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The Death of Standard Costing

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ABSTRACT (100-200 WORDS):

Standard costing systems are no longer adequate or effective costing systems for U.S. companies employing statistical process control, total quality control, and just-in-time inventory systems. The four purposes for which standard costing systems are used have been identified by Charles T. Horngren as follows:

1. Financial statement preparation
2. Cost management
3. Price-making and price policy
4. Budgetary planning and control

The purpose of this thesis is to demonstrate the inadequacies of standard costing systems for use in the above purposes. Although several alternatives to standard costing systems are proposed, it is beyond the scope of this paper to delineate methods for implementing these alternatives.

Supporting research was performed in the Northern Illinois University library. References cited include periodicals, textbooks, and a study by the Institute of Management Accountants. Past articles have questioned the effectiveness of traditional standard costing, however, no works were found which challenged the use of standard costing systems for the four purposes named earlier nor which proposed alternatives to standard costs.

The proposal that standard costing systems are no longer sufficient to

support today's manufacturing environment is a fairly new idea. However, research has led to the conclusion that the era of standard costs is coming to an end.

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The Death of Standard Costing

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THE DEATH OF STANDARD COSTING

Standard costing is a term which is very familiar to U.S. companies. Since its development it has replaced actual costing as the primary means of costing products and controlling operations in many of today's corporations (4).

Charles T. Horngren cites four primary purposes for using a standard costing system (7, 223):

1. Financial statement preparation
2. Cost management
3. Price-making and price policy
4. Budgetary planning and control

These four purposes are also cited by the Institute of Management Accountants in their study of standard costing and variance analysis.

The purpose of this paper is to demonstrate that the cost savings which can be obtained through the use of a standard costing system in the above mentioned capacities are no longer substantial enough to merit the use of such costs in a manufacturing environment. In light of the implementation of such practices as Statistical Process Control (SPC), Total Quality Control (TQC), and Just-in-Time (JIT), the inaccuracies inherent in standard costs not only lessen the cost savings benefit to a level where it is no longer economical to use

standard costing, but also create a need for a more proactive approach to costing.

The paper will begin with a general definition of standard costs followed by a discussion of each of the four primary purposes of standard costing and why each can no longer be justified. The paper will conclude with a brief discussion of the elements which must be established in a manufacturing environment before the elimination of a standard costing system can be successful.

Standard Costs Defined

Hornsgren defines standard costs as "carefully predetermined costs that are usually expressed on a per-unit basis. They are costs that should be attained (7, 222)." Standard costs are developed for direct material, direct labor, and overhead. With these standards established, companies can subsequently compare actual operating results with the predetermined standards to arrive at variances. Analysis of these variances provides a means of control over operations and a source of feedback for future planning.

Standard Costs for Financial Reporting

"The profession takes the position that 'standard costs are acceptable [for financial reporting] if adjusted at reasonable intervals to reflect current conditions so that at the balance sheet date standard costs reasonably approximate costs computed under one of the recognized bases.'" These recognized bases

include specific identification, average cost, LIFO, and FIFO (8).

What this statement is saying is that using standard costs for financial reporting does not follow GAAP; however, if variances are prorated to work in process, finished goods, and cost of goods sold in a manner which eliminates any material differences between actual and standard, standard costs are acceptable.

The FASB has ruled that this deviation from GAAP is allowed if there is no material difference between actual and standard (8). If a company is reporting costs at something other than actual, however, financial statement users have no assurance that there truly is no material difference. Prorated variances may provide inventory costs that are similar to those which would be reported using actual costs but they do not represent the actual cost data which is crucial for monitoring improvement in performance.

Also, with the risk of inaccurate standards and the practice of building into standards allowances for inefficiencies, financial statement users are not receiving entirely factual information. With increasing competitiveness in areas such as quality, service, and productivity, financial statement users will be looking for actual cost information to evaluate the performance of companies and to compare trends in improvement. Standard cost information which "approximates" actual is no

longer good enough to support the decisions faced by today's executives, investors, and creditors.

