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WHITE PAPER

Increasing Profitability by Product: Manufacturing Business Improvement through Activity Value Management

EXECUTIVE SUMMARY

When manufacturing executives encounter profitability challenges, they may not always have the financial tools to identify the source of profit leaks necessary to proactively solve the issues. Many consulting services are available to help with sales growth, cost-effectiveness, customer loyalty, and other goals. However, some of these services leave out important components that can enhance companies' ability to pursue their financial objectives. Activity Value Management® (AVM) uses unique cost assignment strategies and encompasses both qualitative and quantitative data to allow executives to gain insight into the true sources of their profit or losses according to Lines of Business (LOB).

The key to manufacturing improvement is accurate data on which to base decisions regarding each LOB. Yet, many business improvement systems fail to connect and project accurate data. Specifically, overhead costs are often lumped into unassigned "general and administrative" line items or are inaccurately distributed across LOBs. As a result, executives often make key strategic decisions based on faulty information—decisions that are not ultimately in the best interest of the company.

AVM uses a direct costing method to assign overhead expenses to each LOB. This bi-directional method requires determining how much of each activity performed within the business can be attributed to each LOB. AVM creates an audit trail that links costs, activities, and LOBs, enabling executives to more accurately identify needed product mix changes, or improvement opportunities for underperforming LOBs.

Another unique component of the AVM method is the inclusion of all stakeholder input, which is important to gather when looking for performance improvement areas. AVM links this information to all activities performed within the company, offering opportunities to make meaningful adjustments to operations.

AVM uses a customized Job Plan to collect and analyze data. The process typically takes considerably less time to implement than traditional business improvement programs. AVM includes the use of several tools to help executives understand the true costs and profitability of various LOBs. Outcomes may include increased revenues, pricing insights, improved performance in lagging LOBs, and higher levels of customer loyalty.

INTRODUCTION

As global competition grows, many manufacturers face a variety of challenges, including changes in the business environment; workforce development; increasing overhead; reductions in customer loyalty; and cost issues, which encompass declining revenue and resource management. These cost issues, though perhaps easiest for manufacturers to control, require an understanding of the actual cost and profitability of products and services, information that is often hard to come by as a result of the current architecture of cost allocation systems.

Executives may lack the expertise and more importantly, the systems, to assess the value of shared or allocated costs, and may, as a result, implement solutions that

are based more on intuition than facts. Such solutions may unintentionally improve financial and operational performance in the short term, but sacrifice long-term viability and strategic opportunities.

AVM is a method that combines quantitative and qualitative data to deliver proactive solutions that can improve a wide variety of manufacturing challenges in both the short and long term.

AVM is a multi-dimensional performance management process that delivers a profound impact on:

- LOB and channel performance
- Process/activity performance
- Customer loyalty and employee commitment (engagement)
- Revenue generation
- Cost optimization
- Return on investment (ROI)

The AVM method accomplishes these outcomes through a unique process that differs from other costing methods in the way overhead costs are considered and the inclusion of qualitative information.

This white paper explains typical cost accounting methods and why they don't always work, followed by a description of the AVM approach, outcomes, and implementation.

WHY COST ACCOUNTING SYSTEMS OFTEN FAIL

Experts offer many ways to improve operating performance, including programs designed to help a company know its customers' needs better, measure customer loyalty, assess employee commitment, improve product quality, and uncover wasted operational costs. But many of these endeavors ultimately fail to deliver results.

Without accurate data, manufacturers will inevitably come to false conclusions, and as a result make faulty decisions. Using a cost averaging system can be compared to the following common social situation: Sue joins nine of her friends for dinner, all of whom order filet mignon at $50 each. Sue orders a salad for $10. The group agrees to split the tab 10 ways, each paying $46, meaning Sue pays 4.5 times the actual cost of her dinner because she is covering part of the costs of the other diners. Similarly, manufacturers may attribute overhead costs in a way that "covers" some LOBs that are actually consuming more overhead resources than others.

