IMPROVING OPERATIONS: NOT AS SIMPLE AS ABC

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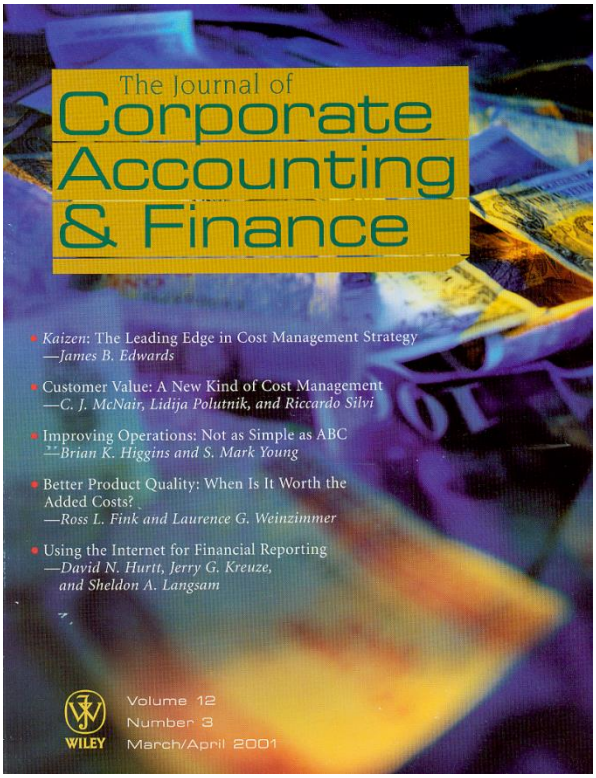

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Improving Operations: Not as Simple as ABC

Brian K. Higgins and S. Mark Young

Often, it seems as though as soon as we embark on an improvement strategy, other more promising approaches hit the best-seller list. Although significant advancements in management science have emerged over the last several decades, management continues to search for the magic bullet — the one strategy that requires no effort but provides all the right answers.

As soon as we launch one cost management strategy, newer and better ones hit the best-seller list. That's because management wants a magic bullet — a strategy that requires no effort but provides all the right answers. But is there a more realistic alternative that balances the needs of all the stakeholders?

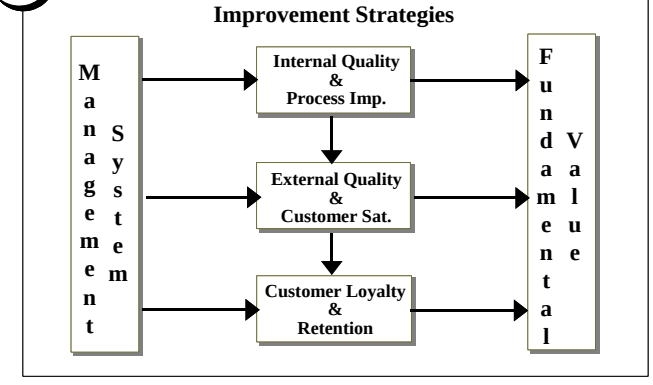
Johnson & Gustafsson (2000) discuss how the emphasis has shifted from internal quality improvement during the 1970s to external quality and customer satisfaction in the 1980s later to be followed by customer retention and loyalty — commonly referred to as Customer Relationship Management (CRM). (See Exhibit 1.) Typically there is no overarching management system that directs these initiatives across sponsoring functional groups that have different agendas and expected outcomes. While some programs are narrowly focused on either the financial or the qualitative aspects of the business, others may be so general that they do not provide specific and actionable results.

For example, cost improvement programs may conflict with studies designed to capture customer satisfaction and loyalty. Emphasis on the qualitative aspects of organizational performance (for example, customer and/or employee satisfaction studies) may not sufficiently incorporate the financial needs of the business. Quite often, such programs may result in sub-optimizing overall financial and operational performance. Conversely, there are a number of management frameworks that emphasize the interrelationships between the quantitative and qualitative dimensions of the business. Malcolm Baldrige, Balanced Scorecard, and the Service Profit Chain are a few examples of such frameworks, but they may not offer the necessary tools to identify and prioritize improvement opportunities, ensure that there is adequate balance between internal and external needs, and align business processes with the strategic and operational goals of the business and its customers.

Improvement initiatives generally fall into two categories: (a) those focused on achieving quantitative improvement which are typically numerically based, and (b) those focused on qualitative improvement which rely on changes to "soft" information metrics such as attitudinal or perceptual information captured from employees, customers, and other stakeholders. Another characteristic of the multitude of performance enhancement tools is that they are often narrowly focused on only a portion of the total operating characteristics of the organization (for example, customers, employees, cost, and so forth).

Dozens of articles exist that explain the reasons why improvement programs fail, with failure rates estimated to run from 30 percent to over 60 percent. There are some commonly agreed upon reasons for the failure of popular improvement initiatives, such as the lack of top management support and the lack of employee buy-in (see Shields and Young, 1989;

Exhibit 1



Young, 1997). Additional factors include internal limitations or restrictions that impact their effectiveness as well as competition for resources and executive management sponsorship. In today's fast-paced business environment, management also expects results in short order — six months or less. These issues represent the principal reasons that many improvement initiatives often fail to deliver on improving the overall fundamental value of the enterprise.

What is required is a comprehensive, yet comprehensible, approach that balances the needs of the respective components of overall operational performance. A narrow focus on costs may unwittingly sacrifice stakeholder loyalty while overemphasis on stakeholder satisfaction often negatively affects financial performance. What is required is a methodology that properly balances the needs of all the constituents that affect success. To overcome the causes of failure, an effective intervention needs to integrate both the quantitative and qualitative aspects of the enterprise into a system that effectively links processes, activities, costs, performance metrics, lines of business, and stakeholder perceptions — one that produces demonstrable results in a timely and efficient manner. This article presents such an approach, one that integrates the needs of the customers and employees in balance with the financial demands of the business. An approach that recognizes that "downstream" results are achieved only by optimizing "upstream" processes and activities while identifying the most opportune changes required to improve overall value.

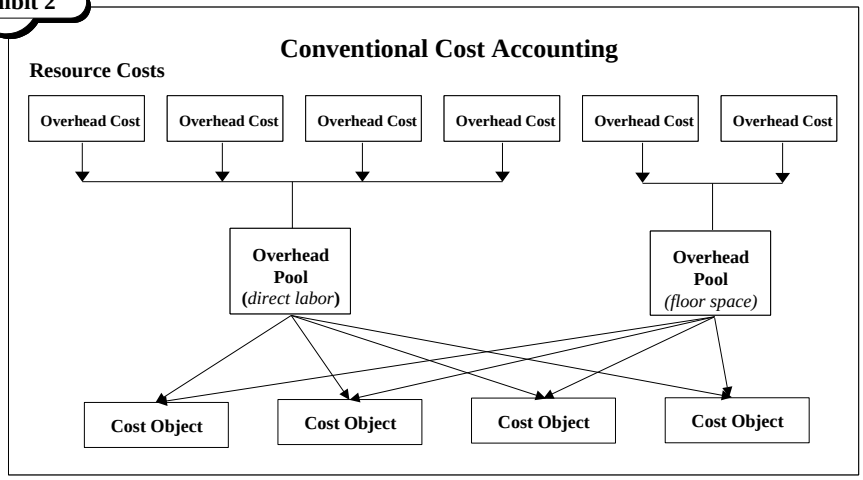
IMPROVEMENT IMPERATIVE

Typically the need for improvement is identified through the realization that a gap exists between current and desired performance which can only be remedied through some type of intervention (Elnathan, Lin, & Young, 1996). Such realization often comes from either internal and/or external information, such as lower profits, loss of market share, and declines in stakeholder loyalty (employee and/or customer). Often, only the symptoms are identified and not the root causes. Therefore, the organization often jumps to conclusions in its quest to identify the causes of poor performance. Inasmuch as this article focuses on cost management, it begins with a brief explanation of the sources of operational cost information.

Traditional Cost Accounting

Cost accounting has its roots in the 1800s where the total production (units) was divided by total costs to arrive at fully-allocated unit costs. This system worked well as long as the organization only had a single line of business. However, to fully cost expanded product lines it was necessary to devise a method to assign indirect costs to the various product lines. The cost allocation methods that were developed during the late nineteenth century are still used today by at least 75% of businesses. Indirect and other overhead costs are "pooled" then assigned to the lines of business through elaborate allocation methods. For example, it is very common to find overhead costs assigned to products on the basis of direct labor. Machine hours, floor space, number of employees, and revenue are other factors that are often used to assign overhead costs to products and services. (See Exhibit 2).