Companies need to realize that only by following GAAP and providing actual cost data can they portray a true picture of their financial position to the users of their financial statements.

Standard Costs for Cost Management

Probably the most significant use of standard costs in many U.S. companies is for the purpose of cost management or cost control (7, 223).

Advocates of standard costing systems view these standards as having many advantages. These advantages include more timely reports to management than if actual costs were collected (6, 12), simpler reports allowing management to focus specifically on deviations from standard rather than concentrating on actual, and finally a means of identifying the source of variances as either price or efficiency variances (6, 28).

A shift in manufacturing goals from simple cost control to cost reduction and continuous improvement has created the need for more accurate cost information than can be obtained through the use of standards (5). First, to address the issue of timeliness of reports, it must be realized that variance reports, although often provided at specific stages in the manufacturing process, are after-the-fact reports. Actual costs must be collected and subsequently compared with established standards to produce variance reports. These reports must then be given to

management who, through cost-benefit analysis, will decide whether the variance warrants investigation (7, 223). By the time the entire process is completed and a decision to take corrective action has been made, the company could already have incurred substantial costs in scrap, spoilage, or rework. Variance reports resulting from standard costing systems may be more timely than the original practice of collecting actuals, however, in today's competitive environment immediate information is crucial for success.

Next, the advantage of more simplistic reports which allow managers to focus on exceptions will be discussed. One of the primary premises upon which standard costing systems are based is the concept of "management by exception." As one author explains,

Essentially the concept focusses attention on the format of feedback reports, the format being such that it highlights differences between planned goals and actual performance. In this way, managers do not waste time on those parts of the reports that reflect the smoothly running phases of their operation (14, 20).

This idea of focussing attention on deviations from standard is reinforced by another author who states, "if he [a supervisor] takes care of the conditions which are exceptional, he can safely leave those which are normal or standard to take care of themselves (6, 20)."

Although there may be some cost savings associated with using variance reports to support management by exception, this cost savings benefit is significantly diminished when one considers the consequences of examining only those processes showing deviations from standard. Management by exception may work fine if there is no threat of competition and the goal is to maintain production at its current level, however, in most cases this type of environment is far from reality. In fact, competition is fierce (1), and to strive to maintain existing standards of production with no thought given to improvement or cost reduction is to accept the eventual demise of the company.

Also, by placing so much emphasis on variances, standard costing may actually work to cover up problems rather than identify them. Managers who know they will be evaluated based on variances will make an extra effort to meet the standards. Any problems existing in the manufacturing process will never be discovered if the manager is successful in his efforts (2).

A further problem exists in using variance reports for cost control when one considers the possibility that standards may be set incorrectly. Without accurate standards, the true value of the variances will never be known. In evaluating the accuracy of standards, several factors must be considered. First, in setting standards and tracking actuals, companies usually do not calculate actual costs of each product. If these costs are never allocated by product, it is impossible to ever know the actual cost of a product to determine the accuracy of a standard.

Second, the appropriateness of the standard must be carefully scrutinized. As Calvasina and Calvasina point out, there are several "games" corporations may play causing their standards to be completely inaccurate (3). Some of these games include failure to revise standards as requirements change, revision of standards based on time periods rather than manufacturing changes, calculation of an as-if variance when production methods are changed rather than revising the original standard, and failure to calculate different standards for products with different requirements (3). Any one of these inaccuracies in standards would render variances useless.

A final perceived advantage of using standards for cost control is the structure of standards allowing the classification of variances as either price or efficiency variances. Standards are structured with the intention of attributing variances to specific areas such as materials, labor, or overhead, however, the standards do not identify the specific causes of the variances (11). It is only through investigation by management that the causes can be identified and corrected which leads back to the question of whether variance reports are timely enough to be effective tools for cost control.

