

Practical Issues in Managerial Cost Accounting

**The first in a series of articles exploring
cost measurement issues.**

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Introduction

Necessity motivates invention. Reduced cash inflow motivates increased emphasis on resource management. This cause and effect reaction seems fairly universal. It can be observed in companies facing decreased sales revenue due to increased market competition and in government organizations facing decreased budget due to reduced borrowing and lower taxes.

Organizations experiencing resource limitations exhibit more interest in resource efficiency than they did when resources were relatively more plentiful. This is clearly the case now in government organizations as balanced budgets come closer to reality while calls for further tax reductions are still heard. Coping with constrained resources will become a way of life for the foreseeable future.

As cost management practice develops and evolves it seems obvious that cost measurement systems must also develop and evolve. Many government organizations are now finding their cost accounting systems inadequate to support the new cost management agenda. Managing cost requires views of cost not typically required in the past or supported by current data processing systems. Cost measurement for cost management is fundamentally different from cost measurement for external reporting.

This series of articles will explore practical issues in cost measurement useful in the development of managerial cost accounting systems. This, the first article in the series, will explore the diversity inherent in managerial cost accounting while differentiating it from cost accounting for external reporting. It will also explore the managerial

benefits of cost learning in improving ad hoc decision making and motivating resource consumption to be more economically rational. Both dimensions of learning will be discussed and illustrated with practical examples.

Managerial Costing Differentiation Theory

Managerial costing is fundamentally different from external reporting. Most accounting in government is external reporting done to comply with an external mandate. On the other hand, managerial costing is done in response to management's internal need for cost information as it performs its mission. Managerial costing and external reporting can be differentiated from the perspective of the reporter on several dimensions: purpose, measurement goal, measurement methodology, criteria for success, and dynamics.

Purpose: Organizations spend enormous resources on external reporting because they are required to do so. Companies are required to publish annual and quarterly reports by the Securities and Exchange Commission. Government organizations are required to submit budget reports by their legislative bodies. Even individuals file external reports, tax returns, not because they are managerially useful, but because they are required.

Managerial costing's underlying purpose, however, is simply mission support. Organizations develop this information because they need it. They need it to better manage limited resources by inducing cost-accountable behavior and by providing credible cost information for decision-making.

Measurement Goal: The goal of the external reporter is to comply with the requirements. Receivers of external reports typically have the power to enforce compliance. Misrepresentation, fraud, "cooking the books," or cheating on taxes can bring significant legal, civil, or job related penalties.

The goal of the managerial coster is to gain useful insights into the costs of the organization's processes, projects, products, and sub-organizations. Thus the measurement goal of managerial costing is learning.

Two Sides of the Same Coin

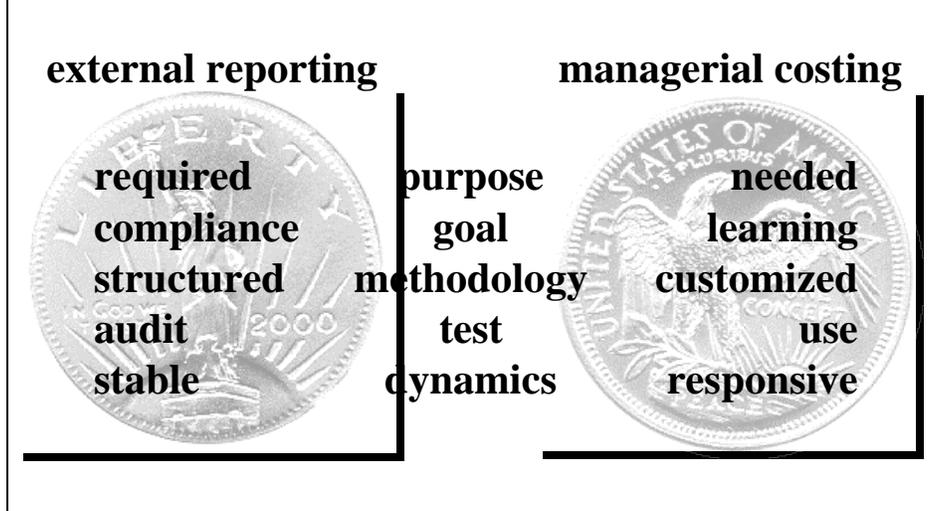


Figure 1 The same dollar can be accounted for differently depending on the measurement's intended use. Managerial costing measurement is fundamentally different from external reporting in its purpose, goal, methodology, test (criteria for success), and dynamics.

