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HOW PROFITABLE TO YOU IS EACH CUSTOMER TODAY...AND TOMORROW?

Why transactional profitability measurements are an ultimate goal

THE POWER TO KNOW®

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About the author

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Gary was the lead author of the acclaimed *An ABC Manager's Primer* (ISBN 0-86641-220-4) sponsored by the Institute of Management Accountants (IMA). The recommendation from Harvard Business School Press about Gary's second book, *Activity Based Cost Management: Making it Work* (ISBN 0-7863-0740-4), was to "read this book first". Gary's third book, *Activity Based Cost Management: An Executive's Guide* (ISBN 0-471-44328-X), has recently been ranked number one in sales volume of 151 similar books on www.BarnesandNoble.com. Gary has also written *Activity Based Cost Management in Government* (ISBN 1-056726-110-8). His latest book is *Performance Management: Finding the Missing Pieces to Close the Intelligence Gap* (ISBN 0-471-57690-5).

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Executive summary

The horsepower of computers and economical data storage now makes it possible to precisely measure individual customer costs and their layered profit margins. What is more amazing is this information can be calculated and reported at the individual transaction level and virtually in real time. Sales and marketing people have been seeking this information to help them better target their efforts. With this capability the organization can monitor its profit and loss statement every day at the most detailed level.

Why is this relevant? There is a growing desire among organizations to better understand their revenues and costs and in particular the behavior of factors that drive these top and middle lines of the bottom-line profit equation. Traditional cost systems typically provide misleading information to decision makers with minimal transparency as to what constitutes a product's cost. Worse yet, traditional cost systems provide no visibility to all of the unique costs-to-serve that widely vary between different types of customers.

In short, the problem with accounting's traditional gross profit margin reporting (i.e., restricted to product cost profit margins) is that managers cannot see the bottom half of the total picture – all the profit margin layers eroded from distribution, selling, credit, payments and marketing costs. The unacceptable result from not converting these types of expenses into customer costs is executives, managers and employee teams receive incomplete profit reporting that is not segmented by customer – and the product profitability data they do receive is flawed and misleading.

This white paper describes a solution to these deficiencies. It describes a powerful and economical managerial accounting system that collects and transforms data at the detailed transaction level. The attraction of the effective transaction-based costing system is that it can scale to accommodate billions of transactions, access data from diverse multiple source systems, is deployable for remote Web-enabled analysis, and can report validly calculated profits at a moment's notice rather than two weeks after a month has ended.

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Why is there interest in better cost and profit measurement?

There is a growing desire among organizations to better understand their revenues and costs, and in particular the behavior of factors that drive these top and middle lines of the bottom-line profit equation. The reason for increased interest is obvious – the acceptable margin for decision error is decreasing. Mistakes in poor product selection, wrong channel options, or improper customer targeting can no longer be compensated by good choices made elsewhere in a business to offset the poor decisions.

What questions might managers and employee teams ask about their customers and suppliers? Here are some examples:

- Should we pursue volume or margin with a specific customer?
- Are there ways to improve profitability by altering the way we package, sell, deliver or generally service a customer?
- Does the customer's sales volume justify the discounts, rebates or promotion structure we provide to that customer?
- Can we realize the benefits from our changing strategies by influencing our customers to alter their behavior to buy differently (and more profitably) from us?
- Can we shift work to or from some of our suppliers based on who is more capable or who already has a superior cost structure compared to ours?

Risks from inaccurate cost calculations

Companies plan and control their operations using accounting information that is assumed to accurately reflect the costs of their products and standard service lines. In fact, this is often not the case. The recorded expenses, such as salaries and supplies, may be exact in their amounts because externally audited and automated accounting systems capture them – but the problem is then transforming those expenses into the calculated costs of business processes and the products that, in turn, consume those process costs. The costing systems of many companies, with their aggregated summaries and their broad averaging allocation of indirect costs, mask reality with an illusion of precision. In fact, traditional cost systems typically provide misleading information to decision makers with minimal transparency as to what constitutes a product's cost.

To further complicate matters, with the shift in attention from products to customer services, managers are also seeking granular costs-to-serve for customer-related information. These are all the costs that are not related to making a product or delivering a standard service line (for example, a bank checking account), but rather are the costs of interactions with customers. The problem with accounting's traditional gross profit margin reporting (restricted to product cost profit margins) is that managers cannot see the bottom half of the total picture – all the profit margin layers eroded from distribution, selling, credit, payments and marketing costs. Figure 1 illustrates this dilemma.

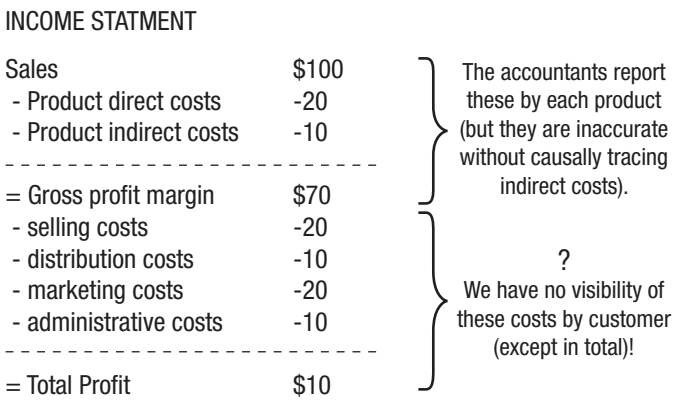

Figure 1 – Expenses below product costs

The costing systems of many companies, with their aggregated summaries and their broad averaging allocation of indirect costs, mask reality with an illusion of precision. In fact, traditional cost systems typically provide misleading information to decision makers with minimal transparency as to what constitutes a product's cost.

