

# The Lowdown on Lean Accounting

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*Should management accountants get on the bandwagon—or not?*

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The Lean Revolution is off and running! But before we get too far in transforming businesses, especially the management accounting support for Lean (aka Lean Accounting or LA), it's important to slow down just a bit and address some critical questions in the spirit of advancing the thinking for the benefit of practitioners. In this regard we want to answer two questions: (1) Is Lean Accounting a viable replacement for, complement to, and/or supplement for current and evolving management accounting approaches? (2) Does Lean Accounting have the capability to advance two of the more forward-looking roles undertaken by the management accountant: decision support and enterprise optimization?

# Our concern isn't with Lean "extremism" in terms of its potential to help transform the profession—it's with those who suggest that Lean Accounting is THE ONLY answer.

Lean thinking, the foundation for Lean Accounting, has a history of demonstrable benefit and is likely to have a significant impact on the U.S. business landscape. Lean refers to the management system of applying Lean principles to operations, and Lean Accounting refers to attempts to derive monetary management information based on Lean principles. This unique bond between an operations flow design approach (Lean) and a management accounting approach means the process of coming to terms with LA has a number of distinctive traits. The management accountant is required to gain an understanding of Lean thinking, principles, and practices, and a manufacturing shop floor emphasis requires that those from service industries dig a little deeper before they will be comfortable. A careful scrutiny of LA literature (books, articles, the Lean Accounting Summit in September 2006, etc.) reveals a number of assertions (and/or strong implications) related to management accounting that require technical analysis and broader, more open debate for the benefit of practitioners. The process of evaluating LA requires addressing four aspects of the case for it as presented: (1) LA's assertions as stated in the literature, (2) understanding the implications of these assertions, (3) questioning the operations-centric view of LA, and (4) evaluating LA's decision support capabilities.

It's important to point out up front that the primary purpose of this article is to provide a fair assessment of Lean Accounting as viable today or its potential to provide benefit in the transformation of the profession. In the "Lean land rush," many assertions have been made that can easily be construed as declarative statements of fact: Accounting is the problem, other approaches have no place in the world of Lean, and more. These statements have been made in numerous Lean articles and books, at the Lean Accounting Summit, and in other forums. When they previewed this article, thought leaders in the Lean Accounting community questioned whether the three assertions included for elaboration would result in a distorted view of or misinformation with regard to Lean Accounting. We subsequently provided references

that point to the pervasiveness of these assertions in the LA discourse. As we already said, we believe that "Lean thinking" has real transformational potential but that broader perspectives, fewer declarative statements lacking empirical evidence, and open debate including technical analysis are required if management accounting practitioners are to benefit in the end. (You can view and download presentations from the Lean Accounting Summit at [www.leanaccountingsummit.com/2006presentations](http://www.leanaccountingsummit.com/2006presentations). These materials provide background, cases, and more and, in some cases, the "assertions" that we keep referencing.)

Our concern isn't with Lean "extremism" in terms of its potential to help transform the profession—it's with those who suggest that Lean Accounting is THE ONLY answer. We strongly believe that exploration, understanding potentially complementary management accounting approaches, and fact-based discussion will help achieve the ultimate objective: providing transformation approaches to help practitioners in an increasingly complex and competitive business environment. The profession doesn't need a repeat of the "ABC cult," the "EVA cult," or "pick your 'save the world'" cult in the Lean environment, so this article is intended to also serve as an intervention and a wake-up call for management accountants to get engaged from a leadership and technical perspective.

## COMING TO TERMS WITH LA ASSERTIONS

There are at least three assertions in Lean Accounting that justify closer scrutiny: (1) Accounting is the problem, (2) all conversion costs (in Lean Accounting, conversion costs are defined as all value stream costs except materials and purchased outside services) are fixed, and (3) claims for support of external reporting.

### Accounting Is the Problem

First, in the reasoning by some in the Lean movement that *accounting is the problem*, LA uses a weak straw person as its target and basis for the call to action—full

absorption standard costing, which is infamous for its deficiencies in decision support. In the LA discourse, examples abound that highlight the perils of arbitrary indirect cost allocations in full absorption standard costing. In particular, the dangers of allocating overhead costs are highlighted. No one objects to the examples sighted because the credibility of full absorption standard costing was already demolished by activity-based costing (ABC) in the 1980s and early 1990s.