In recent years, the manufacturing environment has changed from having very clear, specific product-attributable material and labor costs to a highly technical environment that involves more machines and computers. This environment has replaced man hours/costs with machine hours/costs and requires more "general" or "administrative" business units to operate. With this added level of complexity in overhead costs, many companies have difficulty accurately assigning them to products and services.

While cost accounting and activity-based costing (ABC) are on the right track—allocating overhead costs to LOBs to determine the true costs of doing business for each LOB—virtually all costing systems rely on pooled, allocated, or averaged costs, which distort LOB profitability. Figure 1 shows how this can happen. Any system that relies on pooling or averaging of costs does not have the necessary audit trails to validate resulting actual costs and then product line profitability.

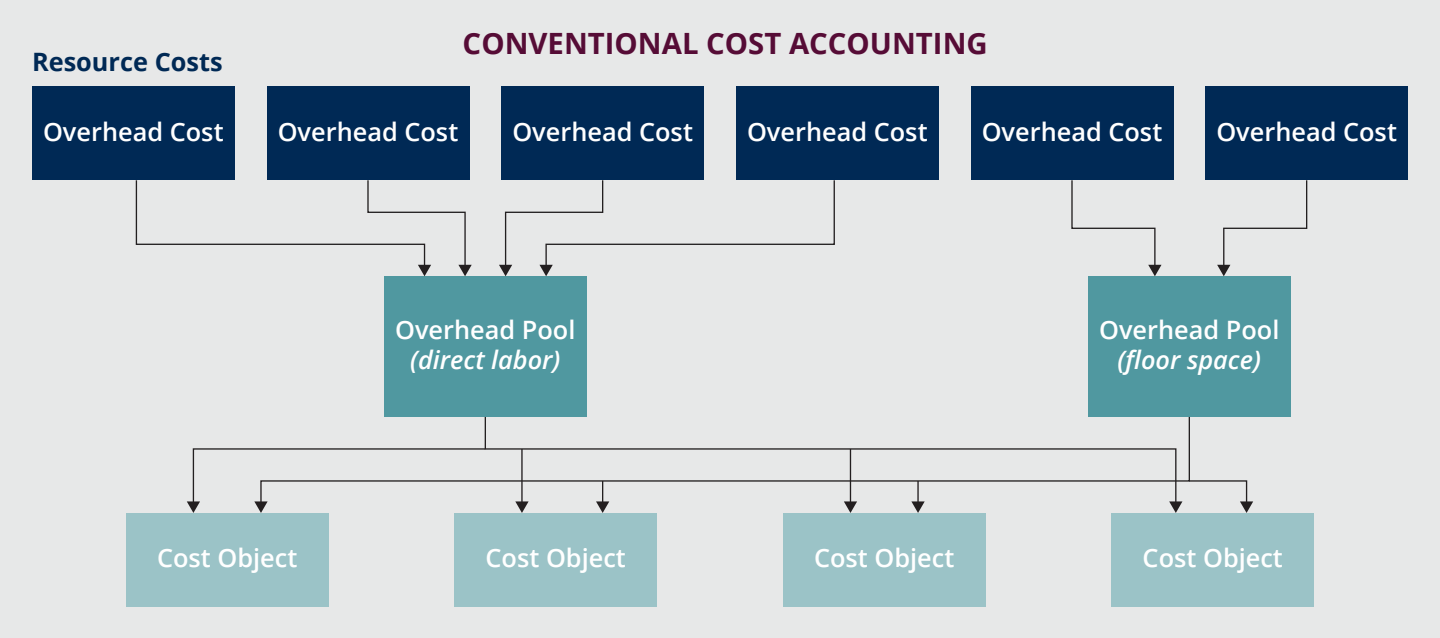

Figure 1 *- Conventional Cost Accounting*

Due to these limitations, manufacturing executives often do not have adequate tools to analyze organizational performance. In addition, most costing analysis systems are prohibitively expensive, inaccurate, and time-consuming to implement and maintain. Further, cost analysis systems often lack essential stakeholder input regarding performance, leading to decisions that may reduce short-term costs but sacrifice long-term business viability.