The following are examples of customer-specific costs traditionally hidden in the customer support, marketing and sales functions, yet uniquely traceable to customers:

- Order processing costs.
- Billing, collection and payment processing costs.
- Accounts receivable and carrying costs.
- Customer service costs.
- Post-sales costs.
- Selling and marketing costs.

The unacceptable result from not converting these types of expenses into customer costs is that executives, managers and employee teams receive incomplete profit reporting that is not segmented by customer; and the product profitability data they do receive is flawed and misleading. They deserve fully loaded cost and profit reporting encompassing all the expenses of their end-to-end value stream costs – from supplier-related purchasing to customer service. How can recent advances in managerial accounting methods and technology deploy the vast potential that companies have from their business intelligence systems?

Executives, managers and employee teams receive incomplete profit reporting that is not segmented by customer; and the product profitability data they do receive is flawed and misleading. They deserve fully loaded cost and profit reporting encompassing all the expenses of their end-to-end value stream costs – from supplier-related purchasing to customer service.

The quest for individual customer profit reporting

Today it is difficult to understand costs, and how to distinguish between competing cost measurement methodologies (for example, activity-based costing or ABC, standard costing, project accounting, target costing, etc.). The result is that managers and employees become confused as to which costs are the correct ones and what factors influence calculating accurate profits and costs. There is also uncertainty about how large or complex a company's costing system can become before it is unmanageable or unjustifiable.

The consequence of this is most organizations are disabled with flawed and misleading accounting data and unable to analyze it. Also, some businesses with thousands of customers want to scale up their cost/profit reporting and visibility at the individual customer level, but their costing systems cannot accomplish it. In both cases the organization is denied the essential information for making much better decisions about product mix, customer mix, marketing and channel strategies, and sales programs.

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In an increasingly competitive business environment, organizations seeking to maintain or improve their competitiveness need revenue, cost and the resulting profit margin information that is accurate and relevant. To better analyze this information, they need to be able to define segmented reports dynamically. This includes tracking profit by various customer groups and ideally by individual customers; by product groups or individual products; and by specific sales channels, distribution channels, branches, service centers or sales outlets. To enhance the identification and investigation of problems, organizations also need the flexibility of at-a-glance and drill-down views to see costs and profits with the necessary fine granularity.

In order to overcome the overgeneralizations and limitations of traditional costing systems, hampered with their monthly aggregations of direct costs and excessively simplified cost allocations and resulting lack of visibility for indirect costs, organizations have been adopting *transaction-based costing* systems. This type of system is based on cost modeling that traces an organization's expenses – both direct and indirect – into the products, services, channels and customers that cause those expenses to be incurred. The attraction of an effective transaction-based costing system is that it can scale to accommodate billions of transactions, access data from diverse multiple source systems, is deployable for remote Web-enabled analysis and can report validly calculated profits at a moment's notice rather than two weeks after a month has ended.

A transactional-based costing system is based on cost modeling that traces an organization's expenses – both direct and indirect – into the products, services, channels and customers that cause those expenses to be incurred.

Managing Customer Lifetime Value (CLV)

Some organizations have evolved beyond using transaction-based costing solely for obtaining more accurate and relevant cost and profit margin information. For these more capable companies, the emphasis has shifted from just measuring costs to profit management, including customer value management. These organizations use an understanding of their pricing and cost drivers – the measures of work activity that are causal factors in the incurrence of cost – to improve their operations and profit performance. They leverage their improved understanding of their customers' sensitivity to varying price levels and of their own cost structure, which is made more highly visible with transaction-based costing. They examine the initial acquisition costs combined with the customers' future potential value as they pass through various life-cycles. Since this involves multiple time periods – rather than just a single time period – discounted cash flow techniques are applied similar to capital investment evaluations to examine the financial return on customers as if spending on them is an investment.

With this higher understanding, these organizations proactively manage their resources and induce customer responses (such as deals, offers and discounts) to enhance the key elements of value creation from their customers' perspective. Organizations involved in business process re-engineering, quality improvement and lean management initiatives also use both the financial and nonfinancial insights from their transaction-based cost measurement system to increase productivity.

SAS® Profitability Management is based on transaction-based costing. Its profitability reporting gives a meaningful business context to business intelligence (BI). In the end, managerial accounting is just data. It is to be used as a means to an end – namely decision making. The quality and accuracy of managerial accounting data is therefore critical.

Pursuit of truth about profits

To be competitive, a company must know its sources of profit and understand its internal cost structure and economic behavior. A competitive company must also ultimately translate its strategies into actions. For outright unprofitable customers, a company would want to explore passive options of substantially raising prices or surcharging them for the extra work they are likely creating. It can also be more assertive and evaluate permanently terminating the relationship – "firing" the customer. For profitable customers, a company may want to reduce customer-related causes of extra work for its employees, streamline its delivery process so it costs less to serve customers, or alter the customers' behavior so that those customers place fewer workload demands on the company. For all customers, the company can seek to up-sell or cross-sell to make all of them more profitable. But how do you know where to focus?