Exhibit 2



These allocation methods are satisfactory when overhead represents only a small fraction of total operating expenses. However, as overhead costs become significant, cost distortions frequently occur with such cost allocation models. Today, it is not unusual to find that overhead costs exceed 50 percent to 60 percent of total spending, especially in high-tech manufacturing and large financial institutions that have significant shared costs. Traditional cost accounting distorts product costs if overhead expen-

ditures are assigned to the products on the basis of resource consumption. New products and services contribute disproportionately to overhead costs, but may have not established revenues or a proportional share of direct labor. Therefore, conventional cost accounting methods create an internal "welfare" system whereby such overhead costs are shifted from new or less mature products to larger and more mature product offerings. This practice distorts both the costs and computed profit of all lines of business. Unfortunately, the information required for effective cost management is either missing, or worse, distorted. This leads management to make poor decisions regarding product mix, pricing, profitability, cost management, investment decisions, etc.

Strengths and Shortcomings of Conventional Cost Accounting

This section presents the strengths, weaknesses and limitations of conventional cost accounting systems to adequately provide the necessary information required for effective cost management.

Strengths:

- *Intuitive and straightforward*. Such systems are very easy to understand and represent a simple method for assigning overhead expenditures to products and services. By simply following the consumption of resources, overhead costs can be traced to the products in the same proportions. The products and services that consume the most resources are assigned a proportional amount of the overhead costs.

- *Ease of application.* Assigning overhead costs on the basis of consumption factors such as direct labor hours, machine hours, revenues, floor space, etc., is simple as long as the factors have been identified by product and/or service.

- *Acceptance.* Such cost allocation methods are widely used and therefore acceptable and easily understood by management.

Weaknesses and shortcomings:

- *Based upon faulty assumptions*. It is highly dependent upon an accurate understanding of the consumption of resources by line of business, a necessary requirement to allocate overhead costs. It assumes that there is a corresponding link or relationship between the consumption of direct resources and overhead expenditures. This assumption is the root cause of cost distortions in contemporary cost accounting systems as there is typically no cause-and-effect relationship between the consumption of direct resources and overhead costs.

- *Inaccurate product costs*. When overhead costs represent a significant portion of total spending, traditional cost accounting systems unfairly "burden" products and services with unwarranted expenditures that distort product and service cost. Faulty assumptions result in faulty product costs. Inaccurate product and service costs will lead to poor management decisions regarding product mix, pricing, profit projections, and literally all management decisions which rely on an accurate understanding of costs.

- *Relies on "pooled" costs*. Whenever costs are pooled, then averaged across the resource units of consumption such as labor hours, some products will be over-costed while others will be under-costed. Such allocation methods assume that overhead expenditures are directly proportional to the consumption of resources. By definition, products and services are assigned the "average" cost per unit of consumed resource regardless of the actual overhead expenses generated by specific lines of business.

- *Lack of stakeholder information*. Traditional cost accounting systems are numerically based and typically void of any information from stakeholders that would assist in effective cost management.

- *Little help in service companies.* Service organizations typically have not identified the allocation factors required for overhead allocation. Services are "manufactured" at the time of delivery and thus may require different levels of resource investment depending upon the needs of the customer. According to Kaplan and Cooper (1998):

  > *Service companies, lacking tangible products, have no financial reporting requirements at all for allocating indirect and support expenses to the services they produce or the customers they serve. Consequently, most service companies do not suffer from distorted cost numbers; they have no cost numbers at all since they do not measure the costs of producing their*

individual products, delivering their individual services, and serving their individual customers…nor to they know anything about the costs of the activities and processes they perform.

- *Limited cost basis.* Traditional cost accounting systems are based solely on expenditures expressed in terms of dollars and offer little information regarding other methods of measuring the consumption of resources. For example, work hours and Full-Time Equivalents (FTEs) are useful for measuring and projecting staff requirements.

Except in rare cases, conventional cost accounting does not provide reliable information necessary for effective cost management — wrong conclusions lead to wrong solutions.

Conventional Activity-Based Costing

Recognizing the shortcomings of conventional cost accounting, activity-based costing (ABC) has emerged as the tool from which product cost distortions will be lessened. It has been designed to eliminate those large cost pools and unrealistic allocation methods associated with conventional cost accounting. ABC is a system of cost assignment that traces resource costs, through activities, to cost objects (products, services, customers, etc.) — see Exhibit 3. ABC follows a two-stage process that maps resource costs to objects based upon the consumption of activity costs. In essence, objects consume activities and activities in turn consume resources.

In conventional ABC, the general ledger (GL) forms the basis from which costs are identified. First, the general ledger accounts are traced to activities using "resource drivers." Next, Activity Cost Drivers (ACD) are used to trace activity costs to objects. ACD rates are computed by dividing the unit volume of the driver by the total activity cost. The resultant driver rates are used to assign activity costs to the objects based upon the consumption of the drivers by each object. Since this may sound a bit confusing, an example that demonstrates how costs are traced from the GL to products would help clarify these concepts.

Example of ABC Costing

To make the example as simple as possible, yet demonstrate the concepts, assume that a small loan company wished to perform an ABC analysis of its operations. This loan company had two types of costs: (a) salary expenses, and (b) non-salary expenses. Additionally, it performs only two activities: (a) approve loans, and (b) process loans to support two lines of business: (a) personal loans, and (b) business loans. A single cost driver will be used in the analysis — the number of loans processed will be used to assign activity costs to the two lines of business.

Stage 1: Activity Costing

The resource driver is the percentage of consumption of the resource costs by the two activities. In summary, Exhibit 4 shows all that is required to trace resource costs to activities.

Stage 2: Object Costing

The next step consists of tracing the activity costs to the various lines of business by applying the cost driver rates that represent the consumption of the activity costs by each type of loan. In ABC, driver rates are the method by which activity costs are traced to lines of business. In this case, the loan company recognized that approval takes the same amount of time for each type of loan. However, business loans consume three times the resources than do personal loans with regards to processing. Therefore, a weighting factor is required to take the intensity of the consumption of activity costs into consideration. Weighting ACD rates is the method

Exhibit 3

Conventional Activity-Based Costing

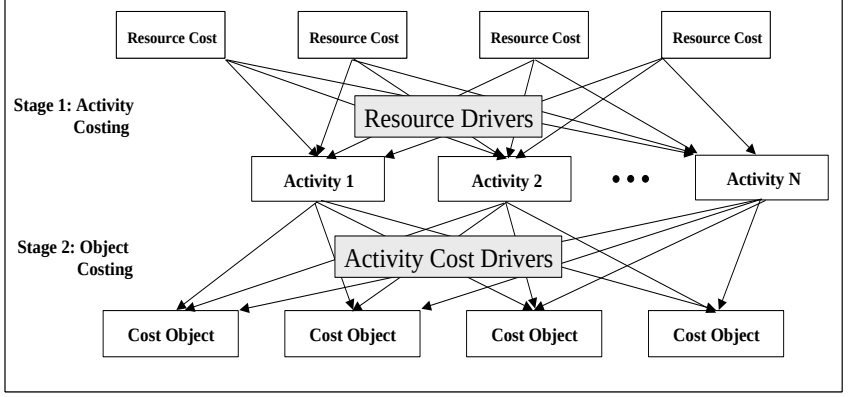


Exhibit 4

Resource Cost Assignments

Resource Category	Resource Cost	Activity: Approve Loans	Activity: Process Loans
Salaries	$3,000,000	10%	90%
Non-Salary Expenses	$3,000,000	30%	70%
Total	**$6,000,000**	**$1,200,000**	**$4,800,000**

commonly used to assign the activity costs to the lines of business consistent with the consumption of resources. The method used to compute weighted ACD rates is not the subject of this article and will be presented in summary form for the reader to examine. (See Exhibit 5).

Exhibit 5

ACD Rates

Cost Objects	# of Loans	Activity: Approve Loans $1,200,000 Weight	Activity: Approve Loans $1,200,000 ACD Rate	Activity: Process Loans $4,800,000 Weight	Activity: Process Loans $4,800,000 ACD Rate	Total Cost
Personal Loans	10,000	1.0	$80.00	1.0	$192.00	$2,720,000
Business Loans	5,000	1.0	$80.00	3.0	$576.00	$3,280,000
Total	15,000					$6,000,000

Using the ABC cost model presented previously, Exhibit 6 illustrates how resource costs are traced through activities to the cost objects — in this case the two types of loans.