Measurement Methodology: External reporting tends to develop highly defined accounting methodology. Otherwise the reporting would be indecipherable to the external user. Generally accepted accounting principles, for example, provide readers of annual reports a common understanding of corporate performance that would be impossible if every organization used its own accounting principles.

Managerial costing, however, needs only be understandable to the manager who uses the measurement. It need not respond to an outsider's requirement for common understanding. Thus managerial costing will exhibit a functionality-based diversity that will be discussed in more detail later.

Criteria for Success: From the viewpoint of the reporter, audits determine the success of the external reporting process. Auditors test the external report for compliance to the highly defined methodology. On the other hand, managerial costing success lies in the use, usability, and usefulness of the measurement by management.

Dynamics: External reporting requirements change slowly and exhibit relative stability over time. In contrast, internal reporting requires a more flexible approach to ensure fit, functionality, and relevance as management requirements change.

Differentiation Theory Illustration

Consider an organization that should be universally identifiable: your own household. We all have an external reporting requirement to file tax returns.

Purpose: We file tax returns because we are required to do so.

Measurement Goal: We try to comply with the requirements to avoid the penalties of law for non-compliance that include fines and imprisonment.

Measurement Methodology: The measurement method is highly specified. Although “gray” areas certainly exist there are many books and manuals to provide “guidance.”

Criteria for Success: Passing the routine review or special audit is the primary measure of success.

Dynamics: Tax methodology changes infrequently and with very little input from us.

On the other hand, there are a number of management systems that we may need to track costs and other financially related variables in order to best manage our households. Examples might include a cash management system to balance our checkbook, a household budget system, an investment management system, and an asset tracking system.

Purpose: We do these things only because, and if, we decide we need them. People with plentiful resources or better things to do may decide not to balance their checkbook without penalty of law.

Measurement Goal: Our measurement goal is to inform ourselves in order to improve our quality of life.

External Reporting & Managerial Costing Differentiated

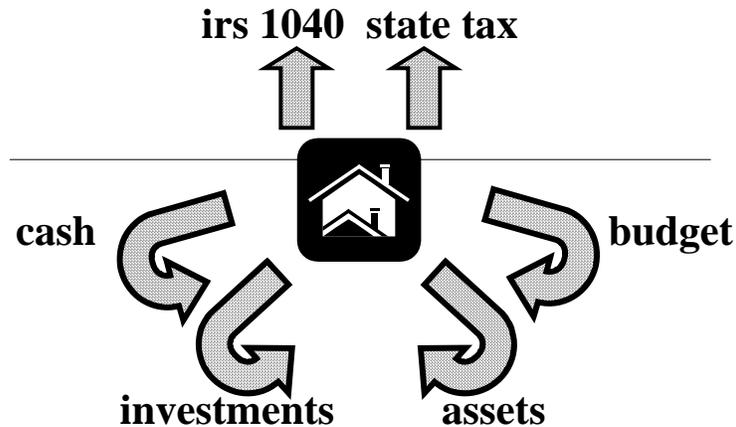


Figure 2 shows household examples of external reporting and managerial costing. The income tax returns are externally specified, and offer little information useful in managing the household. In contrast, systems to monitor the household budget, cash, investments and other assets are developed and maintained by the household manager if deemed useful.

Measurement Methodology: No one demands that we follow a rigid methodology. There are no IRS rules on balancing our checkbook, for example.