The usefulness of standard costing for cost control purposes is reaching an end in today's manufacturing environment. The emphasis has shifted from cost control and meeting standards to cost avoidance and continuous improvement. This shift is evidenced by the implementation of SPC, TQC, and JIT by many of

America's largest manufacturers; and, it is the implementation of these practices which eliminate the causes of many of the variances standard costing systems are used to control.

The IMA defines cost control as "a process of maintaining performance at as near existing standards as possible (12, 9)." This definition contains two words which can no longer exist for companies wanting to successfully compete in the global market -- "maintaining" and "existing." It is no longer good enough to maintain existing standards. Corporations instead should be constantly setting new goals, striving for higher quality, and looking for opportunities to reduce costs. This new proactive approach to manufacturing can be accomplished through the use of SPC, TQC, and JIT.

For example, SPC uses such tools as histograms, trend charts, and control charts to track the performance of a particular process. SPC establishes acceptable levels of deviation for a process. Corrective action can then be taken for any problems causing a process to fall outside of the acceptable levels. By decreasing the range of acceptable deviation a corporation can encourage continuous improvement (13).

SPC eliminates the need for standards by providing more current information than variance analysis and by reducing or eliminating many of the causes of the variances reported in a standard costing system. Unlike variance analysis which requires managers to investigate the cause of the variance, SPC can identify the exact point when a process goes out of control as

well as allow for immediate response. Under an automated SPC system, for instance, "a factory line worker could pull the plug on a manufacturing process the moment it goes out of whack - which would save time and materials otherwise wasted on scrap or rework (10)." Implemented correctly, SPC can provide immediate production information and thus greatly reduce or even eliminate variances caused by scrap or rework.

Moreover, standard costing ignores any costs which do not deviate from standard, SPC tracks the entire sequence of a manufacturing process, and therefore all potential areas for the creation of costs. Only by looking at actual costs can a company gain an understanding of how all costs are created. By monitoring the entire process, SPC can track trends in the process as well and thus "predict when a process will begin producing defects (2)." This proactive approach allows problems to be corrected before they happen and allows costs of scrap or rework to be avoided.

The inadequacy of standard costs for cost control is further apparent when looking at the nature of competition today. Processes are changing so fast that a standard costing system is no longer effective. For example, new products are being introduced constantly. By the time standards are set, they are outdated and inaccurate.

All variance analysis under standard costing occurs after production has taken place and costs have been incurred. This reactive approach to cost control is not compatible with a JIT

inventory system. The use of JIT gives an organization a comprehensive approach that can be used to proactively eliminate waste in cost and time. For example, companies negotiate long-term contracts with suppliers who agree to provide on time deliveries of low cost and high quality materials. In this situation, calculating a material price variance is irrelevant. Another example is the elimination of unnecessary movement of parts from one machine to the next by moving the machines next to each other. This results in a savings of material handling cost without having to set a standard or calculate a variance.

The use of TQC eliminates unnecessary inspections by making the process operators responsible for quality. The number of defective units is reduced by identifying the first defect as it is made. Many potential defects are never made because the operator understands what the customer wants.

Standard Costing for Price-making and Price Policy

Four benefits of using standards in place of actuals for pricing purposes have been identified by the IMA. These benefits include the fact that standards exclude excess inefficiencies which cannot be recovered in the selling price, standards can be adjusted easily for changes in material prices or labor rates while standards used for inventory costing and cost control can remain unchanged until year end, standards are based on a normal level of activity, and finally costs other than manufacturing costs can be easily allocated to products using standards (12, 18).

To begin, it must first be noted that regardless of the fact that corporations may collect substantial cost data for pricing purposes, the price of a product is ultimately determined by the forces of supply and demand. As is noted by Robert Koehler, "Customers do not care what costing method a company uses." In the end, elasticity of demand is the determining factor in all pricing decisions (9). With this in mind, product pricing can be discussed as a tool for determining whether costs will be recovered in the selling price and for making product mix decisions.