Activity Based Cost Management

It was soon recognized that ABC was an important advancement in the field of cost accounting. Although ABC improved product, service, and customer costing, it did not offer effective cost management solutions. Understanding costs was the first step, but a need still existed for ways to actually "manage" costs — especially if the findings produced through ABC identified cost and/or profit issues. Activity-based cost management (ABC/M) represents the range of initiatives that can be taken with ABC cost information. Although ABC/M is considered the "next generation" of cost management, a number of questions still remained:

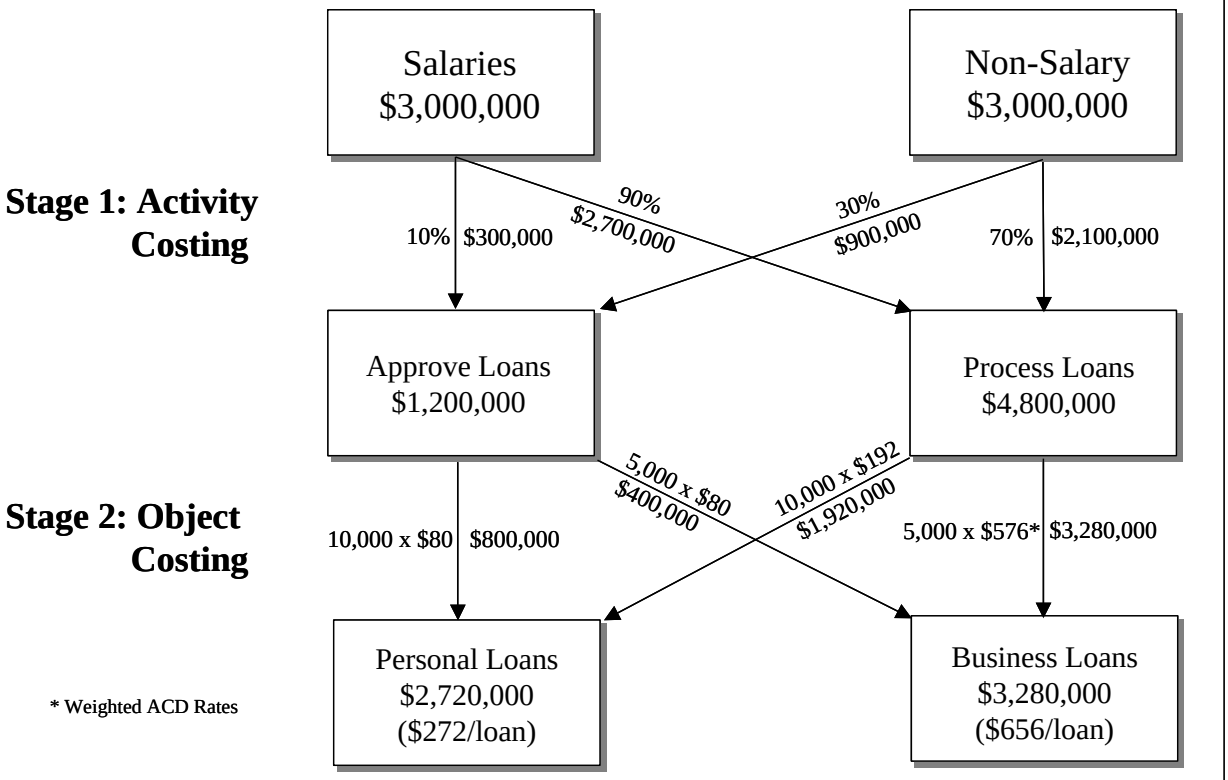
- Will ABC/M actually uncover the true costs of the organization's products and services?
- How well can ABC/M identify the hidden and shadow costs that drain the organization of its resources and profitability?
- Can ABC/M affect change in the intangible drivers of cost, such as poor planning, inadequate communications, and poor employee training, which generate excessive and avoidable costs?
- Do the analytical tools associated with ABC/M identify the opportunities necessary for the organization to improve financial and operating performance without sacrificing quality, customer loyalty, and employee satisfaction?
- Will ABC/M really deliver on its promise of producing demonstrable cost management solutions within an acceptable period of time?

Strengths and Shortcomings of Contemporary Activity Based Cost Management

To answer the above questions, a careful examination of the strengths and weaknesses of contemporary activity-based cost management is in order. While ABC/M is a true revolutionary concept in the field of cost accounting, its strengths are often offset by its shortcomings.

Exhibit 6

Loan Company ABC Model



Strengths:

- *Improves relationships between costs and products*. The ABC model provides a "road map" that links resource costs to products through activities. ABC improves the assignment of costs by offering a greater number of logical cost assignment relationships (drivers) that match activity costs to the lines of business.

- *Improves line of business costing*. ABC offers a more logical methodology for tracing resource costs to the lines of business.

- *Eliminates large cost pools*. ABC eliminates the large cost pools that are associated with conventional cost accounting. ABC uses smaller "activity pools" whose relationships to the lines of business are much more logical and thus improves product and service costing.

- *Expands tool set for cost management*. The introduction of activity-based cost management brought some additional tools to assist in the identification of non-value-added costs or other attributes that affect financial and operational performance such as the relationship between activities and core competencies associated with achieving organizational goals and objectives.

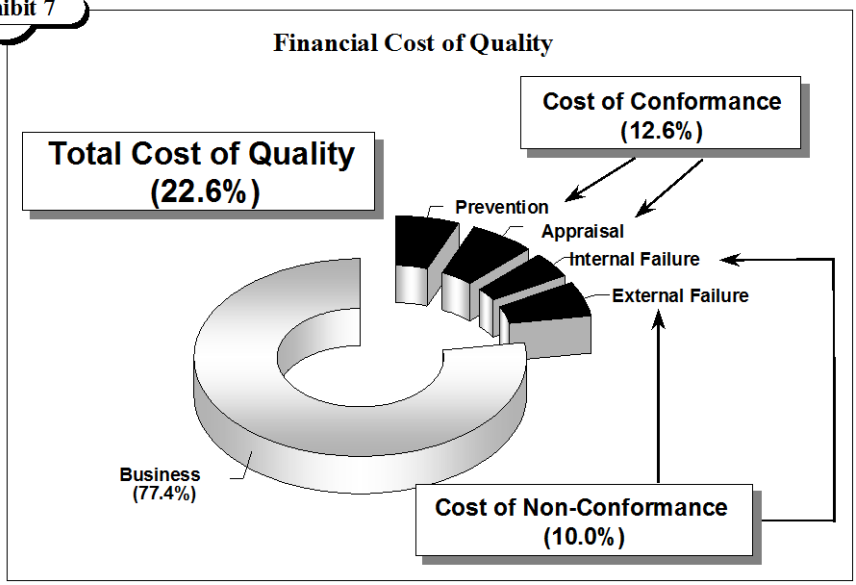
- *Develops logical relationships between spending and object costs.* Perhaps the most important innovation is the logical approach for tracing costs to products and services. Unlike conventional cost accounting, ABC presents a reasonable, and therefore acceptable, method for costing the lines of business and computing the financial contribution of the products and services.

Shortcomings:

Many of the advantages of ABC/M are offset by its disadvantages that may also contribute to product and service cost distortions. While unfortunately offering a sense of complacency, which creates unwarranted faith in the financial outcomes, understanding the true costs and the ability to effectively manage costs are significantly compromised.

- *Lack of process identification and activity dependencies.* In most applications of ABC, a simple "laundry list" void of interdependent relationships between activities is developed. The lack of dependencies between processes, sub-

Exhibit 7



processes, and activities significantly limits the use of ABC for effective operations and financial management.

The activities related to supporting the internal infrastructure are "mapped" to the other activities that pertain directly to the delivery of products and services. This "mapping" often occurs before activity costs are assigned to lines of business. This step is necessary because direct linkages to external drivers (such as sales orders) cannot be made with internally-focused activities. Therefore, understanding the costs associated with infrastructure support is often not available on a line of business basis and limits effective cost management.

- *Limited to financial measures only*. Since the data source for ABC is the general ledger, the only measure of resource consumption is dollars. Limited to this measure only, operations improvement initiatives are significantly restricted and often sub-optimized. Measuring activity consumption in terms of employee effort can identify additional opportunities for improvement. For example, a study to identify the activities related to the cost of quality produced the results in Exhibit 7 in terms of financial expenditures.