Nevertheless, the discussion often proceeds as if full absorption standard costing and all other traditional approaches are equally flawed. But the fact is that a traditional approach like direct costing doesn't absorb any overhead or even fixed costs; an approach like Resource Consumption Accounting (RCA) makes no arbitrary assignments at all—i.e., the principle of causality governs every assignment (the word “allocate” refers to arbitrary cost mapping and the word “assign” to cost mapping based on cause-and-effect relationships—i.e., applying the principle of causality); and ABC has made advances in better understanding capacity costs and simplified data collection. In addition, many management accountants

## The Lean Accounting Value Stream

Lean Accounting follows the Lean operational principle of one-touch flow design for the management accounting information it provides. LA proposes a single cost collector—the value stream. A value stream is defined as all the activities required to bring a product or service from conception through to the customer, including related information processing, logistics, and the collection of money.

From a management accounting perspective, the total cost of all the resources plus any product material and outside service costs are included in the value stream cost object. The value stream income statement serves as the primary tool in providing monetary information for decision making and reflects revenues from which direct material and all people, machine, and other conversion costs are deducted to obtain value stream profit. A value stream profit margin (profit divided by revenue) is calculated. Although an average product cost is sometimes calculated, Lean Accounting insists that product unit cost isn't necessary—in fact, not needed—for decision making as a Lean enterprise.

(including one of the authors, who was an SBU CFO at a large telecom) have used ABC for “process costing”—integrated cross-functional processes tied together to produce an output (similar to LA's value stream). Making comparisons to a weak sister (full absorption costing) and putting all advances of the past 20 years into the same trash bin aren't in the spirit of fact-based debate on behalf of the practitioner. We have long stated that the management accounting profession needs to accelerate its transformation to increase its relevance, but comparisons to methods everyone knows are weak and to the “accountant” from 20 years ago (numbers cruncher in the back office vs. strategic business partner on the front lines of decision making) create an artificially wide gap between the current and aspirational states of the profession.

### All Conversion Costs Are Fixed

Second, the assertion—or very strong implication—in the LA literature that *all conversion costs are fixed* isn't unique to Lean Accounting. The Theory of Constraints (TOC) can probably be credited with this view of cost behavior. This view is a hallmark of so-called simple solutions to management accounting and typically considers material cost as the only cost relevant to a whole host of decisions. As we will show, what's implied is that these “fixed costs” are actually unavoidable costs. This practice (the “blended cost concept error”) confuses operational cost concepts (fixed and variable) with decision cost concepts (unavoidable and avoidable).

This error is least detrimental for decisions dealing with small changes within the relevant range when the two sets of cost concepts more closely align (e.g., a variable cost isn't that different from an incremental cost). But wider-ranging decisions that affect step-fixed cost relationships pose a serious challenge because the avoidable cost in these instances comprises both fixed and variable costs. The blended cost concept error results in understating the benefits of wider-ranging decisions and eliminating these decision options or simply ignoring them (refer to the make-buy example below). The error also raises another question for Lean Accounting: unavoidable under which specific decision scenario? The principle of “different costs for different purposes” has been well understood in management accounting for a very long time.

### LA Can Transform External Reporting, Too

Third, when it comes to *support for external reporting*, Lean Accounting strongly implies that it has the ability to

transform traditional financial accounting (external reporting of financial and notes disclosures based on GAAP/FASB) just as it aspires to transform management accounting (decision support, planning, and control). Yet our review of the existing Lean literature and presentations at the Lean Accounting Summit reveal that the only meaningful support in the area of financial accounting is inventory valuation. Other integration points with financial accounting are rarely mentioned. Does supporting them run foul of Lean's aversion to transaction recording (too complex; why does the shop floor need transaction-level detail to run the business?) and LA's notion of a single cost object—its value stream? The need to isolate and capitalize certain costs (e.g., asset under construction), collecting and invoicing costs incurred for work done internally and paid for by an insurer or, similarly, work paid for by the original equipment manufacturer (OEM) under warranty or for recalls doesn't seem to be considered by LA as "required" complexities under the law (add Sarbanes-Oxley to the mix).

The problem gets worse in service industries. For example, consider a repair facility that receives the customer's item (e.g., a jet engine) or healthcare—both are required to provide the customer a detailed invoice that's different for every item repaired or customer served.