In the end, reliable accounting data is needed to identify which types of customers to retain, grow or acquire – and also to know which types not to pursue. For those types of customers that are worth pursuit, managerial accounting data is also needed to determine how much to spend retaining, growing or acquiring because it becomes an optimization problem from a shareholder's wealth-creation perspective. Overspending on a loyal customer arguably destroys shareholder value, while underspending on marginally loyal customers risks their defection to a competitor – again destroying shareholder wealth. (For more information on this topic, read the SAS white paper *Are You Customer-Focused or Customer-Obsessed?*[1]) Having customer profitability information is mission-critical.

Overspending on a loyal customer arguably destroys shareholder value, while underspending on marginally loyal customers risks their defection to a competitor – again destroying shareholder wealth.

Computer technology enables transaction-based costing

A revolution has occurred in computer technology that allows large-scale and detailed profitability reporting. In the past, achieving ever higher levels of cost accuracy was simply not justified given the extra work. But today, applying computer technology significantly reduces the administrative effort (after the automated cost system is initially designed and configured). As a result, the new principle for attaining high cost and profit accuracy is to measure price and costs consumed at the moment consumers exchange their cash – at the instance of a transaction.

[1] *www.sas.com/ctx/whitepapers/whitepapers.jsp?code=353/*

Transaction-based costing does not mean real-time costing. Despite the appeal of the idea of instant and real-time costing (and now the capability), there are promises and perils from using real-time costs. The company should decide when to use current or point-in-time costs rather than representative costs measured over a period of time. You don't want to day-trade your company. The key is the assumptions and selection of which unit cost to apply to the driver (e.g., event) quantities used in the total customer cost and profit equation.

At an intersection in time, value is exchanged between a buyer and seller. This type of costing is a "bottom-up" or "pull" approach. That is, the customers and products are placing demands (or pulling) on the business processes that are in turn drawing on the resource expenses. It is a consumption view of costs.

The accepted profit equation becomes:

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Individual customer profit = the sum of transactions
(price – [unit cost rate x quantity]) – other traceable customer costs
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Figure 2 illustrates the information system design for transaction-based costing. The "transaction assignment modeler" is the cost calculator that serves as the central application to compute the profitability information. It is the heart of the methodology. This is where all the user-defined rules, selection criteria, cube design and formulas can be chosen and customized to enable flexible analysis by the casual user.

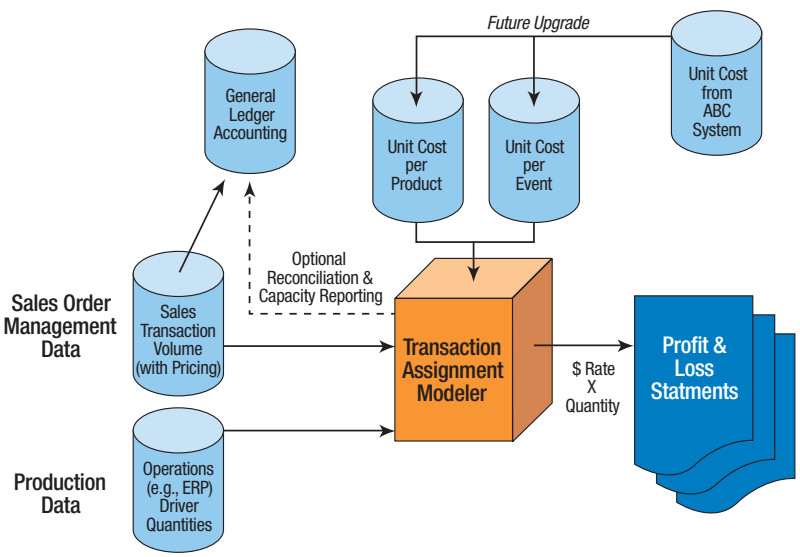

Figure 2 – Transaction-based costing information system

The two main sources of data at the left of Figure 2 are: (1) customer purchase history from the sales order management system for the top-line revenues and product costs (i.e., quantities purchased) and (2) operational systems, such as an enterprise resource planning (ERP) system, for costs-to-serve events driver quantities.

Unit Cost Tips

There are misconceptions about the unit cost files that worry both the accountants as well as the users of the data. There should not be major concerns. In the beginning, the initial unit costs can be economically made from estimates. Other options include using industry benchmark averages that are widely available from professional trade groups. As mentioned, the influence on total cost accuracy for a customer is much more sensitive to the driver quantities. Since all customers' cost equations will draw on the same unit cost file and thus be comparable, their costing will be based on a consistently applied cost.

What is important is that there is a one-to-one naming match between an output (e.g., product, service and event) and its unit cost. With the passing of time, more rigorously measured unit costs can replace the initial ones to gain more accuracy and provide even greater confidence to decision makers using the information. For example, ultimately the output of an ABC system (e.g., spreadsheet-based, commercial software like SAS Activity-Based Management) can be a feeder to the transaction assignment modeler calculator.

Transaction-based costing is described as having costs calculated from the bottom up because it is the purchase or customer support event that creates the demand load placed on the organization's cost structure.