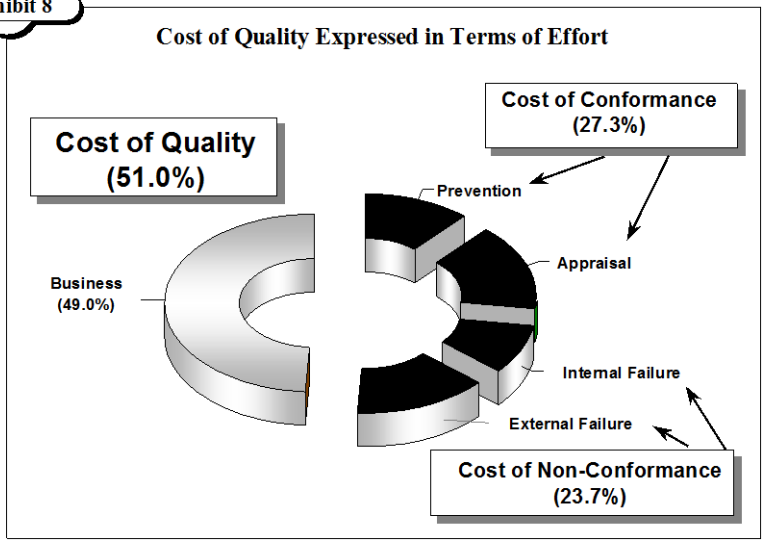
  However, a totally different perspective of the cost of quality was uncovered by examining how the work force applied their time (refer to Exhibit 8.)

  By examining the activities pertaining to the categories associated with the cost of quality, it was discovered that over 50 percent of the employee's effort was involved in quality-related activities. Such an observation would never have been made by relying solely on the financial measures of performance.

- *Continued reliance on cost "pools."* Although ABC was developed to overcome the deficiencies of cost pooling used in traditional cost accounting, ABC still employs cost pooling — at the activity level. Exhibit 3 illustrates the pooling of costs by activity, then to be assigned to the cost objects. In addition to "activity pools," other pools are often created to facilitate the assignment of costs to the activities. For example, facility and/or utility pools are created, then assigned to the activities on the basis of headcount or other personnel-distributed measures. Whenever costs are pooled and distributed to lines of business on the basis of averaged transfer or ACD rates, product and service costs will be distorted with some products being over-costed while others are under-costed.

  When the G/L is used as the basis of the ABC resource costs, some of the accounts start out as

Exhibit 8



pooled costs. For example, the salary account is often pooled, representing all employees within a cost center or department. Normally, these costs are assigned to the activities in total without any discrimination based upon the activities and lines of business supported by individual employees. Although ABC eliminates traditional cost pools, these large pools are replace by numerous "activity pools" that still aggregate costs, losing the unique identification of each resource. This characteristic leads to the next significant weakness of contemporary ABC methodologies — the lack of audit trails.

- *Lack of necessary audit trails*. A required component of effective cost management is having a good understanding of the sources and uses of costs. ABC utilizes a two-stage cost assignment process by which resource costs are aggregated — or blended — into activity pools, then those activity cost pools are assigned to cost objects using cost driver rates. Whenever a multistage process is used to trace costs from the G/L to cost objects, such as with ABC, the audit trail is lost. When costs are aggregated, individual identification, and thus the audit trail, can no longer be generated. As such it is very difficult, if not impossible, to determine which resource costs are associated with each cost object since the driver rates are based on pooled activity costs. In the previous example, both salary and non-salary expenses are aggregated within the activities then assigned to the cost objects. Also, since the initial salary resource expenses are "pooled," it would be impossible to determine which employees are associated with each line of business as all resource costs eventually flow to all cost objects. Again, in our example, it would be impossible to accurately identify those employees who are "processing business loans." With hundreds, if not thousands, of resource costs, the inability to trace the costs back to their source, significantly limits decisions related to product mix, staffing, divestitures, optimizing shared costs, etc.

  A solution for this problem is to create variations of each activity related to each cost object. Again, referring to our example, the activity set would have to be doubled to allow for the proper tracing of costs and resultant audit trails. "Process Loans" would have to be expanded into two activities, "Process Business Loans" and "Process Personal Loans." In actual application with hundreds of activities across dozens of cost objects, such modifications necessary to provide the necessary audit trails, would create an unwieldy and large activity set which would be very difficult to properly manage.

Cost driver rates are often treated as pure variable costs.

- *Reliance on drivers to cost objects*. First of all, identifying the proper cost drivers is an arduous task, and is often the most time consuming and expensive aspect of implementing ABC. In particular, service companies that do not have any cost accounting system, find it most difficult to properly identify cost drivers for their often intangible activities. Driver identification is required before ABC can be implemented and both the time and cost required to complete this task is often a major contributor to failure since this often delays management's ability to obtain results from its ABC investment. Additionally, there are a number of other identified issues related to the use of cost drivers to map costs from activities to cost objects:

  - When computing ACD rates, quality, capacity, and productivity are often not considered. As such, ACD rates cannot adequately project future resource requirements. If the current workload was less than full capacity, additional work could be undertaken without a corresponding increase in costs. Complicating this issue is when the capacity differs across lines of business. In our example, if the resources involved in processing personal loans were at full capacity while those processing business loans had significant capacity these facts would probably not be surfaced in conventional ABC applications.

  - Cost driver rates are often treated as pure variable costs. That is, as the volume of drivers increase, resulting costs would also increase proportionately. ACD rates do not often reflect the fixed and variable components of cost. Therefore, ACD rates are not good predictors of cost behavior over changes in volume and may contribute to management's lack of support for ABC as a predictive tool.

  - ACD rates are often computed over a fixed period of time, and as such, may not reflect the influences of seasonality, non-linearity, or other factors that may affect product costs. Since ACD rates fluctuate over time, they are often poor predictors of product or service costs. Kaplan and Cooper (1998) stated the

following with respect to the use of cost drivers:

> *Actual activity cost driver (ACD) rates, whether calculated daily or monthly, are inappropriate to use for operational feedback and control. Nor should actual ACD rates be used for product and customer costing either… Managers who fail to understand the issues [associated with the use of cost drivers] may set inappropriate priorities for process improvement initiatives and make incorrect decisions about products and customers.*

- As mentioned earlier, ACD rates are based upon blended costs and therefore conceal the individual components of cost which would be required to understand how the costs are mapped from resources to cost objects.

- *Lack of cost independence and weighted driver rates.* To distinguish between the consumption rates of various objects, ABC allows for the weighting of driver rates. Weighting ACD rates, in theory, is to ensure that the ABC system recognizes that some cost objects consume more of an activity's cost than other objects. In the example presented earlier, it was thought that processing business loans requires three times more resources than that required for personal loans. However, weighting factors are "relative" and reflect the consumption of activity costs between objects — they are not absolute ratings. Changes in productivity, quality, etc., would reflect as changes in relative weighting. In our example, if improvements were made in the processing of business loans so that business loans required only twice the resources as personnel loans, the result in Exhibit 9 would occur.

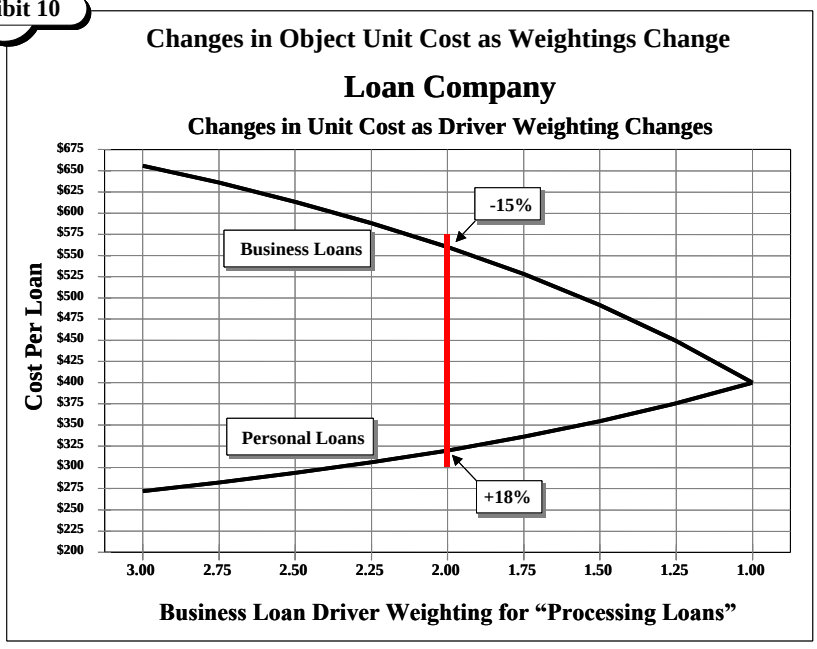
As the exhibit indicates, as the weighting for the activity "Process Loans" is lowered from 3 to 2, the costs for business loans drops as one would expect. However, note that the costs to provide personal loans has increased. Due to the "zero sum game" associated with ABC, when weightings change to reflect changes in consumption or capacity, those changes in capacity are shared across all cost objects. This contributes to a major shortcoming in ABC, the lack cost independence. That is, as changes occur to one object, the other objects will also be affected. This brings into question the accuracy and viability of the object costs produced by ABC. Returning to our exam-

Exhibit 9

Revised Weighting

Cost Objects	# of Loans	Activity: Approve Loans $1,200,000 Weight	Approve Loans $1,200,000 ACD Rate	Process Loans $4,800,000 Weight	Process Loans $4,800,000 ACD Rate	Total Cost
Personal Loans	10,000	1.0	$80.00	1.0	$240.00	$3,200,000
Business Loans	5,000	1.0	$80.00	2.0	$480.00	$2,800,000
Total	15,000					$6,000,000

Exhibit 10



ple, the chart in Exhibit 10 illustrates how the unit costs for both personal loans and business loans would be affected by changes in the weighting associated with processing business loans.