First, it has been proposed that standard costs are more consistent than actuals for making pricing decisions because they eliminate costs caused by excess inefficiencies. This statement does have merit in that all units of a product to which a standard applies are considered to cost the same. However, this use of consistent standards fails to recognize the true cost of a product. A company using standards to cost their products and their inventory run the risk of making incorrect product mix or make or buy decisions, if the standards used are not accurate. There are many ways in which companies can distort standards, one of the most obvious being the failure to update standards. As noted by the IMA, "The amount of expense and effort involved in revising standards is quite large when many individual standards are in use (12, 12)." If this expense keeps a company from properly revising standards, it could mean an extremely costly mistake.

Even if standards are set correctly, pricing based on these standards will fail to reflect the true cost of a product. Allowances for inefficiencies are built into the standards thus accepting a certain level of costs which are unnecessary (11). This contradicts the philosophy of continuous improvement and can lead to a decline in competitive advantage if competitors can make the same product for less.

The argument that standard costing benefits a company by allowing for changes in material or labor rates without changing the rates carried on the books is no longer as valid as it once was. In order to support continuous improvement a company should always be aware of actual costs. By leaving outdated standards on the books, the cost data becomes useless. Also, with the widespread use of JIT, changes in material and labor rates should be greatly diminished. Long-term contracts with suppliers will allow companies to know material prices in advance. The number of different labor rates will decrease under JIT, as people are trained to do multiple tasks.

Rather than using standard costs, a company would be wiser to replace the standards with actual costs. Forecasting actuals would provide more accurate cost data as well as encourage continuous improvement making the company more competitive in the long run.

The argument advocating standards because they are based on a normal level of activity is based on the idea that application of overhead will cause variation in costs due to production

volume (7, 223). This may be true, however, in most companies, fixed uncontrollable costs are not allocated to products but instead to departments (12, 11). Failure to allocate these costs to products makes it impossible to determine the accuracy of standard costs as actual costs will never be known.

The use of a JIT inventory system greatly limits the validity of this argument, also, in that a "normal" level of production will now be much harder to determine. Since the company produces to customer demand (16), building up inventories to level out production will no longer be possible.

The final proposed advantage of standard over actual costs can be refuted by looking at the nature of competition as discussed earlier. Baker proposed that the life cycle of products has been greatly shortened by advances in technology. This being true, the introductory and growth stages of the life cycle will become crucial as many products will never make it past these stages. During these stages, production costs are secondary to other costs such as research and development, marketing, and promotion. Standard costing systems are highly inadequate for placing a value on costs such as these (1). These intangible costs are very difficult to set standards for as they differ for every product produced.

In addition, in times of rapid growth, fixed costs such as rent or administrative salaries may become variable (1). If standard costs were used, these changes in the nature of certain costs may not be recognized. It would be much more beneficial for

a company to forecast actual costs. To maintain market share companies now need to know exactly how much their products are costing rather than making pricing decisions on preset standards which tend to mask inefficiencies. In today's environment there is little margin for error.

Many of the arguments advocating standard costing find their strengths in simplicity. Standard costs serve to make inventory costing and pricing decisions more expedient. The fact remains, however, that cost data based on standards is not accurate. In the absence of competition, these standards may be sufficient; but, with the need for continuous improvement, companies must first know the actual costs of their products before they can aim for ideals.

Standard Costing for Budgetary Planning and Control

Standard costs are viewed as greatly simplifying the budgeting process as well as providing substantial cost savings by facilitating budget preparation. Standard costs are considered consistent and highly reliable costs by manufacturers as these costs are based on careful studies of product requirements. Standard costs are seen as being easily converted to material and labor requirements and effective for building product costs when production volume or product mix vary (12, 17). Horngren advocates the use of standard rather than actual inputs when constructing a flexible budget explaining that budgeted production should not be less tight simply because of

inefficiencies built into the budget when actual costs are used (7, 223).