Achieving extreme high cost accuracy

With regard to cost accuracy, this bottom-up approach quickly calculates high accuracy for measuring individual customer profitability. This is because the two easiest elements in the profit equation to capture, each transaction's *price* and *quantity*, are the factors that influence the majority of the total accuracy. In contrast, a modest error in any individual unit cost rate (for example, $25.00 per bank deposit +/- 5 percent error) will not substantially create as much total cost error as errors to price and quantity would.

Since most businesses today have automated transaction and production systems, this means that the data costing error is sensitive to is already captured. In short, transaction-based costing is now feasible. And therefore, customer profits can be instantly reported at any time on demand. Transaction-based costing traces all expenses, including "below the gross margin line" expenses, to individual customers. This provides robust information for customer profit analysis.

The appealing aspects of the SAS Profitability Management solution are:

- It calculates cost at the lowest level – at the transaction level and not any summarized version.

Transaction-based costing traces all expenses, including "below the gross margin line" expenses, to individual customers. This provides robust information for customer profit analysis.

- It is extremely scalable. For example, a customer dimension may have as many as 100 million members.
- It can consider total costs, such as registering a customer, as well as volume-based unit costs.
- It generates Web-based profit and loss OLAP reports at the customer or SKU (or any) levels.
- It leverages SAS architecture from top to bottom. That is, it seamlessly integrates with SAS standard tools.
- The sources for the dimension, behavior, user-defined rules, transaction and reporting output tables used can be derived from any external system. These tables can be virtually any data source and only need to be registered in the SAS Metadata Server.
- It integrates the profit and cost information with other business intelligence analytical applications used for customer analytics (marketing campaigns and marketing optimization), process analytics (productivity, value stream mapping, Six Sigma quality initiatives) and financial solutions (budgets and rolling forecasts).
- It does not rely on any fixed-cost modeling methodology. Unit cost data can come from any source-costing system (standard cost, trade association, commercial or spreadsheet ABC).
- Individual profit reports are drillable for analysis.
- User-defined rules create the revenue and expense assignments.
- Full analysis can be communicated to business managers in a form they can easily understand.

SAS Profitability Management provides insights into the causes of profitability so decision makers can focus on improvement opportunities, investigate problems to develop corrective actions, and formulate differentiated customer treatments to retain, grow and acquire the better types of customers. It enables organizations to accurately calculate revenue and costs for a massive number of products, channels and customers and to do so instantly and at frequent time intervals. This reduces the cycle time of the entire calculation and reporting process. By operating on SAS Enterprise Intelligence Platform, an organization gains huge value once it understands the value of common metadata, integrated reporting, advanced analytics and cross-platform data integration. Multiplatform and mixed platform support allows users to fully exploit their IT resources. In summary, SAS Profitability Management enables organizations to use profitability information to make decisions to effectively grow the bottom line.

How would an organization use this information? Obviously to drive higher financial value from customers based on fact-based information applying more efficient targeting and differentiated service levels commensurate with each customer's potential for higher sales.

By adding a financial view of the outputs to the financial view of the resources, managers and employee teams can much better understand the behavior of their cost structure. The visibility that comes from knowing the costs of outputs becomes the stimulant to understanding the cost structure.

Beneath the iceberg: unrealized profits

What is the reality of profits and losses? When companies take the time to adopt a more progressive managerial accounting system such as transaction-based costing, then fact-based truths are discovered, learned and ideally acted upon. For example, you may discover that your largest customer in sales volume is hardly your most profitable one. A smaller customer is.

When flawed and misleading costing methods are replaced with reliable direct costs and true consumption measures of the costs-to-serve for customers, the companies who have corrected these flaws with superior costing realize that they make a lot of profit on the winners but simultaneously give back quite a bit of unrealized profit on the losers. And both the profits and losses are usually large numbers. The company only banks the net difference.

Relative to the organization's typically false beliefs about what products or customers are more or less profitable, the swing from knowing the truth can be quite dramatic. This is because profit margins are usually very thin, so even slight changes in calculated costs make a substantial difference. Transaction-based costing reveals these large changes relative to an organization's prior beliefs. That is, the new, correct and true profit margins can produce a substantially different story than what most managers and employees have assumed to be the case.

Figure 3 is a graph, often referred to as a "profit cliff," of how unrealized profits can be hidden due to inadequate costing methods. The accountants are not properly assigning the expenditures based on cause and effect. The graph is of each product's cost, net of sales, to reveal each product's and service line's profit. This is the calculated profit margin from Figure 3.

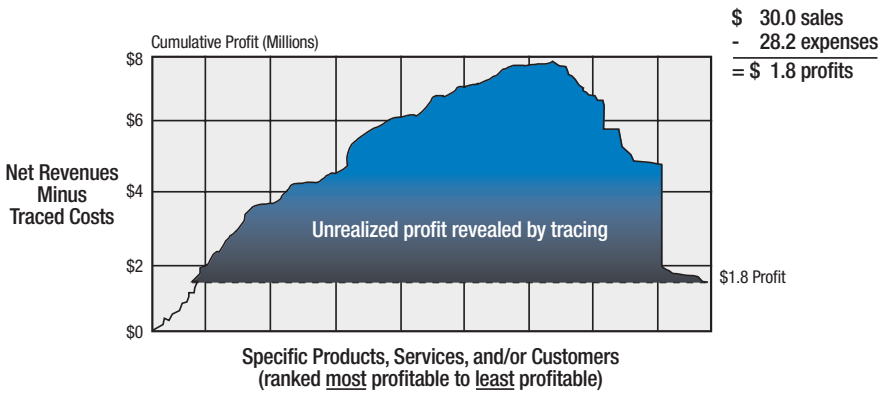

Figure 3 – Profitability profile using traced costs

When companies take the time to adopt a more progressive managerial accounting system such as transaction-based costing, then fact-based truths are discovered, learned and ideally acted upon.