Notice in the previous graph how the unit costs for both objects change as the weighting is changed only for business loans. When the weighting is 1, as expected, the costs are the same. As the weighting moves from 3 to 1, the unit cost of business loans shrinks by 39 percent while the cost of personal loans increases by 47 percent. Even if the weighting is reduced from 3 to 2, the unit cost for personal loans increases by 18 percent. This situations begs for an answer to the question "if improvements are made to one cost object, why are the other objects affected?" This illustrates how important it is to accurately determine the relative weightings. Two potential types of errors can be made when using weighting in ABC analysis:

- Assuming that there *is no* difference in the consumption of resources when a difference *does* exist.

- Assuming that there *is* a difference in the consumption of resources when a difference *does not* exist.

The lack of cost independence brings into question the ability of ABC to provide a true representation of object costs and the ability to make informed judgments regarding the profitability of products and services. Without accurate costs, cost management efforts will be significantly hampered as the wrong conclusions often lead to wrong solutions.

- *Lack of stakeholder consideration*. Activity-based costing has been used exclusively as a tool for furthering the understanding of costs and profitability of products and services. Management decisions that have evolved from ABC have been based primarily on financial outcomes with little, if any, input or consideration from the organization's stakeholders (customers, employees, suppliers, stockholders, etc.). As ABC has evolved into ABC/M, a limited set of analytical tools were introduced — primarily the distinction between value-added and non-value-added activities. However, as Kaplan and Cooper (1998) have stated:

> *Under careful scrutiny, people usually cannot consistently define what constitutes a value or non-value-added activity… The dollars saved by improving the efficiency of a value-added activity are just as valuable as the dollars saved by improving the efficiency of a non-value-added activity.*

In many cases, an internal perspective as to what constitutes a non-value-added activity is used to identify opportunities for improvement. The authors are familiar with a nationally recognized corporation that viewed customer service as a non-value-added activity as it represented a source of cost rather than a source of revenue. After all, customer service is a form of rework which it was believed that customers do not perceive as adding value. Based upon this premise, they introduced an Interactive Voice Response (IVR) system; customers would transverse through numerous menu options before being connected with a customer support representative (CSR). Previously, all calls were immediately answered by the CSR. Although the introduction of IVR technology saved a substantial amount of money, customer satisfaction declined and eventually they lost market share which affected their overall financial performance. Another corporation, under pressure to improve bottom-line performance, increased prices to bolster profits and again, customers reacted negatively and took their business elsewhere as they no longer felt that the value proposition was being met by this organization.

In many cases, an internal perspective as to what constitutes a non-value-added activity is used to identify opportunities for improvement.

Goodman (1999), former president of TARP and now president of e-Satisfy reported the findings of a groundbreaking study by TARP in the 1970s, updated in the 1980s, regarding how customer satisfaction is linked to loyalty and intentions to repurchase. They found that between 82 percent and 95 percent of customers whose problems were resolved quickly (resulting from their first contact with the company) would purchase again as opposed to only 9 percent to 37 percent (the variation of percentages corresponded to the monetary size of the problem) who make no complaints at all. A subsequent study by Coca Cola in 1982 showed that customer satisfaction and loyalty was 10 percent higher when resolutions were achieved on the first contact as opposed to multiple contacts. Another basic finding by TARP was that customer loyalty was 8 percent higher for customers whose complaints were satisfied as

opposed to those customers who had no problems at all.

Clearly in the case cited earlier, in the eyes of the customer, customer support is a value-added activity. For many businesses, especially those whose products are considered commodities, customer support is the primary means of differentiation. Again, the determination of value is in the "eye of the beholder" or as Johnson and Gustafsson (2000) have stated, through the lens of the customer. The findings by TARP and the experiences of the authors, supports the premise that decisions regarding change should not be made in isolation or based upon an incomplete evaluation of the business. Meaningful change can only be made by considering the viewpoints of all stakeholders.

With regards to cost management, Reichheld (1996) stated that when it comes to cost, the conventional approach is to achieve reductions through process redesign or through layoffs and either approach is likely to demoralize the workforce resulting in declines in customer service. Lower customer loyalty eventually will increase costs and lessen financial performance. As Reichheld points out, the vast majority of cost reduction is performed for the benefit of the stockholders which usually destroys fundamental value. Today, most shareholders view their investments as short-term or only as long as the company is performing to their expectations. Conversely, employees have a much larger stake in the success of the business as it provides for their livelihood. Unfortunately, in a booming economy, employee dissatisfaction results in greater turnover and will have a devastating affect on customer loyalty which eventually influences bottom-line performance. However, cost reductions passed on to customers or shared with employees (directly or indirectly) increases value and supports growth.

THE PROPOSED SOLUTION — STAKEHOLDER DRIVEN COST MANAGEMENT

What is required is a comprehensive — yet comprehensible — image of the organization that effectively links bottom-line performance to processes, activities, costs, lines of business and stakeholder value in a balanced approach that optimizes the fundamental value of the enterprise. A process that is consistent with, and supports, contemporary management frameworks such as Malcolm Baldrige, Service Profit Chain, and the Balanced Scorecard that have become the stalwarts of contemporary management. These management frameworks recognizes the need for an approach that fosters balance between internal and external requirements. A methodology that improves product and service costing while providing the necessary audit trails and tools necessary to affect meaningful change. A process designed to enhance customer and employee loyalty while improving financial and operational performance (see Exhibit 11).

Exhibit 11

An Integrated Model for Business Solutions

In an article in the *Harvard Business Review*, Roach (1991) states:

> *Services need an accounting framework that can identify which activities add the most value… Activity-based managerial accounting is a step in the right direction, but much more work in this area remains to be done… It should go without saying that a metric for quality is equally important.*

The methodology that is described in this article has been designed to address the shortcomings of conventional ABC while integrating stakeholder perceptions necessary to enhance the value, and support profitable growth, of the enterprise. This approach has its roots not in accounting but in Value Engineering, which is a technique for increasing the *value* of a product or organization rather than simply decreasing its cost. The methodology answers the following questions:

- What is the true cost of products and services without using outmoded allocation methods or reliance on cost driver rates that may distort costs? What are the costs associated with the hidden or shadow activities performed throughout the organization?

- Which activities provide value in terms of meeting both customer and employee requirements while enhancing both growth and financial performance?

What is the true cost of products and services without using outmoded allocation methods or reliance on cost driver rates that may distort costs?

- Which activities require corrective action whereby resources can be shifted from non-mission or non-value-added activities to those activities that will help the organization achieve their goals and objectives?

- Where are the sources of cost? Which departments should be contributing to each line of business? Are there work groups or departments that are involved in activities or lines of business that are not part of their mission? Are the talents of employees optimized — do we have the right people doing the right things at the right time? How can staff efforts by optimized?

- What are the perceptions of the stakeholders regarding the activities performed? How well are the resources aligned to meet the strategic direction of the customers?

- Which processes and activities hold the promise of achieving breakthrough changes that will affect future financial and operational performance?

To address these questions, the methodology associates external requirements with the internal resources in a time-efficient manner. The process overcomes the deficiencies of conventional cost management approaches described earlier in this article by:

- Identifying the interrelationships between processes and activities in a manner that presents both a macro and micro view of the organization — including the activities associated with supporting the organization's infrastructure.

- Applying metrics that measure both the financial investment and the effort of the workforce, permitting accurate staff projections as the business changes.

- Eliminating all pooling and averaging costs that tend to distort product and service costs by directly linking every cost element to both activities and objects simultaneously. Eliminating the time-consuming and expensive reliance on identifying and computing driver rates and inaccurate weightings.

- Using a single stage cost assignment schema that will provide a complete "forward" and "backward" audit trail, linking all resource costs with activities *and* cost objects.

- Generating object costs independently so that changes to one object does not affect the cost of other objects. For example, changes in capacity due to process streamlining are reflected only in the object that was changed.