Statement of Financial Accounting Standards (SFAS) No. 151, "Inventory Costs—an amendment of ARB No. 43, Chapter 4," requires that excess/idle capacity cost be reported as a period expense and not absorbed to the product. This also poses a challenge for Lean Accounting. Excess/idle capacity costs exclude any variable cost. For example, preventative machine maintenance is a fixed cost and must be included in excess/idle capacity costs, while repairs are considered a variable cost and would be excluded. We don't believe that Lean Accounting can make this distinction because of its blended cost concept error, which seems to consider all machine-related costs as fixed.

### IMPLICATIONS OF THESE INSIGHTS

As we said, there seems to be a land rush to grab the gold mine potential some see in the Lean movement that's similar to the ABC land rush of the 1980s and 1990s, which—at least initially—created clutter and confusion, not costing advances for practitioners. For example, one presentation at the Lean Accounting Summit described rolling outlooks and other means to improve (if not

replace) today's planning and budgeting processes as "Lean planning." An approach to simplify Sarbanes-Oxley compliance was referred to as "Lean SOX." Business process improvement, transformational change, and elimination of wasteful practices are *not* the sole domain of Lean, and expanding the net in this manner impacts credibility. But the planning and compliance ideas are good ones and should stand on their own as delivering transformational value to practitioners.

The assertion that *accounting is the problem* is too simplistic and impairs the credibility of Lean Accounting as an evolving body of knowledge with transformational potential. For example, the claim that accounting causes undue inventory build-up is obviously a problem in performance measurement and not accounting. The larger issue, in our view, isn't accounting per se but the inconsistent application of the principle of causality in some traditional management accounting approaches. As we indicated, some approaches don't commit this error, and the broad guilt-by-association brush that LA applies to full absorption accounting is invalid.

The Lean Accounting claim for *support of external reporting* clearly requires more study, including an evaluation of the complexity of fully meeting all requirements. The point here isn't that LA violates GAAP. We didn't investigate its ability to provide compliance information in a vanilla manufacturing environment—given its manufacturing roots, we presume this isn't an issue. Our concern is with a broader application of Lean principles and LA, e.g., in service industries such as transportation.

At the very least, open debate and market research (e.g., case studies of LA beyond the manufacturing shop floor) into a number of simplistic assumptions underlying LA will have to be undertaken. These include the practice of blending cost concepts, claims of no need for transaction logging, and managing the performance of the entire business (service and/or manufacturing) with Lean Accounting's single cost object.

The *blended cost concept error* has broader implications, and we will reference some specific examples from the Lean Accounting literature. The effects of this error gravitate toward inferior decision support because our sense is that LA spurns operational modeling (the traditional use of the concepts fixed and variable) in the name of simplicity and the notion that "the shop floor" is the center of the universe where the "real" decisions are made and

**Table 1**

	CURRENT STATE	WITH NEW ORDER	CHANGE
Revenue	\$2,000,000	\$2,400,000	\$400,000
Material Costs	1,000,000	1,135,000	135,000
Employee Costs	200,000	240,000	40,000
Machine Costs	150,000	165,000	15,000
Profit	650,000	860,000	210,000
VS Profit Margin	32.5%	35.8%	3.3%

actions taken. Operational modeling is essential to decision support because understanding current cause-and-effect relationships provides insight into the potential outcomes of decision options. We believe that even in relatively small manufacturing environments, let alone in service environments, operational modeling is necessary.

Consider a make-or-buy decision scenario presented at the Lean Accounting Summit where it was reasoned that the only time the buy option would be selected is when the external provider can supply the product at less than the material cost of making it internally. This is because labor and machine costs are considered fixed—i.e., you incur them regardless. This is a case of dealing with unavoidable costs, not fixed costs. The blended cost concept error has effectively eliminated the buy option. It's possible that Lean Accounting reasoning in this application has its roots in Japanese lifetime employment (the likely explanation) because one of the key Lean tenets is that as waste is eliminated, people aren't terminated—they are reassigned to another value stream that requires resources to support its growth. (The LA thought leaders did point out that there are potential gains for new adopters in avoiding costs associated with equipment and facilities in the process of right-sizing their infrastructure. Our point, however, about the blended cost concept error and the default LA view that resembles that of throughput thinking with regard to consumption and cost behavior remains true.)