Criteria for Success: We judge these systems by whether or not they meet our needs efficiently. Why would we balance our checkbook if we never used the results? We certainly don't expect the IRS to audit our checkbook balancing. This is a management system without motivation to cheat. Who are we fooling if we cheat on our checkbook?

Dynamics: Our procedures and measurement methodology change when we decide. If we become affluent enough to round our checkbook balancing efforts to the nearest dollar, we do so immediately and without external approval.

Managerial Costing Diversity Theory

Under the differentiation theory it was proposed that managerial costing is fundamentally different from external reporting. Here a diversity theory will be proposed to suggest that there is no single best method to design a managerial costing system, since managerial costing systems are simply responses to highly diverse needs of highly diverse organizations.

In the household illustration above it was shown that managerial costing systems responded to the needs of household managers. It should be noted that a wide range of managerial costing response is possible. Some people need more information than others. Some people prefer more information than others. Different time and financial resources available to meet those needs and preferences also impact the systematic response.

Large, complex, and multi-functional organizations have a wide range of potential needs for managerial costing information. In some, cost information by output might be important. In others, a process view of costs might be more useful. Others might find cost by sub-organization to be more valuable.

Contingency theory (Gordon and Miller, 1976) suggests that environment, organization, and management style exert powerful influences on the development of accounting information systems. The tremendous diversity of environment, organizations, and management styles offer a Rubik's cube of possibilities for managerial costing. Therefore, for managerial costing purposes a single accounting approach is unlikely to work for all users.

Managerial Costing Diversity Illustration

Let's reconsider the situation illustrated above where four managerial dimensions were suggested for the household manager. The cash management system would track checkbook and currency levels. A budget system would project and control spending. The asset system might record the costs of possessions for insurance purposes and the investment system might manage stocks and bonds needed for retirement.

Consider the relative emphasis along these four dimensions as a person goes through life. The teenager is likely to be totally focused on the cash dimension and would have no use for the others. The young family with tight resources is likely to emphasize budgetary and cash systems. As the family matures, the asset and investment dimensions are likely to increase in importance while cash and budget decline somewhat. Finally the retiree on fixed income would probably manage all four dimensions. The life transition might look like Figure 3.

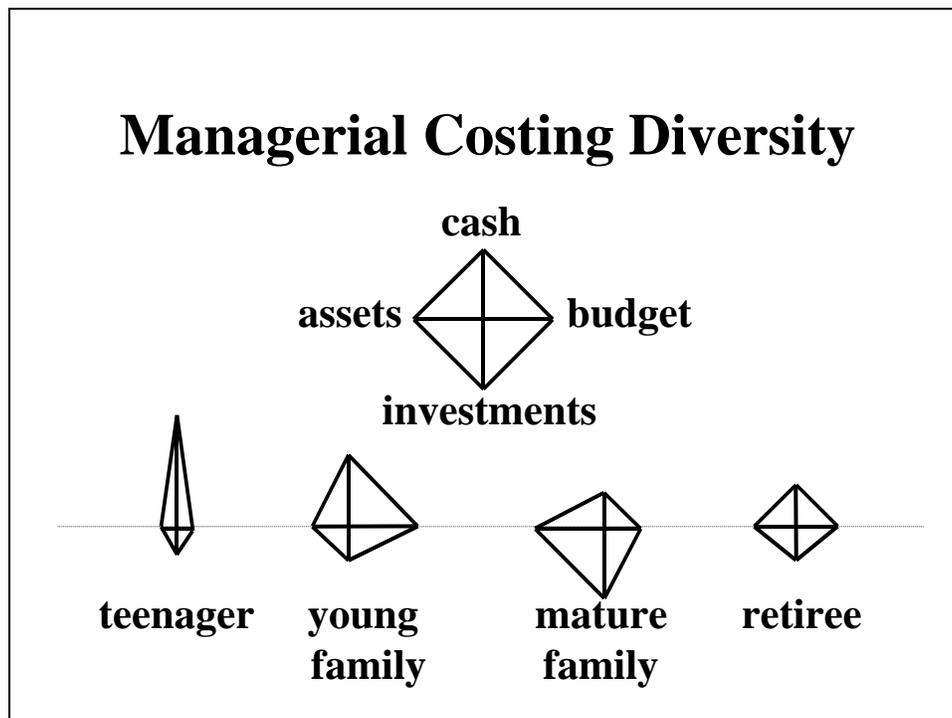


Figure 3 uses a four-axis graph to represent four dimensions of household financial management: cash, budget, investments and assets. Depending on the age of the household manager, there will be different managerial costing needs.