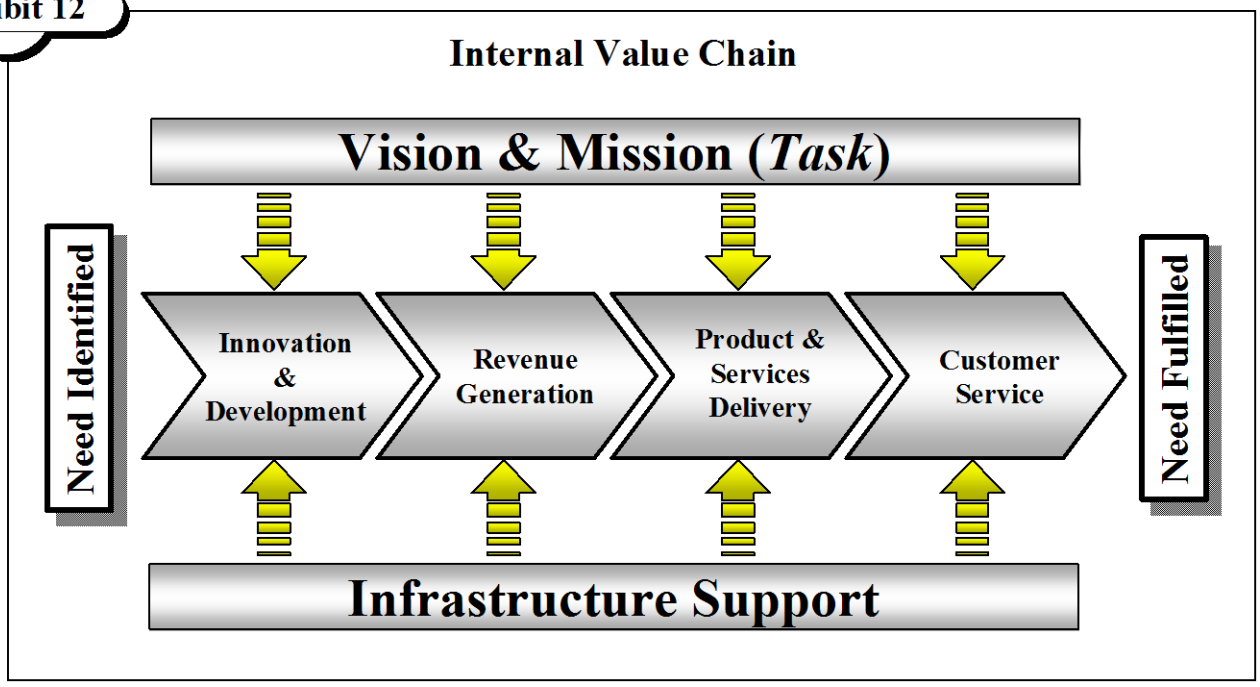
- Associating stakeholder information to activities for the purpose of identifying dysfunctional processes — relating customer information to financial performance.

- Offering an expanded analytical "tool kit" that will identify improvement opportunities based upon external requirements in balance with the needs of the organization and its employees.

Identifying Activity Dependencies

The processes and activities performed within an organization provide the basis from which all costs will be collected and stakeholder perceptions will be gathered as they provide the foundation by which value is created. If the set of activities is not adequately prepared, the entire cost management initiative would be in jeopardy. The approach described in this article uses the verb-adjective-noun descriptions of activities which follow the set of internal value-chain processes (refer to Exhibit 12):

Exhibit 12



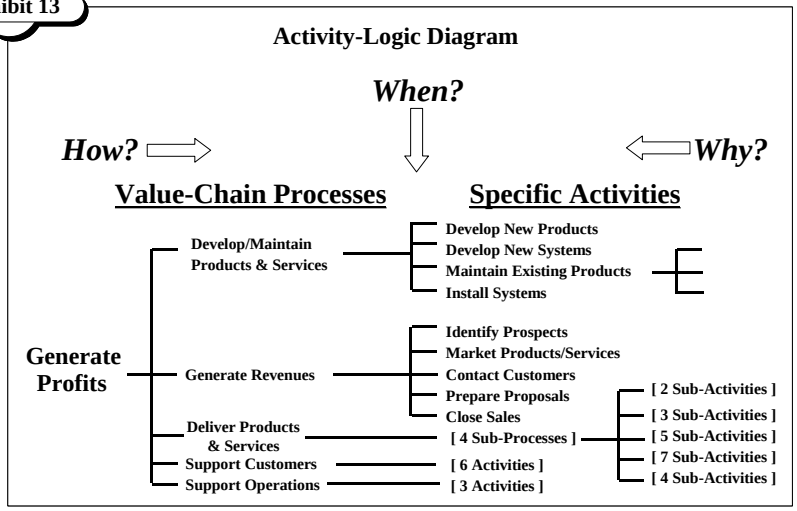
The internal value chain major functions are further decomposed into supporting processes and activities. Exhibit 13 is an example of Activity-Logic Diagram (ALD) that illustrates the hierarchical relationships between processes, sub-processes, and activities that support the internal value chain.

There are a number of advantages associated with the of the Activity-Logic Diagram as a tool for process and activity identification:

- The activities are arranged in a logic format, graphically illustrating the relationships between activities and processes. It forms a convenient communication tool that permits both a macro and micro perspective in terms of the activities performed throughout the organization. When costs and/or efforts are applied to the activities, an inherent feature is that the diagram presents a mechanism by which costs can be "drilled" down from major processes to detailed activities.

- The ALD is very fast. As opposed to several weeks or months typically required to identify activities in ABC, the ALD generates between 350 and 500 activities within only a few days with very little training on the part of the user.

Exhibit 13



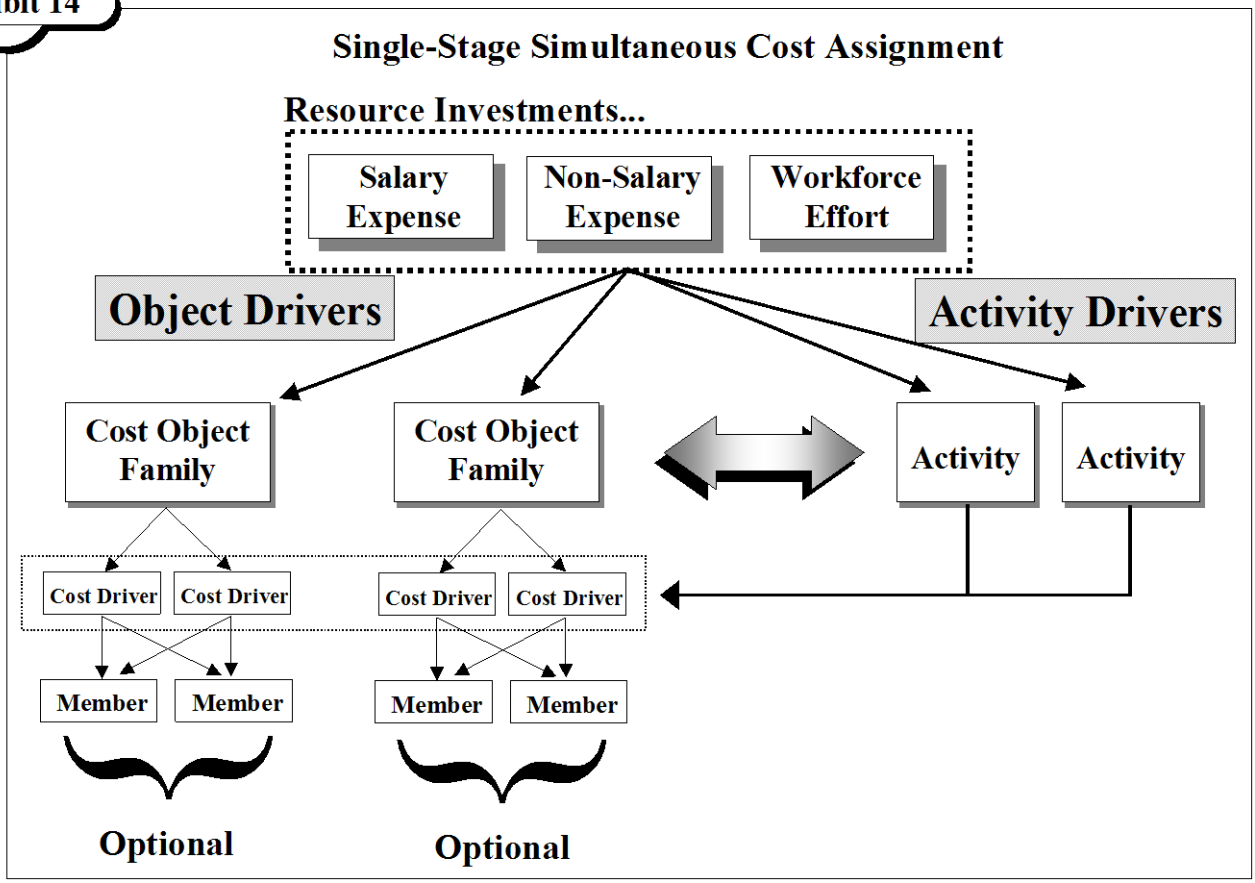
Use of Multiple Metrics

The described methodology utilizes both dollars and employee effort as the basis from which activities are "costed." Using employee effort in addition to dollars, offers a different perspective of how human resources are being utilized to achieve value. This type of "cost" also permits accurate staff planning based upon activities, volumes of work, and lines of business.

