



## Accounting for Lean: Adopting Lean Accounting to Promote Lean Behaviors

*There is a lot of confusion in the Lean world today over the role that the accounting function must play in order to facilitate a successful Lean transformation. There are two schools of thought: applying Lean concepts to drive waste out of the accounting function itself (known as Lean Accounting) and modifying the accounting process to properly promote Lean behaviors (known as Accounting for Lean). This paper will discuss the latter, as it is more relevant to those managing a Lean transformation. Please note, however, that the two go hand in hand. Without taking out the waste in the accounting process, accountants will find that a majority of their time will be spent on non-value-added activities and will be viewed as historians. Rather, accountants need to be proactive and play the role as navigator.*

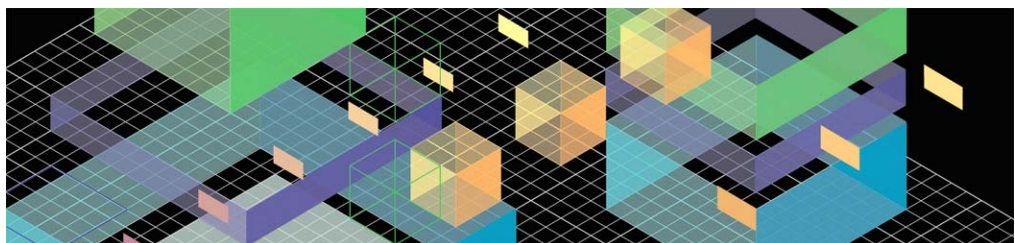
*Traditional management accounting practices were developed by accountants to accommodate a batch-and-queue environment. Batch-and-queue environments are characterized by non-Lean practices such as functional scheduling, “push” inventory management systems, amortization of long set-up times and maximization of overhead absorption variances. Before we can talk about Accounting for Lean concepts, let’s explore some areas of traditional accounting practices which promote dysfunctional Lean behaviors.*

### **The Problems with Traditional Batch and Queue Accounting**

Although management accounting covers many areas, the following discussion will focus on some of the fundamental areas of traditional accounting which contribute to dysfunctional behaviors in a Lean environment.

#### **1. Use of Standard Costs and Variance Analysis**

Standard costs are estimates of what you ‘think’ a product will cost to manufacture, based on projections and forecasts. Typically, standard costs are established annually, in concert with the annual budgeting cycle. One could argue that standards are wrong from the



moment in which they are developed. Typical cost management systems then use these standards and compare them to actual costs, which generate a variance to the standard. Variance analysis many times lead to decisions that are counter to Lean thinking philosophies.

Examples of traditional variance analysis, and their contribution toward dysfunctional decisions, are as follows:

- (A) **Purchase Price Variance (PPV):** The key dysfunctional behavior associated with measuring and rewarding purchasing professionals on PPV centers around the subject of volume discounts. One way to avoid unfavorable variances is to buy in high volumes, which would yield quantity discounts, thus lowering the unit cost for each item. However, this practice promotes the building of excess (and eventually obsolete) inventory balances.
- (B) **Volume (Absorption) Variances:** Volume variances reflect variances in fixed manufacturing costs (overhead) which arise when the actual production level (volume) differs from the expected level used in the computation of predetermined fixed overhead rates for product costing purposes.

The use of an absorption variance as a measure of manufacturing performance supports the notion of producing as much as possible, regardless of customer demand. In fact, the smart production manager learns quickly (after being beaten-up for unfavorable absorption variances), that certain products provide more absorption credit than others do. Eventually, these products are produced regardless of demand requirements. Soon, customer service levels slip while the inventories of these high-absorption products increase. Clearly, the use of absorption variances as a control device sends the wrong signals.

- (C) **Kaizen (Continuous Improvement):** One of the fundamental Lean philosophies is the notion of kaizen, or continuous improvement. Traditional variance analysis, however, does not support this notion. For example, the following information illustrates four months of variance tracking for a particular product:

	Standard Cost	Actual Cost	Variance (UF)
<b>January</b>	<b>\$1.00</b>	<b>\$.85</b>	<b>\$.15</b>
<b>February</b>	<b>\$1.00</b>	<b>\$.90</b>	<b>\$.10</b>
<b>March</b>	<b>\$1.00</b>	<b>\$.95</b>	<b>\$.05</b>
<b>April</b>	<b>\$1.00</b>	<b>\$1.05</b>	<b>(\$.05)</b>

Using traditional standard cost variance analysis, it would appear that for the first three months we have registered favorable results because we ‘beat’ the standard. However, upon further inspection, we find that each month our actual costs have increased. Despite the fact that we are favorable to standard, we are showing an unfavorable trend. In the spirit of continuous improvement, these results are strictly unfavorable, regardless of the fact that our variances are favorable for the first three months. If you believe in kaizen, you must subscribe to the notion that favorable trends are measures of success. As pointed out, variance analysis could be misleading.