The products are rank-sorted left to right from the largest to the smallest profit margin rate. The very last data point equals the firm's total net profit, as reported in its profit and loss (P&L) statement. For this organization, total revenues were US$30 million with total expenses of $28.2 to net $1.8 million, but the graph reveals the profit mix of this $1.8 million. The last data point reconciles with the total reported profit, but that single point gives no visibility to the parts. Think of the last data point as being on a vertical metal track; it can only slide up or down. Looking at the graph this way reveals that products and standard service lines to the left of the peak, where an item's sales exactly offset its costs, are also fair game for increasing profits. Many people only focus on the losers to the right, but a profit lift can come from cross-selling and up-selling the winners to the left.

A similar but more comprehensive profitability graph can also be produced after each customer's purchased mix of products and service lines is combined with its unique costs-to-serve. In that diagram the customers, not the products or service lines, are sorted from the most to the least profitable. These types of graphs enable a customer base analysis. Not surprisingly, the shape of the graph for customers often resembles the shape of the graph for products; there are initially winners, then the losers detract from the peak unrealized profits.

How can this be happening? How can such unrealized profits be so offset by the unprofitable products and customers? One explanation is that no one has ever seen the profit margins displayed in this manner. Some managers and employees may have always intuitively thought of this profit portfolio mix as being true, but they could never prove it. With transaction-based costing they can.

Another critical reason for knowing where each of your customers is located on the profit graph is to protect your most profitable customers from competitors. Because so few customers account for a significant portion of the profits, the risk exposure from losing them is enormous. The farther to the left side of the profitability profile distribution curve that the curve's peak is located, the more sensitive the bottom-line profit is to competitor attacks on key customers or product lines.

A critical reason for knowing where each of your customers is located on the profit graph is to protect your most profitable customers from competitors. Because so few customers account for a significant portion of the profits, the risk exposure from losing them is enormous.

The lesson from this example is that there is a "quality of profit" associated with sales volume and product mix. There should be a focus on the customer contribution margin devoid of simplistic cost allocations.

The shape of any organization's customer base's profitability profile curve will be unique and different. Knowing the characteristics of customers with different profit levels can be valuable in determining what actions to take. Advanced teams, equipped with customer profitability data, perform multidimensional analysis along with activity analysis.

Performance management goes even further by bundling these profit margin and cost tools with employee scorecard tools to assure that the alignment of any decisions is consistent with the company's strategies. Performance management resides in a Web-enabled environment, so employees can more readily analyze, communicate and take actions. The vision and strategies come from the top down, and the feedback results from the bottom up are important to actively manage an organization. Performance management serves as that bridge between strategies and operations.

Customer profit and loss statement

Figure 4 is an example of an individual customer profitability statement. Using transaction-based costing, there can now be a valid profit and loss statement for each customer as well as logical segments or groupings of customers. A tremendous amount of detail lies below and within each of these reports. For example, the individual products and service lines purchased can be examined in greater detail; they comprise a mix of high and low margins based on their own unit costs and prices. In other words, in a customer-specific profit and loss summary, the product or service line is reported as a composite average, but you can view details about the mix by drilling down. In addition, within each product or service line the user can further drill down to examine the content and cost of the work activities and materials ("the bill of costs") for each product and service line.

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SAS Profitability Management
Transaction-level Profitability

Net Interest Income
Generated from
Transactional Sources

Non-Interest Income
Generated from
Transactional Sources

Non-Interest Expense
Generated from
SAS ABM or Costing System

SAS Web OLAP Viewer for Java - Microsoft Internet Explorer provided by SAS

File Edit View Favorites Tools Help

Profitability Management

SAS Web OLAP Viewer - Untitled Data Exploration

File Data View Query Navigator Bookmarks

View Data Properties

		L3_Scenario	Actual	Budget
L1_Profit	L2_Profit			
Interest Income	Credit Card Interest Income		$135,012.18	$127,213.62
	Loan Interest Income		$225,773.45	$212,732.20
	Mortgages Income		$123,016.53	$115,910.89
Total Interest Income			$483,802.16	$455,856.71
Interest Expense	Savings Interest Payments		$16,404.36	$15,456.83
	Certificates of Deposit Payments		$72,408.80	$68,226.35
	Investment Securities Payments		$23,345.33	$21,996.84
Total Interest Expense			$112,158.49	$105,680.02
Net Interest Income			$371,643.67	$350,176.69
Funds	Credit for Funds		$63,567.38	$59,895.62
	Charge For Funds		$79,459.19	$74,869.43
Net Funds			$-15,891.81	$-14,973.81
Fees	Credit Card Fees		$5,084,684.43	$50,921.58
	ATM Fees		$10,677.53	$10,060.87
	Investment Account Fees		$93,381.32	$87,987.40
	Checking Account Fees		$16,769.75	$15,801.08
Total Non Interest Income			$5,205,513.03	$164,770.93
Provision For Losses			$15,891.68	$14,973.81
Direct Product				$245,533.75
Relationship Management			$13,949.41	$93,059.64
Sales and Marketing Effort			$3,385.03	$27,940.85
Servicing Effort				$93,113.06
Total Non Interest Expense			$33,226.13	$474,621.11
Net Contribution			$5,528,038.77	$25,352.70