Although the characteristics of standard costs seem to provide an advantage over actual costs when constructing a budget, what many advocates of standard costing fail to realize is that by using standards the budget actually becomes less useful. Standard costs may serve to eliminate some inefficiencies which would be created using actuals, however, by using standards, other inefficiencies are built into the budget. The IMA purports that "the [standard] costs to be used for budgeting should reflect the inefficiencies which can be expected in the use of material, the application of labor, and the utilization of facilities and services (12, 17)." Many corporations employing standard costs use currently attainable standards which allow for "normal spoilage, waste, and nonproductive time (7, 231)." Corporations using these standards investigate variances only if they exceed "what is regarded as normal and incorporated in the standard... (11)", therefore, accepting a certain amount of inefficiency.

With the widespread use of SPC, TQC, and JIT in today's manufacturing environment, it is no longer appropriate to accept any inefficiencies as "normal." One writer explains that SPC "make[s] it possible to produce every piece and do every job right the first time - eliminating waste and rework (15)." Although this may not be attainable immediately, it is still a necessary goal for which to strive. In addition, the ideal upon

which JIT systems are founded is production with "zero defects (16)." By using a traditional standard costing system with allowances for scrap built into the standards, corporations are undermining the goal of continuous improvement. In order to adequately monitor performance, all scrap should be deemed unnecessary and monitored separately from the other costs of production.

Instead of using standards, a company could produce more useful budgets by using some measure of actual costs. For example, a company could forecast actual costs monthly after applying the idea of continuous improvement or use a three-month moving average of actuals. Forecasting continually improved actual costs would encourage workers to strive for the ideal of zero defects at the lowest possible costs.

A three-month moving average of actual costs used as an input to the budget would not only encourage improvement, but would allow companies to monitor their overall performance by observing trends in actual costs. This new method of evaluating performance would eliminate any unnecessary allowances for inefficiency being built into the budget and decrease the chance of evaluating performance incorrectly because of inaccurate standards.

Budgets prepared using actual costs are consistent with the goals of SPC, TQC, and JIT. Budgets at actual point out problems rather than masking them and encourage companies to attain the highest levels of quality. Any cost savings that could have been

realized once by preparing budgets using standard costs are no longer significant enough to outweigh the inefficiencies inherent in the standards. The incremental costs created in utilizing actual costs would be substantially less than the cost of lost market share due to poor quality products or inappropriate decisions.

Further, the use of budgets at standard for individual performance evaluation is no longer the most appropriate means of control. With the shift in manufacturing goals from strict efficiency to high quality, and with the application of continuous improvement, performance of individuals would be better evaluated based on improvements in quality and productivity. Meeting the budgeted standards is no longer as important. If the quality is not there, the numbers mean nothing.

ENVIRONMENT FOR ELIMINATING STANDARD COSTS

Most of the arguments against the use of standard costing have been based on the need for more accurate and more timely information. This need is created by the shift toward continuous improvement (5). Continuous improvement is best supported by the use of actual costs, however, a company must first be proficient in SPC, TQC, and JIT before standard costs can be eliminated entirely.

Many of the benefits of standard costing systems lie in their simplicity and their ability to provide more timely reports to management. These benefits are legitimate if one considers

the use of standards in an environment that is not supported by SPC, TQC, and JIT. It is only through the successful implementation of these practices that a company can achieve the levels of quality which merit the elimination of standard costs.

The practices of SPC, TQC, and JIT work to eliminate the variances exposed by the use of standards by providing immediate feedback about manufacturing processes and greatly increasing the quality standards for which a company strives (10). These practices identify problems at the source and make possible proactive rather than reactive cost control.

Without the performance monitoring abilities of SPC, TQC, and JIT a company must continue to rely somewhat on traditional variance analysis to identify problems and inefficiencies in the manufacturing process.

CONCLUSION

The death of standard costing is near for organizations that are striving to remain competitive. In a world of competitors that are working toward the ideal, "standard" is no longer good enough. Companies must now focus on actual costs as a means of motivation and measure of performance. Those failing to do so will be left behind.

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