DIRECT COSTING: ALTERNATIVE TO COST ACCOUNTING

AVM arrives at LOB costs and profitability through direct costing rather than cost allocation. While the two are similar, they approach financial data at two different levels. Cost accounting starts with the totality of overhead costs and divvies them up among LOBs, making (sometimes false) assumptions about how much of each overhead resource is actually used by each LOB.

Direct costing delves deeper, into the products, services, processes, and activities provided on behalf of the company by each overhead department. Using a process that has yielded successful results for many manufacturers, AVM consultants discover precisely how much effort is being expended toward each LOB, without assumptions or guesswork.

For example, rather than assuming that LOB 1 brings in 60% of revenue, and LOB 2 brings in 40%, so it must follow that 60% of research and development efforts support LOB 1 and 40% support LOB 2, direct costing seeks information from each research and development team member to find out how much of their time is actually allocated toward LOB 1 versus LOB 2. It could be and often is a very different split.

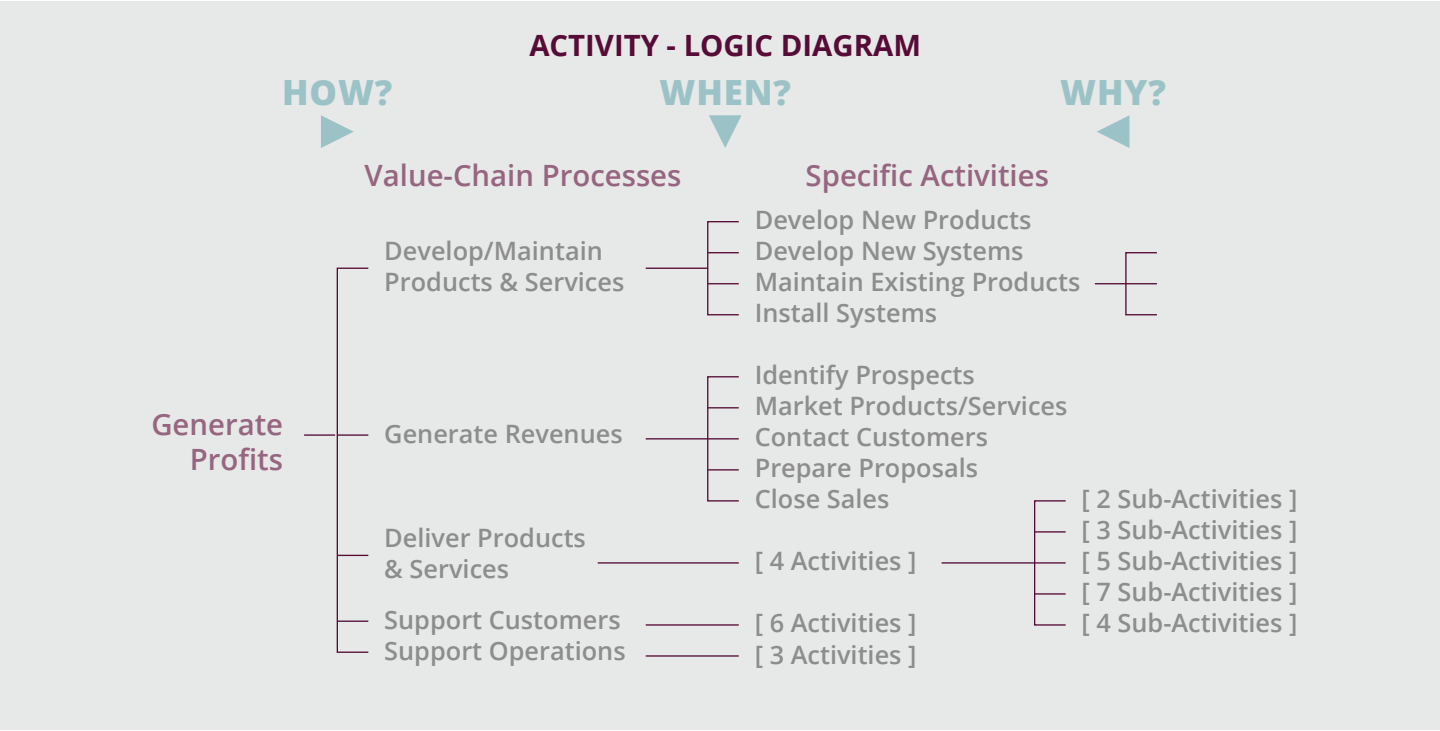

Figure 2 *- Activity-Logic Diagram*

In another example, imagine a sales team that sells LOB 1 and LOB 2. Direct costing would investigate how much of each sales person's time is spent on each LOB, rather than evenly distributing 50% of the total sales costs between the two LOBs.

Figure 2 shows the hierarchical process diagram used to determine these values.

Costing and profitability are validated through a complete "bi-directional" audit trail that directly links resource expenses to products, services, processes, and activities within each overhead department.

Figure 3 demonstrates this process.

AVM uses several types of resource measurements to capture and cost processes, activities, and LOBs. In addition to the financial measure of cost, effort and hours per week are also used to provide insights about how employee effort is expended. Measuring and assigning employee effort provides data not normally available when working solely with financial information. For example, a manager might conclude that the activities performed by a particular employee or group of employees could be performed by less-expensive personnel, resulting in cost savings. This may be true, but a closer look at both financial and non-financial measurements are necessary to identify misapplication of effort and/or misplaced activities.

With AVM, costs and efforts can be traced from resources to activities and LOBs. This method of cost assignment is important to directly measure the impact of product mix changes, or the potential improvements needed with unprofitable LOBs.