Figure 4 – Sample customer profitability statement

What does all this customer profitability information reveal? First, it quantifies what many may already have suspected: All customers are not the same. Some customers may be more or less profitable based strictly on how demanding their behavior is. This is measured by the costs-to-serve cost assignments. Although customer satisfaction is important, a longer-term goal is to increase customer and corporate profitability. There should always be a balance between (1) managing the level of customer service to earn customer satisfaction and (2) the impact of doing so on shareholder wealth. The best solution is to increase customer satisfaction profitably. Because increasingly more customers will expect and demand customization rather than standard products, services and orders, understanding this balance will be important. Transaction-based cost and profit data facilitate discussions about arriving at that balance. Many managers are unwilling to take any actions until presented with the facts.

Although customer satisfaction is important, a longer-term goal is to increase customer and corporate profitability. The best solution is to increase customer satisfaction profitably.

Analytic users refer to online query and navigating as "multidimensional reporting," and they use OLAP software tools for viewing the output of the cost calculation engine. This is powerful information. The sum of all the customer P&L statements for this type of report can be equated to the entire business's enterprisewide profit (or loss). That is, it can be reconciled with the company's official accounting books – its total spending and the resulting bottom line.

Some companies that have applied transaction-based costing to get this far and compute this data face a critical test. The crucial task is not to just apply transaction-based costing to calculate valid customer profitability data, but to use the data, and use it wisely. The benefit comes from identifying the profit potential and then realizing that potential by taking smart actions. A primary feature of performance management is that it structures the analysis, places it in a strategic context and encourages instant communications and actions among employees.

Although the following list is partial, making customers more profitable can be accomplished by:

- Managing each customer's costs-to-serve to a lower level.
- Establishing a surcharge for or repricing expensive costs-to-serve activities.
- Reducing services.
- Raising prices.
- Increasing costs on activities for which a customer shows a preference.
- Shifting the customer's purchase mix toward richer, higher-margin products and service lines.
- Discounting to gain more volume with low costs-to-serve customers.

The combined effect of these potential sources of profit generated from a single customer highlight the importance of high customer retention rates, the value derived from customer loyalty and the opportunity cost of losing profitable customers.

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As mentioned earlier, some customers may currently be so unprofitable that the company will conclude that it is impractical to achieve profitability with them and they should be terminated. After all, the goal of a business is not to improve customer satisfaction at any cost but rather to attempt to manage customer relationships to improve long-term corporate profitability.

Figure 5 illustrates a simplified information technology diagram for how a profitability management system integrates with some of the other systems (but not all) that fit together into the broad framework of performance management.

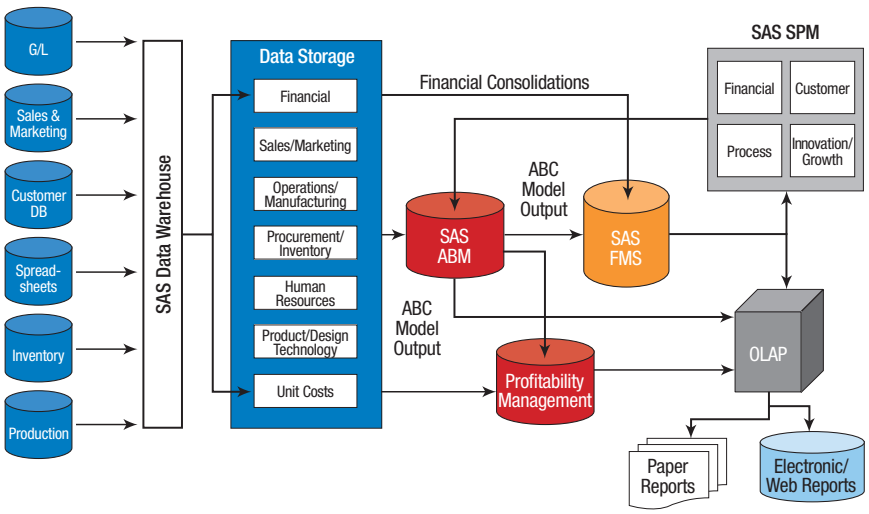

Figure 5 – Integration of multiple performance management solutions

Today technology is no longer the obstacle it once was to achieve the full vision of an integrated performance management framework. The obstacle today is an organization's senior management having the mindset, vision and willpower to advance its organization.

Today technology is no longer the obstacle it once was to achieve the full vision of an integrated performance management framework. The obstacle today is an organization's senior management having the mindset, vision and willpower to advance its organization.

As progressive organizations gain proficiency and mastery with the business intelligence provided by transaction-based costing, they can be formidable. Future competitive differentiation will be based on the rate of speed at which organizations learn, not just the amount they learn. An organization should not be too late in understanding and mastering transaction-based costing as the route to understanding customer profitability. It should also not want its trading partners along its supply chain to be blind to where they themselves make or lose money. Understanding customer profitability will be a key to collaboration between trading partners to remove mutual waste and provide a basis for fruitful discussion.