**2. The Problem with Traditional Labor Accounting**

Traditional cost accounting defines direct labor as the labor cost of those workers who are actually engaged in the physical manufacturing of a product. All other labor costs are classified as indirect labor and treated as a part of factory overhead costs. In order to

accumulate these different labor classifications, a labor reporting system is required. The use of time cards as a labor collection device is common in a traditional environment. Once recorded, a whole host of activities is required by the accounting department to properly segregate, classify, and report this labor information. Additionally, a staff of Industrial Engineers is required to study and administer the detailed routings throughout the shop. The functions performed by the IEs and accountants who track this data represent waste and should be eliminated.

In a Lean environment, the focus needs to be on multi-skilled operators who can work within several different labor classifications. Factory employees are expected to perform activities that are classified as direct and indirect labor by traditional cost accounting definitions. For example, in addition to working directly on the manufacture of a product, a multi-skilled operator will be expected to perform tool changes, complete set-ups, maintain equipment, clean the work place, take part in kaizen activities, etc. These, by traditional definition, are indirect in nature.

As we try to develop our multi-skilled workforce, it is critical that we do not discourage their growth. Traditional measures such as the ratio of direct labor to total labor and direct labor efficiency will encourage shop supervisors to circumvent those things that are not considered direct labor. The result is an unfavorable operating situation despite favorable financial performance.

Labor, as a percent of total costs, runs less than 20% in many manufacturing companies. Other items, such as direct material and other overhead expenses should be the focus of continuous improvement. However, many traditional cost accounting systems dedicate a majority of their resources to the collection and reporting of labor information. Since the significance and classification of labor is less important in a Lean environment, cumbersome labor collection systems should be discontinued. Labor should be treated as an overhead expense item and charged to the appropriate Value Stream.

### 3. **Capital Expenditures**

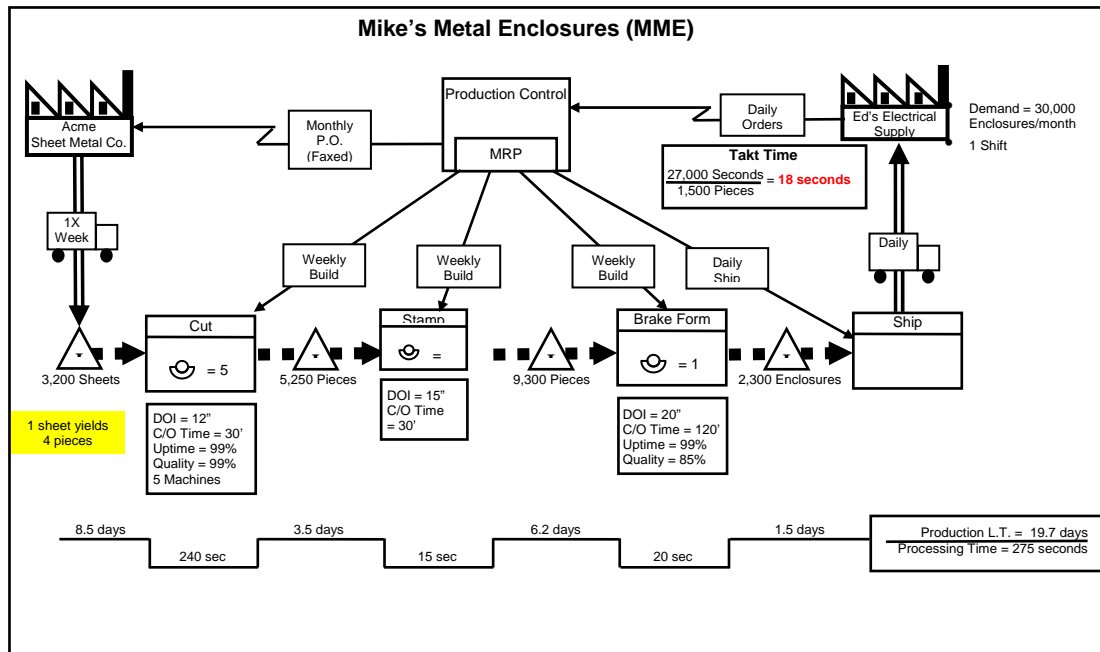
Traditional capital budgeting methods have taught us that a capital acquisition should provide a targeted payback, or rate of return, if it is to be considered a financially sound investment. If the capital investment did not satisfy this hurdle rate, it would be better to invest the same funds in some other financial instrument (i.e., bonds, stocks, etc.). These ground rules forced the manufacturing group to financially justify all capital requirements in terms of net present value (NPV), return on investment (ROI) or some other payback method. It is not to suggest that financial considerations should be ignored in a capital budgeting decision. However, in a Lean environment, there are other considerations that need to be taken into account:

- Will it be able to handle the TAKT time for future requirements?
- Can the speed of the equipment be adjusted accordingly to accommodate varying demand levels?
- Can the old equipment be improved and modified to meet ongoing demand?
- Does the new equipment have the required Cpk to meet quality standards?
- Can the new equipment be easily changed over from model to model?
- Is the new equipment small and flexible, easily fitting into the existing cell design, or is it a large “monument” which will create a bottleneck operation?
- Will you need to invest in technical resources to service and maintain the equipment?
- Will there be specialized training required to operate the equipment?
- Is there another piece of equipment within the company that will suffice?