If these age-related differences seem logical, imagine the differences resulting from differences in income level, culture, personality, intelligence, etc. It should be obvious that no one managerial costing approach could possibly satisfy all needs without mandating a tremendous burden for those whose needs and preferences required little or no emphasis on a particular dimension.

Then imagine the infinite diversity possible when considering the federal government: arguably the largest and most complex organization in

history. Furthermore, even in the unlikely event that one system could meet federal needs, imagine the difficulty in applying that system to the even more diverse needs of all state and local governments. Satisfying the managerial costing needs of all government organizations with even a small number of systems is problematic.

Consider the General Accounting Office study (1990) that surveyed 59 federal cost accounting systems for their uses. Figure 4 demonstrates the diversity in use along four axes: management control, pricing, required costing (such as inventory valuation), and overhead distribution.

It seems clear that organizations developed meaningful responses to their own needs. None of these systems would be likely to satisfy the needs of every organization. Imposition of any single system would more than likely be regarded as an external reporting requirement rather than an internally useful managerial costing system.¹

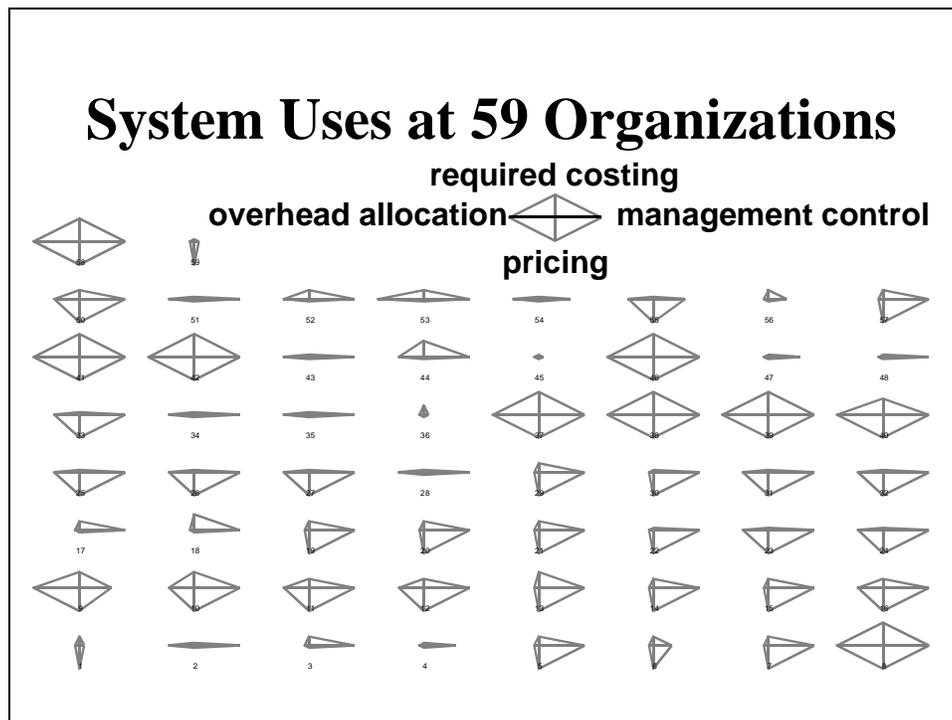


Figure 4 shows similar four-axis graphs to represent four dimensions of cost system uses in federal organizations: required costing, management control,

¹ For a more academic exposition of this topic see Geiger and Ittner (1996). Case studies of several of these organizations are also presented in Geiger (1995).

pricing and overhead allocation. Different organizations have different needs, and therefore, different systems.