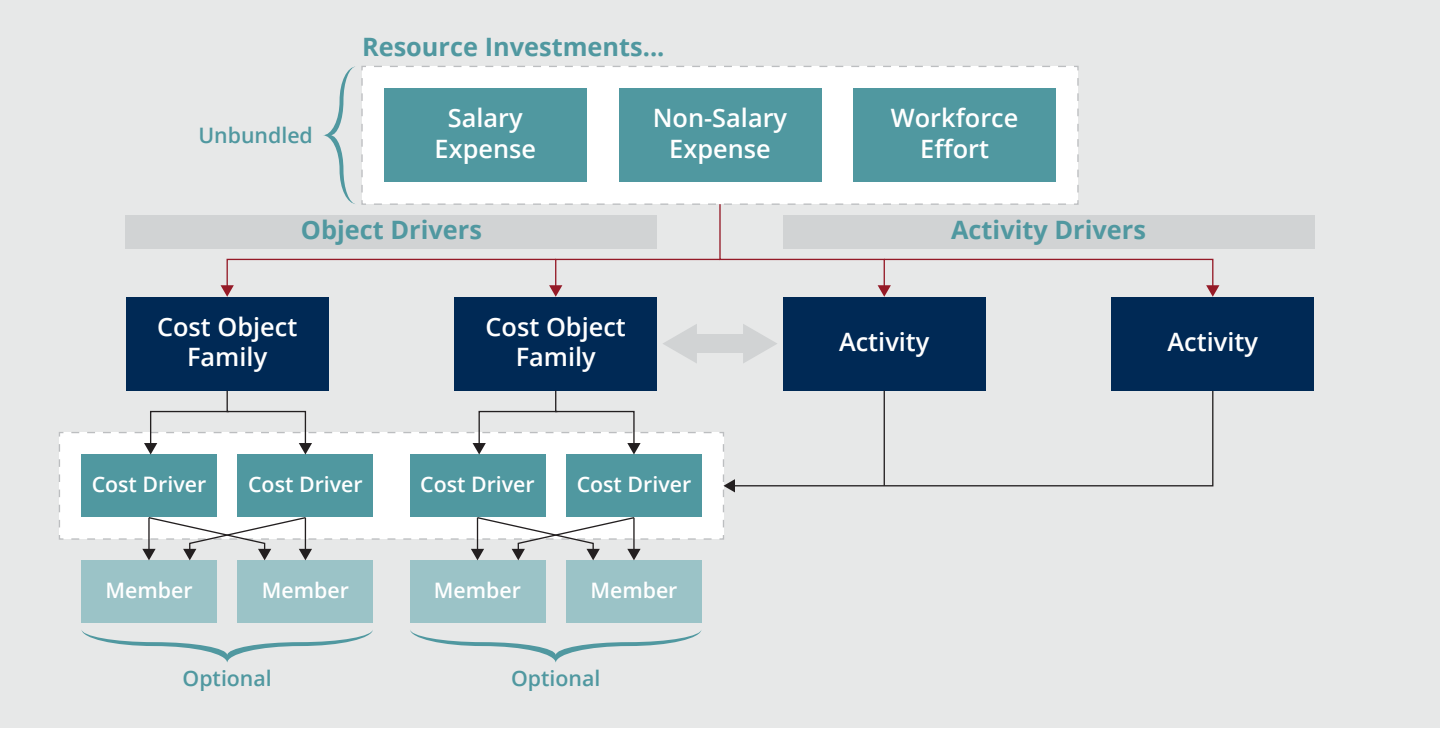

Figure 3 *- Resource Investments*

IMPORTANCE OF STAKEHOLDER LOYALTY

To deliver LOB value as defined by customers, manufacturers must meet market needs with unparalleled systems. Relying solely on internal sources, such as opinions from the sales force, for market information is no longer valid for gaining market dominance. Most financially based and quantitative methods for performance improvement lack qualitative stakeholder information. Information from customers, employees, vendors, distributors, and other stakeholders describing their experiences is an important factor for effective performance improvement.

Consultants use a number of ways to capture stakeholder preferences, including surveys, focus groups, and direct interviews. This stakeholder information is key because loyal customers supported by loyal and engaged employees drive market and financial performance. AVM identifies and links the factors that drive loyalty to the activities performed; and it compares an organization's ability to address customer needs—that is, provide greater value—versus the competition.

AVM IMPLEMENTATION

AVM utilizes a customizable five-step Job Plan designed to fit the specific needs, resource availability, and timing required for each manufacturer. The Job Plan is executed jointly between an experienced AVM consultant and an internal team of employees. Each step results in valuable deliverables designed to improve financial and operational performance. The AVM consultant leads the process using the following steps:

1. Planning (2-3 weeks)
- Talk with management regarding concerns, goals, and objectives
- Look at the organizational structure and various departments, such as sales, marketing, and outsourcing, to understand the organization
- Collaborate with representatives from each team for a deeper understanding of activities, goals, and objectives
- Create a list of processes and activities

2. Data Collection (2-5 weeks)
- Collect data about how every person or expense is utilized in the organization
- Collect qualitative data from employees, management, vendors, customers, and potentially customers of the competition
- Code and assign data to processes, activities, and LOB

3. Synthesis (1-2 weeks)
- Establish the linkage between quantitative and qualitative data
- Map issues to activities
- Identify critical improvement opportunities

4. Data Analysis (3-4 weeks)
- Analyze qualitative and quantitative data
- Compile activity, LOB, and channel costs
- Prioritize opportunities
- Develop specific solutions to improvement opportunities
- Obtain management input and advice

5. Solutions (1-2 weeks)
- Develop reports
- Obtain management approval
- Secure implementation resources
- Establish timetables, responsibilities, milestones, and key performance indicators (KPI)
- Launch change implementation