Improved Object Costing — Elimination of Activity Pools

Rather than employing a two-stage cost assignment process similar to ABC, this process uses a single-stage method that assigns cost to both activities and cost objects simultaneously (see Exhibit 14). This overcomes a number of ABC's

Exhibit 14



shortcomings. Every cost element is directly linked to activities and cost objects which provides both a "forward" and "backward" audit trail. It is possible to examine the processes and activities that support each object, then drill back to every cost element that contributes to each activity.

As Exhibit 14 illustrates, resource elements are directly assigned to both objects and activities using Single-Stage Simultaneous (S^3) assignments. Note that cost drivers are computed, but driver costs and/or efforts are not applied until *after* the costs have been assigned to the lines of business. This permits accurate computation of driver rates that will be most useful in projecting staffing and financial requirements into the future and accurately reflects the true differences in resource consumption by the various cost objects. Since object costs are computed independently, changes in the delivery system that impacts costs will pertain only to the object affected.

With regards to the Loan Company example, the activity costs would be computed as shown in Exhibit 15.

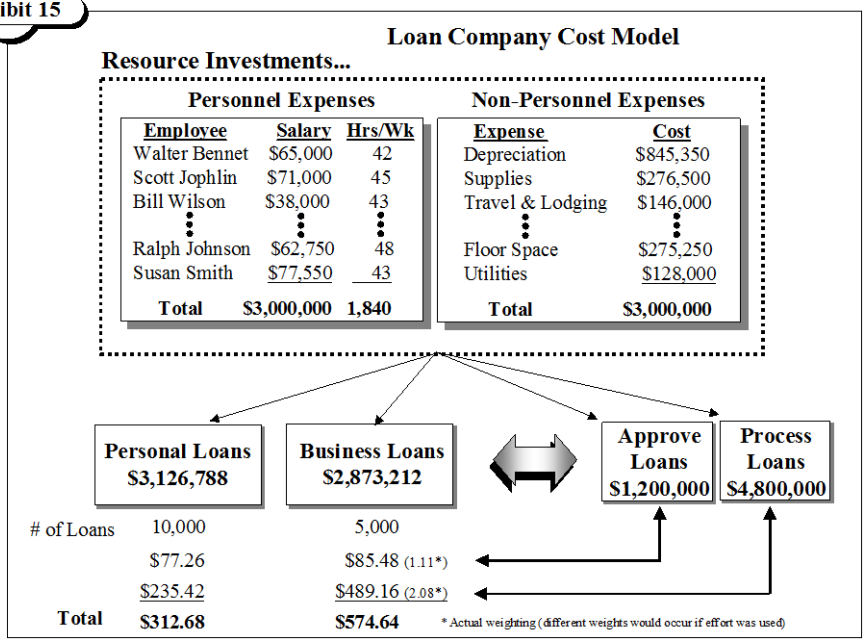
Notice in the model in Exhibit 15 that the *true* cost of approving and processing loans has been computed. If management, concerned about the higher cost associated with handling business loans, wishes to improve performance, they can easily identify all resource costs specifically associated with this line of business. Also, only a single driver need be used with different rates for both activities and across different lines of business — this makes the model easier to maintain and more accurate.

Capturing and Linking Stakeholder Loyalty to Activities

Johnson and Gustaffson (2000) define loyalty as a measure of a variety of behavioral intentions on the part of the customer (ratings of the likelihood that customers will continue doing business, will purchase other products and services from the company, and will speak positively of their experience to others) or actual behaviors such as whether customers do return, how much they purchase in the future, and whether they bring or refer additional customers. Similar criteria can be used to measure employee loyalty (refer to Exhibit 16).

In a number of cases, employee and customer surveys are a common tool to identify the attributes that drive

Exhibit 15

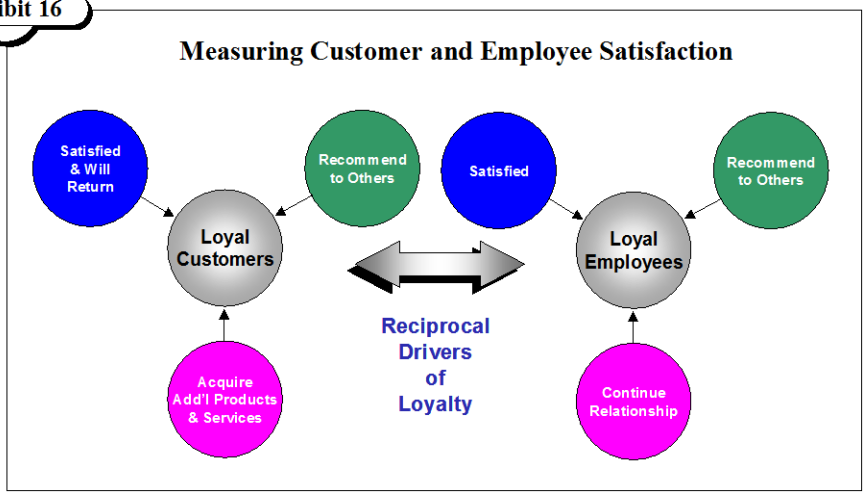


Another convenient method for showing the relationship between importance and performance is through a gap analysis (refer to Exhibit 18) where opportunities for improvement can be derived from the gap between important attributes and actual performance.

A variation of importance-performance grid (Exhibit 17) under the methodology described in this article would introduce costs into the analysis which offers a new dimension with regards to prioritizing improvement opportunities (see Exhibit 19).

A different set of priorities is developed when the costs are taken into consideration. For example, attributes — linked to activities and costs — which are deemed as having low importance, low performance, but having high costs would have a much higher priority than similar attributes in which the costs have not been determined. Additionally, the introduction of costs into the measurement of customer and employee loyalty, helps leverage the investment in such initiatives and overcomes a frequent issue with regard to implementing change — the financial return on investment associated with changes based upon qualitative stakeholder information.

Exhibit 16



loyalty. Using bi-variate correlation analysis, the attributes can be associated with the criteria that corresponds with employee and customer loyalty. The attributes that are highly correlated to the level of loyalty can be linked to organizational activities and costs. This will ensure that corrective action will be directed to those activities that drive loyalty *and* have the potential for improving bottom-line performance.

Johnson and Gustafsson (2000) as well as a number of other experts in the field of measuring loyalty suggest using an importance-performance analysis. Such an analysis maps the attributes that drive performance into a simple matrix that helps prioritize the improvement opportunities. (See Exhibit 17).

Measuring Internal Customer Satisfaction

It is often much easier to measure internal-customer satisfaction as the logistics are often easier to understand and control. Organizations that have a significant portion of shared services need to assess the internal customer satisfaction by polling respective customers regarding the importance and performance of activities performed. Exhibit 20 shows the typical results from an internal customer satisfaction analysis for an information technology (IT) group. The activities requiring corrective action are plotted in a prioritization grid. The FTE column in the analysis introduces the cost of the activities expressed in terms of the effort expended.

