

## CHAPTER 5

# Cost Reduction Analysis Procedures

***REDUCED COSTS = INCREASED CASH FLOW***

As making sales to the right customers, of the right products, at the right price, at the right time—which can be collected timely—can be a major contributor to positive cash flow, effective cost reduction can be an even greater contributor. While increased sales may add net profit margin contributions to positive cash flow, cost reductions add dollar-for-dollar contributions to positive cash flow. Hence, there is more to be contributed to positive cash flow by reducing and eliminating unnecessary costs, and the company has greater control over making this happen.

While sometimes all that is needed to reduce company costs is good common business sense, there are other management and operational techniques that have been used effectively in the past or are currently in vogue, such as:

- Total quality management (TQM)
- Participative management
- Benchmarking strategies
- Restructuring, reengineering, and reinventing
- Principle centered leadership
- Learning organizations
- Revision of mental models (and shifting of paradigms)
- Spirituality in the workplace
- Activity-based costing/management (ABC/ABM)
- Strategic, long-term, short-term, and detail planning
- Flexible budgeting
- Systems theory
- Complexity theory (complex adaptive systems)

Two techniques—benchmarking and activity-based costing—are presented as examples to illustrate how specific cost analysis and reduction methods can be effectively used to contain costs and thereby improve company cash flow. As we

have indicated, any process that helps reduce costs will result in an improvement in cash flow as long as it does not impair sales activity or customer relations or otherwise jeopardize the survival of the organization. Benchmarking and activity-based costing are well-accepted techniques to accomplish improved operations and reduced costs as well as to improve bases for pricing of products and services.

### **BENCHMARKING STRATEGIES**

Benchmarking identifies, implements, and maintains objective internal appraisal and external comparison and analysis. It is becoming the tool of choice for gathering data related to cost-reduction analysis, programs of continuous improvement, and to gain competitive advantage.

Benchmarking can be defined as a process for analyzing internal operations and activities to identify areas for cost reduction and process improvement in a program of continuous improvement. The process begins with an analysis of existing operations and activities, identifies areas for cost reduction and improvement, and then establishes a performance standard against which the activity can be measured. The goal is to improve each identified activity so that it can be the best possible—economically, efficiently, and effectively—and stay that way. The best practice is not always measured in terms of lowest costs, but may rather reflect what stakeholders value and expected levels of performance.

***BENCHMARKING PROVIDES TARGETS TO ATTAIN.***

### **The Concept of Stakeholders**

Benchmarking processes are directed toward the continuous pursuit of cost reduction and operational improvements, excellence in all activities, and the effective use of best practices. The focal point in achieving these goals is the customers—both internal and external—who establish performance expectations and are the ultimate judges of resultant quality. A company stakeholder is defined as anyone who has a stake or interest in the ongoing operations of the organization, or anyone who is affected by its results (type, quality, and timeliness). Stakeholders include all those who are dependent on the survival of the organization, such as:

- Customers/end users
- Owners/shareholders
- Suppliers/vendors/lenders
- Management/supervision
- Employees/subcontractors
- Special-interest groups (environmental, diversity, union, etc.)
- Government agencies, legislation, etc.

***BENCHMARK AGAINST STAKEHOLDER  
EXPECTATIONS.***

**Strategic Concepts**

Benchmarking results provide the company—owners, management, and employees—with data necessary for effective resource allocation and the strategic focus for the organization. The benchmarking process provides for those objective measures to determine the success of the company's internal goals, objectives, and detail plans, as well as external and competitive performance measures. Benchmarking the company's performance against stakeholder expectations enables the company to pursue its program of continuous improvement and the road to excellence. Effective benchmarking encompasses both internal and external needs. Some examples of internal and external benchmarks for the organization include the following:

- Increased sales: in total, by product line, and by product
- Earnings per share
- Total assets
- Return on investment
- Return on assets
- Gross profits
- Net profits
- Debt/equity ratio
- Stock price
- Dividends
- Cash flow changes
- Survival and growth
- Internal excellence (positive changes)
- Competitive excellence: quality, timely, cost, responsive
- Supplier excellence: preferred vendors
- Employer excellence: employee participation, empowerment, and so on