Cost Learning Impacts Decision Making

Many management decisions involve choice between alternatives. Consider, for example, the choice of providing a service with government employees or by outsourcing to a contractor. This decision needs cost learning about the internal sourcing option in order to evaluate the contractor's proposal. Similar ad hoc decisions can be visualized in choosing the process, sub-organization, or individual to perform the service.

It is said that the language of management is “dollars” for good reason. Management decision making is unlikely to be very good in the absence of credible, relevant cost measurement.

Managerial Costing Decision Making Illustration

Consider the decision to choose a material for a power transmission line. Three metals are available, with varying levels of conductivity. Higher conductivity means less power loss due to resistance. In the absence of cost data, it would make sense to choose the metal with the highest conductivity.

Now consider how that decision might change knowing that the metal with the highest conductivity is gold, the second highest is silver, and the third is copper. While certain electrical applications might warrant the use of precious metal, copper is considered the most cost-effective metal for general power transmission. This conclusion can only be reached using cost information.

Cost Learning Impacts Resource Consumption

It is the essence of managerial costing systems to show what things cost in ways that affect resource consumption. Management develops and maintains managerial costing measurement processes to learn something about its costs. This learning enables more efficient resource consumption behavior.

Cost's Role in Decision Making

- Which Metal is Best for Transmission?

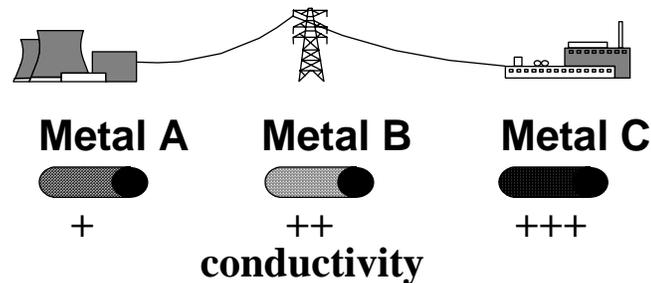


Figure 5 illustrates how cost information changes the rational decision making process. In the absence of cost information, Metal C is the rational choice based on its greater conductivity. However, knowing that C is gold, B is silver and A is copper is likely to change the decision by introducing cost into the decision making process.

It is hard to imagine efficient consumption of resources in the absence of cost measurement. The easiest way to explain this phenomenon is to review the demand curve from Basic Economics 101. The downward sloping curve reflects the increased demand that occurs when cost falls. The obvious extension of the curve shows that “free goods have infinite demand.” Unfortunately, even resources that are not free will be over-consumed if they appear to be free due to lack of cost measurement.

Managerial Costing Resource Consumption Illustration

The Navy’s R&D Laboratory in San Diego recently reviewed its cost measurement process that assigned some \$17 million of facilities related costs to the major laboratories on site. Historically, these costs had been distributed on the basis of research labor hours. Furthermore, it was considered that the site was fully occupied, that no excess space existed, and that the old and inefficient buildings on the site were essential. The new cost

measurement process more correctly measured and assigned resource consumption on the basis of square footage occupied.