There are several challenges for Lean Accounting in its reasoning in this regard. First, adaptability through the ups and downs of economic cycles is a hallmark of the U.S. economy. There's obviously a need in this country to support capacity-adjustment decisions that doesn't appear to be possible with LA's summary value stream information and the blended cost concept error. This is another great topic for open, fact-based debate.

Second, LA's preference seems to be to expand capaci-

ty through incremental investments (usually the constrained resource) rather than to select the buy option. For these investment decisions LA seems to prefer a periodic, point-in-time value stream income statement and not the multiyear, long-run discounted cash flow (DCF) approach. Implications include more emphasis on shorter-term return on sales (ROS) as opposed to longer-term return on investment (ROI).

Table 1 shows a typical LA scenario. A company receives a request for quote to provide an existing customer with 20,000 more units. The value stream income statement in the table reflects the profitability impact and is used to justify investing in additional people and machines to fulfill the order.

The dangers of using ROS are well understood. Once the order is fulfilled, the value stream profit margin will slump below that of the current state. The revenue and material costs in the Change column will go away (i.e., viewed as nonrecurring) but not the employee and machine costs, resulting in a value stream profit of \$595,000 and a profit margin of 29.8% (i.e.,  $\$2,000,000 - 1,000,000 - 240,000 - 165,000 = \$595,000$  and  $\$595,000/\$2,000,000 = 29.75\%$ ). Was the LA decision the right decision? Is the value stream income statement and ROS the appropriate tool to use for these types of decisions? DCF has a very explicit accommodation of the time dimension for investment decisions (i.e., the time value of money), but ROS doesn't. We have seen very little constructive, fact-based debate in this area, so we can only speculate that the reason for LA's lack of asset-level operational details, required for the "I" part of the traditional performance metric, forces the use of the value stream income statement and ROS.

Third, the implied assumption in Lean Accounting that small capacity adjustments are a regular and straightforward occurrence seems inconsistent with Lean's "right" principles of right-design, right-size, and right-fit. If the

whole infrastructure is truly right-sized to the initial factory outlay, it doesn't follow that expanding capacity is a small venture. Moreover, for many industries, capacity increments don't always come in right-sized steps. For example, a commercial airline flight simulator costs \$100M, and there are no right-sized flight simulators. How is this investment decision supported using LA principles and information?

### MORE QUESTIONS

The argument that management accounting is a model of the goods and services consumed in operations that provides insight in related monetary values for decision support will find no naysayer. Management accounting is about modeling, and the closer you can get to the thing being modeled the better. Throughout management accounting's history, causality has enjoyed an unquestionable position as the overriding modeling principle. For example, Alexander Church based his 1910 discussion of the appropriate treatment of excess/idle capacity costs on cause-and-effect relationships. Traditional thinking recognizes different sets of principles for operations flow design (as good or as bad as those might be) and for deriving monetary management information for decision support.

The overriding nature of Lean's "one-piece flow" simplification principle in LA is evident when you consider the resultant value stream income statement. Causality apparently isn't the guiding principle because common fixed costs (e.g., excess/idle capacity costs) are allocated to the value stream and used in product-related decisions (e.g., taking on a new order, outsourcing, make-buy). All of the costs associated with Lean's one-piece-flow principle are considered relevant. Excess and idle capacity may have little if anything to do with the outputs being produced by the value stream. In fact, they have more to do with outputs that weren't produced.

Again, in the relatively simple environment of a small manufacturing operation—the "shop floor"—it may be possible to directly assign soft and hard assets. But given more complex operations (including service industries) and customer demands for bundled products and services (customer micro-segmentation), dynamic shared resources are a business reality, and causality is critical for decision-making purposes. This means that the management accounting profession must think outside the box in creating technically sound, efficient business solutions that support decision making in this complex environment. One of the basic tenets is for management to

understand the impact of decisions (both strategic and tactical) on consumption and efficient utilization of resources throughout the value chain.

### DECISION SUPPORT WITH LEAN ACCOUNTING

The culmination of Lean Accounting's assertions and application of production-flow design principles to decision support information is nowhere more aptly illustrated than looking at a decision scenario presented at the Lean Accounting Summit. Consider the following example used to demonstrate LA's superior decision support capabilities. A company uses a 15% margin percentage hurdle rate for accepting new orders. Table 2 shows profit margin percentages for full absorption standard costing and the value stream for an order received. (Margins are the anticipated margins if the order is accepted; all alternatives use the same basic cost data but allocate costs differently to the product and value stream, respectively. The standard costing gross margin was used in this illustration. No reason was given during the presentation as to why the standard costing contribution margin wasn't used.)