RELEVANCE

10 - Contributes to Market Dominance
8 - Significantly Relevant
6 - Moderately Relevant
4 - Maintains Status Quo
2 - Marginally Relevant
0 - Non-Productive

PERFORMANCE

10 - Performed Perfectly (Rare Score)
8 - Performed Well
6 - Performed with Few Problems
4 - Known Problems Exist
2 - Unreliable
0 - Terrible

Figure 4 *- Relevance and Performance Scales*

TOOLS FOR CHANGE

The following sections describe some of the tools used by AVM to achieve an understanding of the true cost and profitability of products, services, and market channels; and breakthrough improvements in performance. Many of the tools can be easily adapted to individual cost management initiatives.

Activity Scoring

This extremely simple, yet powerful tool measures how well an activity aligns with the strategic direction of the organization. Once activities are defined, each one can be scored based on its relevance and performance. The scoring model presented in Figure 4 has proven useful in understanding the contributions of organizational activities.

Organization Analysis

Many studies show that the number of a manager's direct reports directly correlates to the performance of the work group. Guidelines as to what constitutes a desirable number are based upon several contributing factors. Often, the ratio of six employees to one manager is recommended, but averages can be deceptive, and the number may need to be adjusted depending on the nature of the group's work or the amount of supervisor time and attention required.

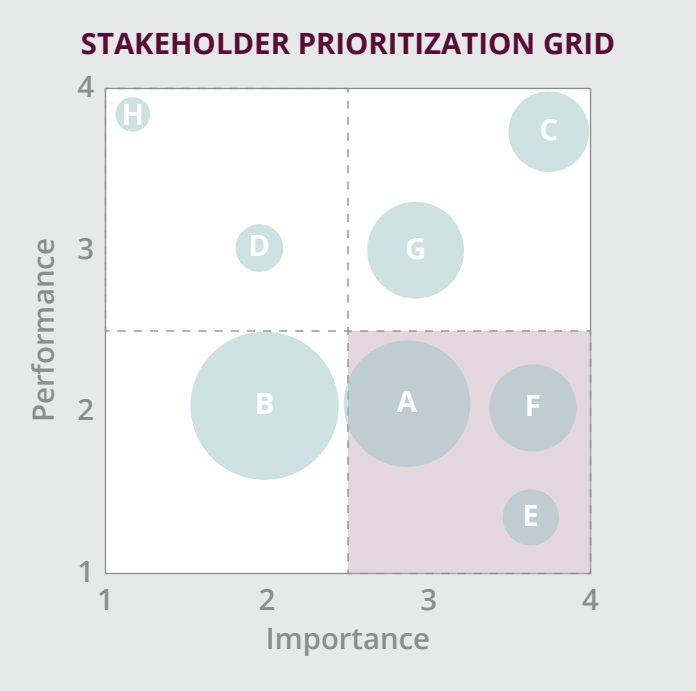

Figure 5 *- Stakeholder Prioritization Grid*

Mission Analysis

Mission analysis is the examination of time work groups spend on activities related to their mission. To ensure the highest level of productivity, employees should be doing more activities related to their mission, and spend less time on non-mission-critical tasks.

Misplaced Effort

Many work groups perform activities that should be performed by other groups. One example is the time non-IT employees spend on "servicing" their PCs when they do not receive adequate response from their IT support organization. Such efforts are often referred to as "hidden" or "shadow" costs.

Composite Analysis

Unique to AVM is the ability to directly link resource costs to LOBs. Under most costing scenarios, if an LOB is eliminated because of underperformance, it is commonly assumed that the total cost of the LOB will be eliminated. This assumption is often inaccurate, given the shared costs incurred in most organizations today.

For example, if management has determined that LOB 1 should be eliminated, some resources will be directly affected by the decision, while other resources whose time is shared among other LOBs may not be affected. However, the costs associated with unaffected resources must be redistributed to the remaining LOBs, which will affect their profitability and the overall profitability of the company.