Having all this revenue, cost and profit margin data is only a beginning. People have to act on and make decisions with the data. But having all this revenue, cost and profit margin data is only a beginning. Ultimately, people have to act on and make decisions with the data.

The role of performance management solutions

Profitability management is one of the major components of the methodologies that constitute the broad framework of enterprise performance management. Leadership and communication are major pillars for any organization – and they are both characteristically human. By harnessing both leadership and communications to strategies and value creation, performance management can leverage profitability management so that it can blend into the organization's infrastructure – no different from its phone system, but incredibly more valuable for fulfilling the organization's purpose to continuously improve its performance.

The impact of the Internet, in all of its majesty, will manifest itself for decades. Web-deployed tools that support enterprise performance management methodologies are sure to provide not only gains in targeting customers, efficiency and asset utilization, but also the agility that organizations need to apply capital to their highest returns.

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Appendix

What determines the accuracy of calculated costs?

Academic researchers have investigated factors that influence accuracy in calculating costs for decades. For example, what determinants is product cost accuracy sensitive to or not sensitive to? However, this research was conducted before the relatively recent exponential growth in computer horsepower and digital data storage that enables transaction-based cost measurements.

This new era of cost and profit measurement supersedes the good and noble thinking of the prior generation of university faculty and professional accounting societies. It allows for a progression of cost analysis. Let's briefly understand the evolution of research and practice regarding how cost systems achieve high cost accuracy. By reviewing this history, we will better understand where we stand today.

- **Direct costing** – At the dawn of the 20th century, as the industrial revolution exploded with mass production, the cost accountants of manufacturers developed a reasonably accurate method for calculating product costs. Laborers, machines and purchased raw materials and components made up the majority of any product's total cost. So the accountants focused on these *direct costs*. They time-measured how many minutes it took to produce a unit, converted that to a unit cost per each piece made based on the worker's wage rate and machine depreciation cost, and finally added the unit's materials cost. The factory owner could then distinguish a $30 product from a $50 product. These costs were referred to as *standard costs*. Indirect manufacturing expenses, often called factory overhead, was minimal, so accountants somewhat arbitrarily allocated overhead to all of the products' standard costs based on broad averages, such as sales dollars, despite there being no causality. The cost error was considered minor.

Back then, most organizations, such as banks or telephone companies that did not deliver tangible products but rather services, made substantial profits. Sales growth was their main focus, not productivity. Consequently their managers typically did not bother to compute unit costs (e.g., cost for a completed automobile loan), or they simply used broad volume-based averages and accepted the approximate but distorted unit cost.

- **Activity-based costing for products** – As the diversity and variation of products proliferated (e.g., more colors and sizes), the complexity to manage it all generated an accelerating amount of indirect expenses relative to the direct expenses. For several decades, the accountants had allocated these indirect expenses to products' lump sums using broadly averaged factors, such as the number of units produced or those same direct costs already being measured. But in the 1980s, some executives recognized the flaw in this assumption. The cost error was no longer minor. Certain types of products uniquely consumed the costs of business processes (and the work activities that belonged to those processes) in disproportionate ways compared to the cost allocation averages. Hence in reality broadly averaged cost allocations distorted the truth with over-costed and concurrently undercosted products because it must be a zero-sum error total cost calculation. Activity-based costing (ABC) resolved this flaw by tracing indirect expenses to product costs using multiple cost driver assignments from the business process costs that reflected cause-and-effect relationships.

- **Enterprise activity-based costing** – As business shifted their focus to retaining, growing, and acquiring the more valuable types of customers, executives realized they must also understand how their nonproduct expenses (e.g., distribution, sales, marketing, administration) are traced to various types of channels and types of customers. A major reason for this increased interest in customer-related costs is that there is substantial diversity in how different types of customers placed demand on them. All customers are not equal in how they interact with a supplier. For example, high-maintenance and demanding customers (e.g., those purchasing nonstandard products, constantly shifting delivery schedules and requiring high technical support) are relatively less profitable than low-maintenance and easy customers who have a much lower costs-to-serve. This difference affected the bottom-line total profit. So the scope of applying activity-based cost principles was broadened beyond only product costing to channel and customer costs as well. As mentioned earlier, managers needed to see profit margin reporting "below the gross margin line" for each type of customer – and ideally for each individual customer.

■ The power of an ABC/M model lies in the fact that the cost assignment paths and their destinations provide *traceability* to segment costs from beginning to end, from resource expenditures to each type of (or each specific) customer – which is ultimately the origin for all costs and expenses.

Figure 6 illustrates expanding the inclusion of costs from products to ultimately products plus channel, and finally to customer-related costs, to achieve fully loaded costs. The shaded product-related costs have been the main focus of cost accounting, but the time has come to trace all of an organization's expenses, including the sizable white space in Figure 6.