Whereas owners may be most concerned with short-term benchmarking criteria such as stock market price and earnings per share, other stakeholders may be more concerned with longer-term criteria such as real earnings growth, customer satisfaction, and ongoing positive cash flow. There should be a meaningful balance between such short-term and long-term goals of diverse stakeholders for the benchmarking process to be most successful. Benchmarks for organizational growth include the following:

- Cost reductions: short-term pain for long-term gain
- Price increases: may create more competition

- Sales volume increases: present and potential customers
- New market expansion: local, national, international
- New distribution channels: OEM, wholesale, retail, mail order, Internet, customer calls
- Market share increase in existing markets
- Sale or closing of a losing operation/location
- Acquisition of another company, division, operation, product
- New product/service development
- Efficiency/productivity improvements: achieve more with less
- Elimination of non-value-added activities

***COMPARE WHAT IS WITH WHAT SHOULD BE.***

### **Types of Benchmarking**

#### *Internal Benchmarking*

Internal benchmarking includes analysis of existing practices within various operating areas of the company—to identify activities and drivers and best performance. Drivers are the causes of work or triggers (for example, a customer order) that set in motion a series of activities. Internal benchmarking focuses on looking internally before looking externally. Significant improvements can be made as the company asks questions such as:

- Is that activity needed?
- Why do we do that?
- Is that position/material really needed?
- Can the activity be done better in another manner?
- Is that step necessary? Does it provide added value?

Internal benchmarking is the technique used to identify and implement operational cost reductions because it provides the framework to compare internal practices within the company as well as to external best practice benchmark data.

#### *External Benchmarking*

External benchmarking is used to compare the company's operations with those of other organizations, particularly in developing cost reduction and positive cash flow recommendations, and includes the following types of benchmarking:

- *Competitive benchmarking.* Looks to the outside to identify how other direct competitors are performing. Competitive benchmarking identifies the strengths and weaknesses of the company's competitors and is helpful in

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determining its own successful competitive strategy. It can also help to prioritize specific areas for improvement such as customer service, operating efficiencies, cost data, performance results, and so on.

- *Industry benchmarking.* Extending beyond the typical one-to-one comparison of competitive benchmarking, industry benchmarking attempts to identify trends, innovations, and new ideas within the entire industry. Such identification can help to establish better performance criteria, but may not lead to competitive breakthroughs, since others in the industry may be going through the same benchmarking process.
- *Best-in-class benchmarking.* Looks across multiple industries to identify new, innovative practices, regardless of their source. This search for best practices should be the ultimate goal of the benchmarking process. It supports continuous improvement, increased performance levels, and movement toward best practices, and identifies opportunities for improvements in all areas of company operations.

### ***FIND AND EMULATE THE PREMIER PRACTITIONER.***

#### **Internal Benchmarking Comparisons**

In performing an internal benchmarking study as part of a cash management cost-reduction analysis, there are a number of bases on which to compare to present practices, such as:

- Comparisons between individuals performing similar functions within the same work unit
- Comparative analysis between different work units within the company that perform similar functions
- Comparisons to industry standards
- Comparisons to published benchmark standards
- Comparisons to tests of reasonableness

In analyzing present conditions, the company must be aware of what conditions are expected to meet organizational goals and objectives. In determining the proper benchmark for comparison to a specific activity, the company can review such areas as relevant legislation and laws, existing contracts, policy statements, systems and procedures, internal and external regulations, responsibility and authority relationships, standards, schedules, plans and budgets, principles of good management and administration, and so on. In determining the correct

benchmark for a specific function, the company should answer the following questions concerning the activity:

- What should the function be?
- What is it measured against?
- What is the standard procedure or practice?
- Is it a formal procedure or an informal practice?