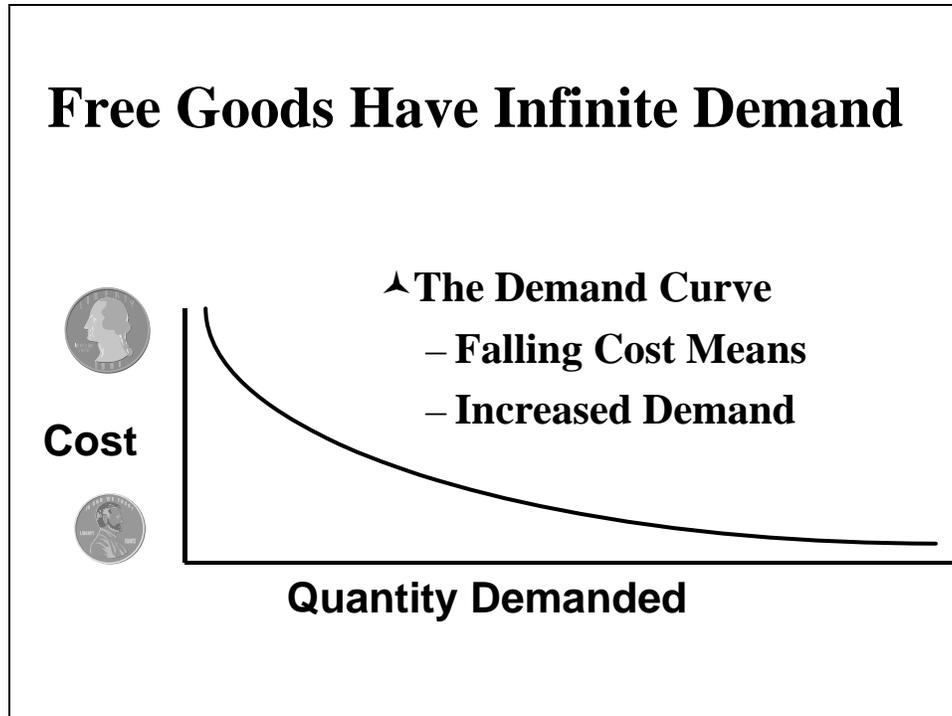


Figure 6 illustrates how the demand for free goods is infinite. Lack of credible cost measurement can make goods and services appear to be free.

Both the old and the new cost measurement processes influenced resource consumption behavior. The old method implied that space was free by not basing the cost of facilities on the space occupied. This resulted in the hoarding of space. Even if it wasn't needed anymore, it still made sense to keep space since it apparently didn't cost anything to do so and it might be needed some day. This behavior resulted in the lab that was declining in size having twice the space per capita as the most rapidly growing lab.

The new method showed managers the approximate cost of the facilities they consumed. Hoarding space only made sense when it was a free good. To the amazement of all, previously "needed" spaces were quickly vacated. Within days, thousands of square feet of space were turned back to the headquarters. In the first year some 40,000 square feet were returned.

When facilities were "free goods," nobody had excess. When the cost was recognized, managers began to use facility resources more economically and efficiently. Utilities, maintenance and repair budgets can now be reduced and resources spent on mission related needs or passed back to sponsors.

Yet, many government organizations control headcount or staff-years rather than cost. This process makes contract employees "free goods" since they do not count as "headcount." This method also does not distinguish between the cost of using a professional or a paraprofessional employee. Which background would you suppose tends to be over-consumed and which under-consumed? Why do you suppose there are so many rules and regulations, behavior controls as described by Merchant (1985) to prevent the obvious?

Summary and Conclusions

The need to manage cost in organizations with constrained resources is clear. Managerial cost measurement is a prerequisite to cost management. However, in the push to create cost measurement systems, it is important to understand the differentiation in managerial costing and external reporting.

The danger exists that an attempt at building a managerial costing system will inadvertently create an external reporting system instead. Ansari and Euske (1987) reported on one such system they found at a Navy depot. The system did not fit operations very well, but the required reports were dutifully compiled and faithfully filed. As one manager stated, "We don't use it - we comply with it - and for all the trouble it causes us, I sure hope somebody uses it." Such a system should not be confused with managerial costing.

It is also important to recognize the value of diversity in managerial costing systems. Different organizations in different environments employing different people are unlikely to be efficiently served by any one system. There is no "one size" that really does "fit all."

Unfortunately, the importance of responding to the unique requirements of individual organizations limits the value of off-the-shelf

software. It also dispels the notion that a working system in one organization can be mass-produced and plugged into others.

The objective of managerial cost systems is to learn something about resource consumption in ways that motivate more efficient consumption and enable better management decision making. Good cost measurement will eliminate free goods, create cost awareness, and give managers the information they need to make wise choices in managing constrained resources. This purpose is best served through relevant cost measurement customized to meet management's need.

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