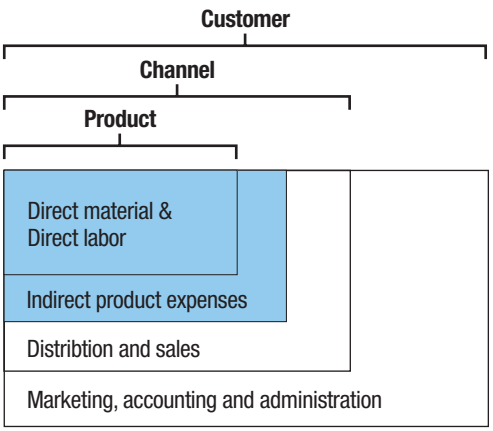

Figure 6 – Calculating costs beyond product costs

The enterprise ABC accounting method produced a huge advance in profitability reporting. When cost data was combined with the revenues from customers, enterprise ABC produced the first fully loaded profit and loss statement by *individual customer*. This was a breakthrough. In regulated financial accounting practices, the costs for selling, advertising, marketing, logistics, warehousing and distribution are immediately charged to the time period in which they occur. This is law to be complied with. Consequently, the accountants were never tasked to trace those expenses to channels or customer segments. However, with the executives' growing interset, those "below the gross margin line" expenses now needed to be traced in the internal managerial accounting system to support customer profitability analysis.

With regard to the determinants of cost accuracy using ABC methods, academic research revealed counterintuitive conclusions proven with empirical evidence. As once thought, a major determinant of cost accuracy was not precision measurement of activity costs, but rather the activity cost-driver quantities that traced activity costs into output costs, such as products. This is because any estimation or data collection error in computing the activity costs offset (i.e., dampened out) when those same activity costs aggregated into the individual type of product, channel or customer cost. This is counterintuitive but true. Why does this matter? In the information sciences, academics place high emphasis on weighing the administrative efforts to manage data versus the benefits received. It is the classic costs-versus-benefits test. Consequently with calculating costs, the academics search for the best ways to arrive at the point where diminishing returns on extra accuracy of a cost are not much more beneficial than the incremental administrative effort to collect and calculate the cost data. Their conclusion from analyzing the ABC methodology was to save effort on precisely measuring what workers do, and spend more effort on measuring the quantity of the activity cost used.

But even more startling was the fact that the cost assignment architecture itself is an even more dominant and influential determinant of accuracy than the precision of the cost assignment quantities. This meant the ABC model cost assignment design and architecture itself was the most influential determinant to balancing the cost accuracy with the level of administrative effort to collect and calculate the cost data. In hindsight, this conclusion is not surprising. This type of ABC method applies a "push" or "top-down" approach that initially begins with perfectly accurate expenses recorded in the general ledger accounting system (it is the law), and then transforms the expenses into the various process, activity and eventually output costs – all based on causal relationships. In other words, a good cost assignment design could tolerate modest error from cost estimates used in the costing model.

- **Transaction-based costing** – As noted earlier, a revolution in computer technology has occurred that enables large-scale and detailed profitability reporting. The revelations about key determinants and influencers of costing accuracy concluded from 1990s research are now being superseded by the sheer strength of computer power and data storage.

  The academics had always considered the administrative processing effort to measure costs as a factor for knowing when to quit getting more detailed. Achieving ever-higher levels of accuracy was simply not justified given the extra work. At some point, the data becomes accurate enough for decisions. But, as mentioned earlier, applying computer technology converts that administrative effort to near zero (after the automated cost system is initially designed and configured). As a result, the new principle for attaining high cost and profit accuracy is to measure price and costs consumed at the moment consumers exchange their cash – at the instance of a transaction.

Figure 7 illustrates how the accuracy of transaction-based costing, following an initial setup effort, quickly produces high accuracy with modest administrative effort to calculate an individual customer's profit.

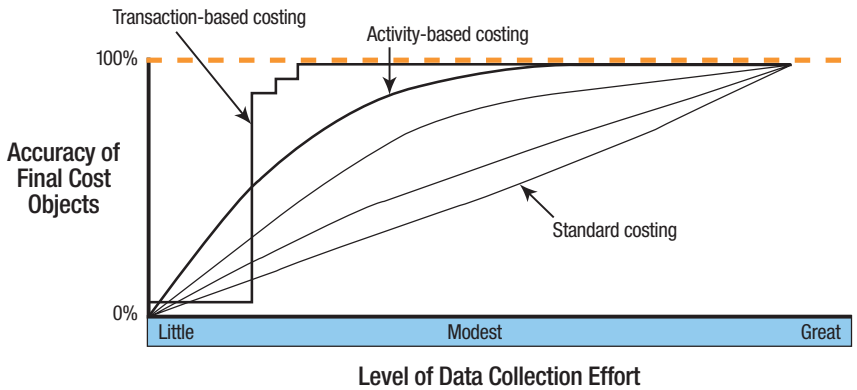

Figure 7 – Balancing levels of accuracy with effort

In Figure 7 the activity-based costing method is superior to traditional standard costing methods. Its asymptotic curve rises quickly before it levels off where there are then diminishing returns on extra accuracy relative to the extra effort. But the transaction-based costing method provides instant high accuracy following its initial setup effort.

The main issue being discussed here is not only determining the profit contribution of customers, including accurate costs for the products they buy, but also understanding the elements of customer-specific work that make up the entire costs-to-serve for each customer. It is no longer acceptable to not have a rational system of assigning so-called nontraceable expenses to their causal sources of origin, whether those sources are suppliers, products or customers.

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