This results in comparing what is to what should be—the benchmark. In evaluating operating practices, one should be aware that procedures are formal methods of doing things, usually documented in writing and prescribed by management. Practices are the actual way that work activities are performed and are rarely documented in written form. Questions that should be asked by the analysis team include the following:

- *People*
  - Who is involved? And why?
    - Number of people
    - Number of positions
    - How organized and managed
    - Current personnel resource demands
  - Are all personnel needed?
    - Reasons for involvement
    - What are they doing?
    - Value or non-value added
    - Vital operation or task
    - Special expertise
  - Who has responsibility for outcomes?
    - Hierarchical pyramid: power and control
    - Management oriented: review and redo
    - Employee self-motivated disciplined behavior
      - ...Delegation of authority to lowest operational levels
      - ...Empire building: work continues but reason no longer valid
- *Procedures*
  - Why task is performed? (e.g., “It’s always been done this way”)
  - Necessary or unnecessary? (e.g., “That’s the way we do it”)
  - Adding value to customer? (internal versus external viewpoint)
  - Unnecessary bureaucracy? (e.g., unwieldy hierarchy)
  - Ineffective, inefficient, or redundant procedures?
  - What does each of the people do and why do they do it? (foundation for internal improvements)
  - What are the bundles or groups of value and non-value-added procedures and activities?

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The benefits of using internal benchmarking comparisons and identification of best practices include the following:

- Defines existing processes and activities—establishes baseline of acceptable performance (helps to trigger continuous improvement efforts)
- Identifies gaps in performance in similar internal processes (provides a clear picture of the organization's problems)
- Brings all internal operations up to the highest possible level of performance (within existing constraints)
- Recognizes areas of internal operational improvements without going outside the organization
- Establishes standards for common practices and procedures (overcomes the "Not created here" syndrome)
- Opens up communication lines within the organization (focuses resources on problems that affect more than one area).
- Institutes organization-wide commitment to internal benchmarking concepts (recasts the problems facing the company)
- Builds groundwork for external benchmarking (competitive, industry, and best-in-class) efforts (ensures greater results when external benchmarking is done)
- Prioritizes critical areas for benchmarking opportunities
- Identifies and classifies the key performance drivers

### Internal Benchmarks

Examples of internal benchmarks that can be used for such comparison purposes include the following:

- *Internal to the organization*
  - Organizational policy statements
  - Legislation, laws, and regulations
  - Contractual arrangements
  - Funding arrangements
  - Organizational and departmental plans: goals and objectives
  - Budgets, schedules, and detail plans
- *Developed by the Internal Benchmarking Team*
  - Internal performance statistics: by individual or work unit
  - Performance of similar organizations
  - Industry or functionally related statistics
  - Past and present performance
  - Engineered standards
  - Special analysis or studies
  - Benchmarking team's judgment

- Sound business practices
- Good common business sense

Examples of internal benchmarking performance measures are shown in Exhibit 5.1; quantitative benchmarks are shown in Exhibit 5.2; qualitative benchmarks are shown in Exhibit 5.3; and sample benchmarking measures by function are shown in Exhibit 5.4.

### Organizational Structure and the Role of Management

Theoretically, organizations are put together so that the entity can conduct its business more efficiently, and so that the owners and/or top management can multiply their effectiveness—that is, maximize their desired results. Organizing is intended to be a helping process to enable a company to conduct its business better. However, for many organizations it has become a costly obstructionist process. As part of its cost reduction analysis, the company must ascertain whether it is properly organized or whether improper organization is the cause of its problems and a causal factor in excessive costs.

- Organizational environment
- Company policy
- Management and employee skills and abilities
- Market constraints (e.g., price, quality)
- Product constraints (e.g., labor/material intensive)
- Technology (e.g., high, low, innovative)
- Organizational structure
- Management philosophy
- Organizational culture
- Type of structure
- Single product/diversified
- Locations/number of facilities
- Upward/downward/horizontal communication patterns
- Control elements (e.g., strong central versus delegated)
- Job and behavioral expectations
- Imbedded value system
- Evaluation and reward systems
- Performance related
- Hiring, orientation, training, evaluation, and promotion practices and criteria
- Turnover or lack thereof
- Delegation of authority and responsibilities
- Unwieldy organizational hierarchy
- Overlaps of responsibility and job functions
- Emphasis on economy, efficiency, and effectiveness
- Quality and use of information systems