Traditional batch and queue accounting focuses on maximizing the utilization of equipment. Similar to the discussion on absorption variances, this measure promotes the building of unnecessary inventory as well as discourages the required equipment changeovers required to meet customer demand.

### Accounting for Lean

As companies move toward a Lean business model, they typically reorganize their operations around value streams. A value stream is defined as all of the value added and non-value-added activities required to bring a product or service through the main material and information flows. Value streams cut across functions and the ultimate goal is to eliminate waste from the process, with the net result of shorter lead times, lower costs and higher quality. The value stream map below displays the material flow along the bottom of the map and the information flow across the top:



The main idea behind value stream accounting rests with the concept of control and accountability. Typically, an entire value stream is managed by a value stream manager. This manager is responsible for all of the activities that occur within the value stream. So, it follows that our accounting methodologies should follow this line of thinking. Value stream accounting has the following characteristics:

- Value streams are treated as a stand alone business unit. Each value stream will have its own profit and loss statement as well as a balance sheet. This allows the value stream manager to make the required decisions to drive profitability and growth within the value stream.
- Overhead costs are directed to each value stream. This results in less arbitrary overhead allocations as most of the overhead costs can be attributed to a specific value stream. The implications are that product costs are more accurate and direct accountability for cost control is enhanced.

- By focusing on the entire value stream, managers will be encouraged to maximize the performance of the entire value stream, not just specific functions or departments.
- Performance metrics (financial and non-financial) are developed which promote controlling one's destiny as well as accountability.
- Working capital and fixed assets are more effectively managed within the value stream. For example, excess capital within a value stream will have an adverse impact of the value stream's profitability. Building of excess inventory will directly affect the inventory and balance sheet position of the value stream.

All of the traditional batch-and-queue accounting practices are discarded when moving toward value stream accounting. For example, variance analysis to standard costs is not utilized. The focus instead is on actual costs and continuous improvement trends.

## Summary

Moving away from traditional accounting methodologies takes the support and understanding of senior management. The accountant cannot lead a Lean transformation. The accounting system must be transformed within the context of this transformation. As the accountant becomes more efficient in satisfying their fiduciary requirements (payroll, accounts payable and receivables, corporate financial reporting, SEC and IRS requirements), they can transition toward becoming navigators and business partners to value stream leadership. Historically, accounting has stymied and even killed off many Lean transformations by insisting on batch-and-queue measurements that supported dysfunctional behaviors. These measurements have provided the wrong signals to management as to the success of moving toward a Lean culture. It is imperative that the accounting community become educated in Lean through hands-on involvement. Only then can the accountant successfully lead the revolution that must take place in the accounting function.

## About the author

### Mark DeLuzio, President & CEO

Directly mentored by the architects of the Toyota Production System (TPS), Mark DeLuzio is the founding partner & chief executive of Lean Horizons Consulting and is recognized as one of the country's foremost experts on enterprise-wide transformation through strategic deployment and Lean disciplines. The former Vice President and Corporate Officer of Danaher Corporation, Mark is the architect of the widely acclaimed Danaher Business System.

## About Lean Horizons Consulting

Lean Horizons Consulting offers integrated competencies for achieving enterprise-wide performance transformation to global firms in the manufacturing, energy, consumer products, financial services, pharmaceutical, bio-technology and healthcare sectors. Lean Horizons further serves investment firms regarding acquisition integration and rapid value creation. Lean Horizons aligns Lean and Six Sigma capabilities with the deployment of enterprise strategy to deliver unique, end-to-end solutions that incorporate the organization's business model, core processes, functions and information systems. Lean Horizons' field force of internationally experienced industry professionals bear direct lineage to the Toyota Production System, lending a unique combination of explicit and tacit knowledge to Lean performance transformations.



*Strategically Creating Value through the Elimination of Waste*

**Lean Horizons Consulting - Americas**

P.O. Box 1402  
Glastonbury, CT 06033 USA  
Phone: Intl +1 (860) 537-6786  
Email: [getlean.am@leanhorizons.com](mailto:getlean.am@leanhorizons.com)

**Lean Horizons Consulting – Europe, Middle East, Africa**

Stratford-upon-Avon  
Warwickshire, CV37 8PA UK  
Phone: +44 (0) 1789 450484  
E-mail: [getlean.ec@leanhorizons.com](mailto:getlean.ec@leanhorizons.com)

**leanhorizons.com**

Copyright ©2008 Lean Horizons Consulting, LLC. All rights reserved.