Exhibit 17

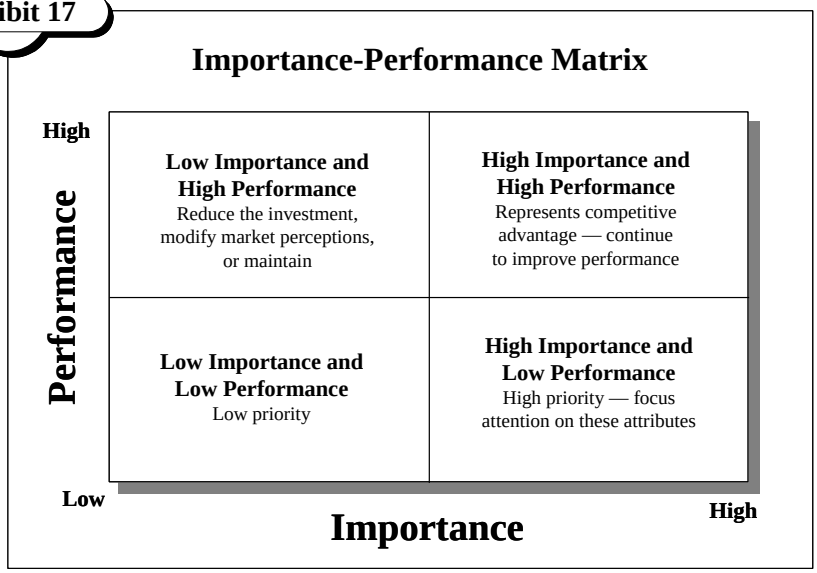
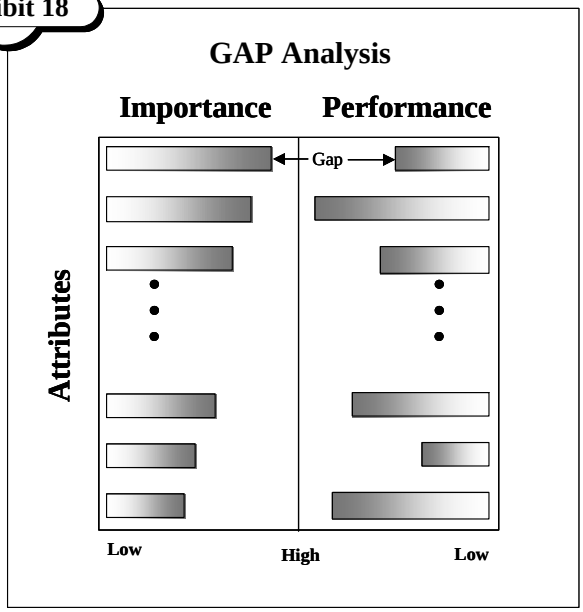


Exhibit 18



In this case, it is apparent that the IT group may need to invest more effort into "Documenting Systems" as it is deficient in the viewpoint of their customers.

Expanded Tool Set

If both financial and non-financial (effort) is used in the analysis, numerous tools can be used to identify opportunities for corrective action. Below are listed just a brief description of some principal tools that can be employed:

- *Cost Driver Analysis* — An understanding of what events and circumstances causes work to be performed is very important. With this approach, the true cost for each major cost driver can be determined and evaluated in terms of the value that such drivers bring to the organization.

- *Non-Mission Analysis* — Within each work group, the amount of time and/or cost can be associated with the activities which do not relate to the mission of the group. For example, the amount of time that the sales force spends in non-revenue generating activities. If an inordinate amount of time is spent on such activities, these become targets for improvement that will eventually achieve improved leverage from existing resources.

- *Cross Functional Analysis* — This tool measures the cost and effort applied to processes and activities across departmental boundaries. Such an analysis is useful in identifying potential overlap and duplication across functional groups that negatively impact cost and performance.

- *Fragmentation* — This is a measurement that compares the number of employees involved in an activity as compared to its FTE content. For example, an activity may have dozens of employees involved yet only equivalent to a few FTEs — such activities are fragmented and may be targets for consolidation.

- *Financial Analysis* — Once the true cost and profitability are determined for the lines of business, a common tool to examine the relative profitability and the potential that exists for profit improvement is a "whale curve" (see Exhibit 21).

Without information from customers, such an analysis might lead management to conclude that the products and services on the right side of the curve should be eliminated. However, such decisions cannot be made without a thorough understanding of the market and cost impact that would result if such actions were taken. Only with the "backward" audit trail can the true cost impact be determined by identifying the costs that will be saved and the costs that will continue to be shared by the remaining objects if product offerings are eliminated.

Exhibit 19

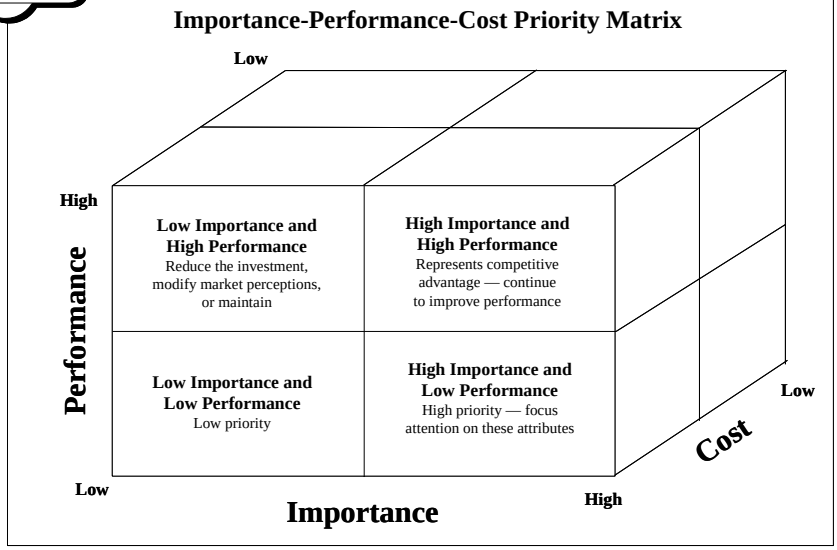


Exhibit 20

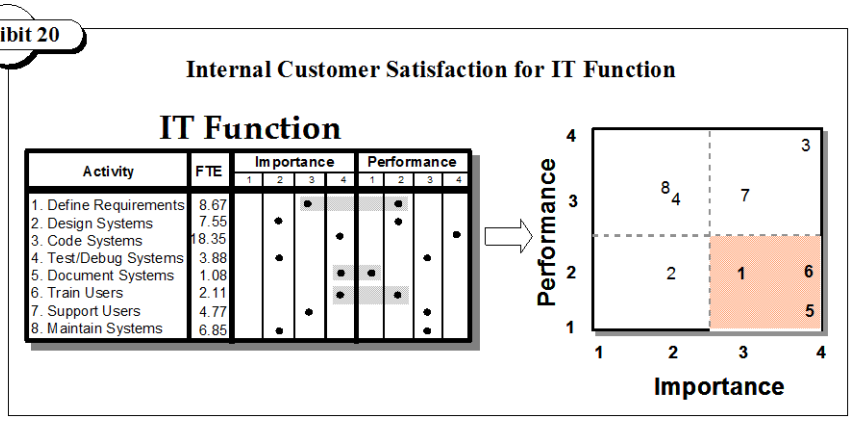
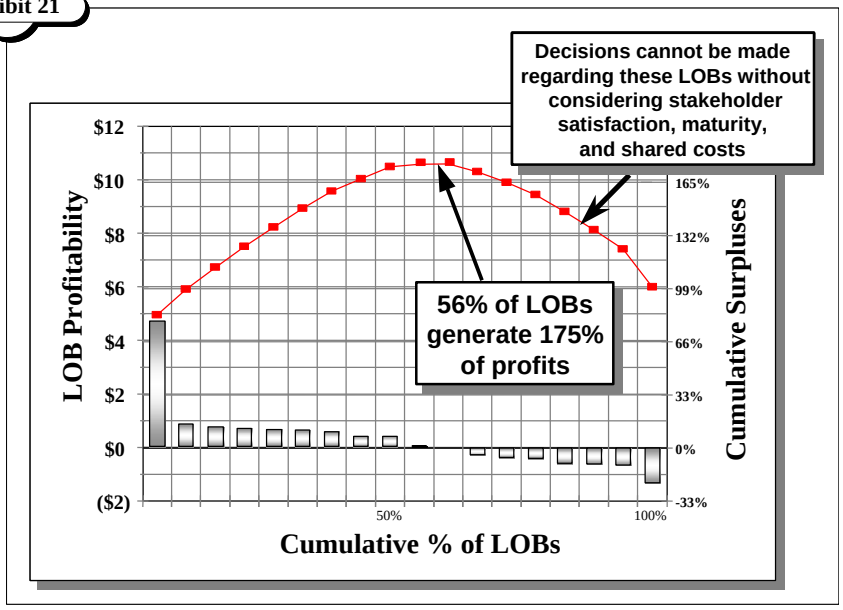


Exhibit 21



SUMMARY AND CONCLUSION

To meet competitive demands, management needs more powerful tools that will give them an advantage. The methodology described in this article is designed to meet that need by linking stakeholder value to the true costs of processes, activities, and lines of business providing a holistic and balanced evaluation of operational performance. Such a tool is designed to support a number of contemporary improvement initiatives such as the Balanced Scorecard (Kaplan & Norton, 1996), the Service Profit Chain (Heskett, Sasser, and Schlesinger, 1997), and other similar management frameworks. Most recently, Six Sigma and Lean management have gained significant attention and the methodology contained in this article will identify those activities that would best benefit from a Six Sigma and/or Lean initiative by optimizing rather than maximizing such improvement efforts. Such an analysis will generate improvements on its own, but will also enhance the return on investment made through other improvement initiatives.

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