**Exhibit 5.1** Examples of Performance Measures

**Benchmarking Strategies****131****Productivity:**

- Productivity/number of employees
- Cost per good unit produced
- Total productivity/total cost
- Orders processed per hour by employee
- Orders shipped per hour by employee
- Increase/decrease in inventory by item
- Inventory turnover ratios

**Quality:**

- Number of good pieces/scrap
- Amount and cost of rework
- Amount and cost of quality inspection
- Amount of vendor rejects
- Number of customer returns/complaints
- Warranty claims
- Returns and allowances
- Good units produced/material in
- Parts availability
- On-time deliveries
- Sales forecast accuracy

**Timeliness:**

- On-time deliveries
- Design time: customer to finished design
- Production lead time
- Purchasing to vendor delivery time
- Shipping time
- Number of late orders
- Number of late deliveries
- Number of back orders
- Set-ups: number and time
- Inspections: number and time
- Non-productive time
- Order processing time

**Accounting:**

- Number of items: invoices, payments, payroll time cards
- Number bills at time of shipment
- Number of payments within terms
- Accuracy of processing
- Number of accounts payable debits
- Number of accounts receivable credits
- Employee productivity statistics
- Timeliness and accuracy of reporting

**Exhibit 5.2** Quantitative Benchmarks

**Product/Service:**

- Number of products/services
- Number of activities/moves
- Number of total parts/activities
- Number of options
- Number of products/services produced: by unit, equipment, location
- Number of stockouts
- Amount of delays/time promised changes

**Facilities/Capacity:**

- Number of work units
- Number of personnel
- Number and location of bottlenecks
- Number of changes
- Amount of preventive maintenance
- Number of quality control inspections

**Customer Satisfaction:**

- Amount of repeat business
- Satisfaction: with what?
- Actual performance vs. promises
- Referrals to others
- Perceptions: quality, price, ease of use, features

**Marketing/Sales:**

- Number of salespeople
- Amount of marketing effort
- Increases in sales: number, profits, by customer, by salesperson
- Customer support provided
- Amount of flexibility
- Product success rates
- Sales to existing customers
- Number and sales to new customers

**Processing:**

- Time to process an order
- Number of contacts per order filled
- Number of errors
- Time to get order into production
- Time to process shipping
- Time to process billing
- Collection statistics
- Number of orders in backlog
- Amount of backlog never realized

**Exhibit 5.3** Qualitative Benchmarks

**Benchmarking Strategies****133****Sales Forecasts:**

1. Forecast to Actual: Total, by Customer, by Salesperson, by Product
2. Forecast to Real Customer Orders
3. Forecast: This Year to Last Year
4. Forecast to Lost Orders
5. Customer Contacts: Number, Type, Results

**Sales Order Backlog:**

1. Sales Order to Production Order: Time Processed
2. Average Time in Backlog
3. Reduction in Backlog: Current, Compared to Past
4. Backlog Statistics: Conversion to Real Orders/Lost Orders

**Manufacturing Orders:**

1. Average Processing Time: Sales Order Receipt to MO
2. Timeliness into Production: Per Schedule, Production Ready
3. Timeliness Of Start: Materials On Time, Production Start
4. Movement through WIP: Timeliness, Queue Time, Move Time
5. Comparison to Standards: Material, Labor, Scrap, Rejects, Rework
6. Quality Control: Number of Inspections, Rejects
7. Receiving: Personnel, Time, Process
8. Shipping: Process, Timeliness, Method, Costs
9. Delivery: On Time, Customer Satisfaction, Returned Items

**Inventory:**

1. Raw Material: Amount JIT, Amount on Hand, Amount Decreased
2. WIP: Maximize Throughput, Schedule versus Actual, % JIT
3. Finished Goods: Completed On Time, Shipped Directly, Amount
4. Records: Physical to Records, Type of Data/Reporting
5. Statistics: Turnover, Obsolete, Inaccuracies