**Table 2**

APPROACH	FULL ABSORPTION STD COST	LEAN ACCOUNTING
Margin Percentage:	6%	24%

As was argued in the session, full absorption standard costing would turn the order down, and LA shows the order should be accepted, primarily because LA allocates less total cost to products than full absorption standard costing does.

Consider the same scenario with two changes: (1) The hurdle margin percentage required is 30%, and (2) a causally derived gross margin is added as shown in Table 3. (The causally derived gross margin is based on assigning costs only to product for which cause-and-effect relationships can be identified.) Note that a causally derived margin (using any of a number of existing approaches) would easily be higher than the value stream profit margin because the common fixed costs of excess/idle capacity would be excluded.

**Table 3**

APPROACH	LEAN ACCOUNTING	CAUSAL MARGIN
Margin Percentage:	24%	32%

With this hurdle rate, Lean Accounting would reject the order, but an approach that focuses on cause-and-effect behavior would accept the order. In the original LA

illustration, the price was set by the market, which means that using the product's contribution margin would be more appropriate. But Lean Accounting espouses that product costs and therefore product profitability aren't necessary for business decision making. The point of this simple example is this: Fact-based debate that includes operational managers in service environments and qualified management accountants is a good thing for advancing the body of knowledge. Declarative statements about the benefits of LA without supporting case studies or empirical analysis will be seen by practitioners as *selling* a solution vs. *advancing* a solution, especially those who have been subject to the selling of ABC/EVA/ERP/BPM/CPM/CRM/ERM...and the beat goes on.

### LET'S CLOSE THE GAP

Lean thinking has a history of success and the potential for providing significant benefit to adopters. The principles of eliminating waste, replacing rather than duplicating, empowering workers, customer pull vs. company push, etc. are important tenets to help improve U.S. global competitiveness. In a world where cross-functional teams with a strong and independent management accounting advocate are becoming more prevalent to drive business performance, the value stream concept to deliver customer value has the potential to improve business performance dramatically.

Let's summarize our answers to the two central questions we raised in the introduction. First, is Lean Accounting ready to replace, complement, or supplement existing or evolving management accounting approaches/change initiatives? At best, possibly beyond the shop floor in a relatively simple manufacturing environment, the answer is that LA in full deployment is premature until there is more technical depth and understanding as to how it supports operational decision making, strategic planning, and external reporting.

The second central question, "Does LA support decision making and enterprise optimization?" is probably a clearer "no" if the center of the universe extends beyond the shop floor. The goal should be to advance the debate on these important issues, not dismiss the debate as being characteristic of old-school accountants who want to go back to the days of full absorption accounting.

Frankly, we are all too smart for that approach, and practitioners have no tolerance for creating more clutter and what seem to be characterized as one-size-fits-all

solutions.

Although "Lean thinking" and the Lean enterprise have clear potential, the "Lean Accounting movement" in the U.S. requires an intervention. We must eliminate declarative statements that suggest that even exploring the integration of existing or evolving management accounting change initiatives isn't in the spirit of Lean because they are too complex. Many examples abound, and we see the possibilities for integration on behalf of the practitioner, but we certainly don't have all the answers. We do know that open debate/discussion is required at a more technical level. Accounting or management accounting isn't the root of the problem, but management accountants must step up and ensure that technically sound solutions are in place to dramatically improve business performance in an increasingly complex global market.

We and many others have long maintained that the management accounting profession must accelerate its transformation to increase its relevance to management. Scores of research studies, including those conducted by the Institute of Management Accountants (IMA®), IBM, PricewaterhouseCoopers, and *CFO* magazine, support our contention that the CFO organization has come a long way in evolving from simply a counter of wealth to also serving as a creator of wealth and from strictly performance reporter to performance contributor. All these studies also clearly indicate that there is still a large gap between the current state of reality and aspirations of the profession. There are many transformational "change initiatives" in the profession today (ABC/ABM, RCA/GPK, EVA, ERM, balanced scorecard, business intelligence/data mining, the "rebirth" of Six Sigma and quality assurance, interactive data, strategy-based planning, budgeting, etc.). A process predicated on fact-based research and debate and that addresses the complexities of modern business is much more likely to be successful and "practitioner friendly." ■

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