effective.

- The trend toward simplicity, such as in JIT and lean manufacturing, will reduce the complexity of the accounting environment. As a result, the mystery of some cost accounting areas, such as in transfer pricing, equivalent units, and joint costs, will become less relevant.
- Fixing some other problems (process and product focus, technology development and application, quality and productivity) may clear up some of the accounting problems. Accounting only reports the marketing and operations problems; it does not cause them. If businesses do a better job, there will be fewer controversial "accounting" rules and practices.

One of the more innovative ideas has been proposed by Johnson (2006 and 2006a). He suggests that it may be time to consider eliminating the link between management accounting and financial accounting; rather, companies should design a management accounting system that helps management and is not constrained by the need to link directly with the externally reported financial results. He suggests that the emphasis should be on improving operations and that other approaches should be used to measure and report results.

There is reason to expect that cost accounting can become more useful; however, the problems are not all caused by the system or accounting rules. Management must be willing to deal with the real problems in a constructive way, by supporting a multi-function approach to identifying their specific needs and implementing a program to satisfy those needs.

## REFERENCES

1. Ames, Charles B. and James D. Hlavacek, Vital truths about managing your costs, *Harvard Business Review*, 1990. Vol. 68, No. 1, pp.140-147.
2. Beischel, Mark E., Improving production with process value analysis, *Journal of Accountancy*, 1990. Vol. 179, No. 3, pp.53-57.
3. Berlant, Debbie, Reese Browning and George Foster, How Hewlett-Packard gets numbers it can trust, *Harvard Business Review*, 1990. Vol. 68, No. 1, p. 178, 5 pgs.
4. Blackstone, John H. and James F. Cox, *APICS Dictionary* (11E), 2005. APICS, Alexandria, VA.
5. Clinton, H. Douglas and David E. Keys, Resource Consumption Accounting: The next generation of cost management systems, *Focus Magazine*, [www.focusmag.com/back\\_issues/issue\\_05/pages/rca.htm](http://www.focusmag.com/back_issues/issue_05/pages/rca.htm)
6. Cooper, Robin, Robert S. Kaplan, Lawrence S. Maisel, Eileen Morrissey and Ronald M. Oehm, From ABC to ABM, *Management Accounting*, 1992. Vol. 74, No. 5, p. 54.
7. Drickhammer, David, Lean accounting: Novel number crunching, *Industry Week*, 2004. Vol. 253, No. 12, p. 49.

8. Edwards, James B., At the crossroads, *Management Accounting*, 1985. Vol. 67, No. 3, p. 44, 7pgs.
9. Edwards, James B. and Julie A. Heard, Is Cost Accounting the No.1 Enemy of Productivity? *Management Accounting*, 1984. Vol. 65, No. 12, p. 44, 6 pgs.
10. Fry, Timothy D., Manufacturing performance and cost accounting, [\*Production and Inventory Management Journal\*](#), 1992. Vol. 33, No. 3, p. 30, 6 pgs.
11. Goldratt, Eliyahu M., Cost Accounting: The number one enemy of productivity, *American and Inventory Control Society 26th Annual International Conference Proceedings*, 1983.
12. Hayes, Robert H. and Kim B. Clark, Why some factories are more productive than others, *Harvard Business Review*, 1986. Vol. 64, No. 5, pp.66-73.
13. Johnson, H. Thomas, Manage a living system, not a ledger, *Manufacturing Engineering*, 2006. Vol. 137, No. 6, p. 73.
14. Johnson, H. Thomas, Lean accounting: To become lean, shed accounting, *Cost Management*, 2006a. Vol. 20, No. 1, p. 6.
15. Kaplan, Robert S., Yesterday's accounting undermines production, *Harvard Business Review*, 1984. Vol. 62, No. 4, p. 95, 7 pgs.
16. Kaplan, Robert S., Measuring Manufacturing Performance: a New Challenge for Managerial Accounting Research, *The Accounting Review*, Vol.58, No.4, October 1983, pp.686-705.
17. Kaplan, Robert S., Must CIM be Justified by Faith Alone? *Harvard Business Review*, 1986. Vol. 64, No. 2, p. 87, 9 pgs.
18. Kennedy, Frances A. and Jim Huntzinger, Lean accounting: Measuring and managing the value stream, *Cost Management*, 2005. Vol. 19, No. 5, p. 31.
19. Maskell, Brian H. and Frances A. Kennedy, Why do we need lead accounting and how does it work? *The Journal of Corporate Accounting & Finance*, 2007. Vol. 18, No. 3, p. 59.
20. Maskell, Brian and Baggaley, Bruce, *Practical Lean Accounting, A Proven System for Measuring and Managing the Lean Enterprise*, Productivity Press, New York, 2004.
21. Miller, Jeffrey G. and Thomas E. Vollmann, The hidden factory, *Harvard Business Review*, 1985. Vol. 63, No. 5, pp.142-150.
22. Turney, Peter B. B., *Common Cents: The ABC Performance Breakthrough*, Cost Technology, Hillsboro, OR, 1991.
23. Van der Merwe, Anton and David E. Keys, The case for resource consumption accounting, *Strategic Finance*, 2002. Vol. 83, No. 10, p. 30.