Stakeholder Experience Analysis

Linking stakeholder perceptions to costed activities connects the stakeholders to bottom-line performance. In Figure 5 the circles represent the relative costs of the activities associated with the attributes that drive customer loyalty. This type of analysis targets costly activities that are not important; it also identifies the costs associated with important activities that are not performing to levels required or anticipated by the stakeholders.

AVM OUTCOMES

AVM removes the barriers that block performance improvement and focuses on generating increased revenue and optimizing operating costs. With AVM-based solutions, manufacturers can identify and act on solutions that lead to performance breakthroughs. AVM requires less time and expense than other methods to implement and maintain, so information is timely, relevant, and actionable. Stakeholder feedback is directly linked to processes and activities, providing a source for performance improvement that meets short-term financial improvements while achieving long-term objectives.

AVM focuses on fact-driven solutions with a bias toward action. Some typical outcomes are listed below:

- Improved profitability through better pricing strategy, product mix, and cost correction
- Improved under-performing LOBs
- Increased revenues
- Lowered expenses through the reduction or elimination of unnecessary and avoidable costs
- Improved workforce effectiveness through greater focus on mission-critical activities
- Enhanced quality of products and services
- Improved budgeting and planning
- Higher levels of customer loyalty

CASE STUDY: HIGH-SPEED MICRO COMPUTER MANUFACTURER

In this example, the AVM process led Company A to identify organizational process, financial, and operational opportunities, resulting in an immediate savings of over $2 million.

Client: Company A is a custom designer and manufacturer of high-speed micro computers used in national defense and medical applications.

Objectives: The company had established the following profitability objectives:

- Develop accurate costs and profitability of the various LOBs
- Concentrate resources on profitable lines of business
- Enhance performance of newly launched Six-Sigma initiative
- Operate cost-effectively

Approach: Company A chose the AVM approach after experiencing several failed attempts by nationally-recognized and boutique consulting firms to implement a costing/profitability system. AVM was implemented within just nine weeks by an internal team of employees working in conjunction with an AVM consultant to:

- Directly assign all costs to activities and product offerings without pooling, aggregating, and allocating costs
- Compute accurate profitability of all product/service offerings
- Capture stakeholder experiences and assign to activities and LOBs
- Utilize cost and experiential information to identify opportunities for financial and operational improvement

Contribution: The AVM consultant generated the true cost and profitability of all LOBs—identifying under-performing LOBs for corrective action—and identified dozens of improvement opportunities that lowered costs, improved revenues, enhanced stakeholder experiences, and implemented savings equal to 8% of revenues.

CONCLUSION

Manufacturers need to understand profitability and costs of each LOB to make the best decisions about changes in product mix, customer loyalty programs, staffing, and other key areas of business. However, many existing services to determine these metrics are inaccurate. AVM offers a costing method that links specific and accurate costs—normally labeled as overhead, general, or administrative—to specific LOBs to determine true costs. The inclusion of qualitative data from key stakeholders adds a further dimension that is typically left out of the value-determination process. Understanding costs and profits from this perspective can help manufacturers make strong decisions that enhance the profitability, employee and customer loyalty, and efficiency that help companies expand and improve.

EKS&H *and* ***Management Resources Technologies (MRT)*** *jointly offer AVM services, backed by EKS&H's extensive manufacturing industry experience, which includes more than 300 client groups in all 50 states. MRT Principal Brian Higgins has extensive experience, skills, and achievements in financial analysis as well as operational, quality, and overall performance management. EKS&H Audit Partner Kreg Brown has nearly 30 years of public accounting experience and leads the Manufacturing practice at EKS&H. His expertise includes the audit and accounting needs of both privately held and public companies; his advisory approach comprises helping clients with business transition planning, strategic planning, capital formation, and mergers and acquisitions. For more information about how your company can benefit from AVM, contact* ***Kreg Brown*** *at 303-740-9400 or kbrown@eksh.com*