**Purchasing:**

1. Process Type: Direct, Purchase Orders, EDT, Blanket
2. Numbers: POs, Personnel, Vendors
3. Timeliness: PR to PO, PO to Vendor
4. Vendor Relations: Number, By Personnel, Negotiations
5. Vendor Statistics: Prices, Quality, Timeliness, Purchase Data
6. Expediting: Open Purchases, Time/Cost, Late Deliveries

**Engineering:**

1. Bill of Materials: Accuracy, Number of Changes
2. Specifications: Accuracy, Number of Specs
3. Timeliness: New Products, Change Orders
4. Costs: New Design, Change Orders, Maintenance

**Exhibit 5.4** Sample Benchmarking Measures by Function

**Billing, Accounts Receivable and Collections:**

1. Billings: Timeliness, Accuracy, Process, Cost
2. Method of Preparation: Manual, EDP, EDT
3. Billing Cycle Time: Prep/Mail/Receipt by customer
4. Personnel: Number, Time Per Bill, Staff versus Managers
5. Collections: Days Outstanding, Cost Per Dollar Collected
6. Bad Debts: To Sales, Amount
7. Cash Receipts: Process, Time to Deposit, Average Days
8. Credit: Process, Approvals, Over/Under Limits
9. Invoices Returned : Bad Addresses, Inaccuracies

**Accounts Payable:**

1. Process: Direct Pay, EDT, EDP, Manual
2. Payments: Number, Timeliness, Accuracy/Errors
3. Costs: Per Payment, Personnel, Distribution/Mailing
4. Payment Errors: Number, Costs
5. Discounts: Taken, Lost, Costs

**Payroll:**

1. Process: Method, Internal/External, Frequency, Distribution
2. Process Errors: Number, Type, Costs, Correction Methods
3. Employee Benefits: Number, Type, Costs
4. Reporting: Frequency, Media, Accuracy, Timeliness
5. Costs: Per Employee, Per Check

**Accounting/Financial:**

1. Reporting: Late Reports, Errors in Reports, Not Needed
2. Outside Auditors: Cost, Timeliness, Errors Found, Benefits
3. Errors: Process, Personnel, Costs to Correct
4. Data Entry Errors: Number/% By Application
5. Journal Entries: EDP, Manual, Number, Correcting Entries
6. Cost: Per General Ledger/Journal Entry Transaction

**Personnel:**

1. Organization: Number of Personnel, Functions
2. Costs: Departmental, Per Employee, Per Function
3. Processing: In House/Outside, Level Of Inclusion
4. Result Statistics: Hires, Training, Orientation, Discharges
5. Employee Benefits: Type/Number, Administration

**Exhibit 5.4** Sample Benchmarking Measures by Function (continued)

Adequate organizational control requires that all employees know clearly what their roles and functions are in the organization, and exactly what authority and responsibility have been assigned. It also requires proper separation of duties

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so that the same individuals are not charged with responsibility for performing a task and reporting on how it has been accomplished.

***IT'S SOMETIMES EASIER TO SHUFFLE PEOPLE  
THAN TO DO THE RIGHT THING.***

Those who have ever been managers know that it is usually easier to just do a task than spend the time necessary to make sure the person to whom they have assigned the task has done it correctly. The main reason for having people reporting to a manager is to more effectively accomplish the organization's mission, goals, and objectives. In many instances, however, it is the organization itself, not the accomplishment of results, that has become the reason for being. Organizing, reorganizing, and implementing the latest organizational panaceas (such as total quality management and benchmarking) become their goals—as if the structure of the organization were causing the problems. Many times, the type of organization is not the cause of the problem; it is just easier to shuffle people around than to do the right thing.

So why do organizations in the private and public sectors place so much emphasis on the organizational structure of their operations? The answer, often, is that this is how it has always been. The thought is that if people were not required to report to others, they would not know what to do—and how could they be trusted to do their jobs without someone else to watch them? A frequent practice is to departmentalize people without requiring individual responsibility. Many times, the real problem is ineffective top management—and rather than admit to that, management consultants are called in to do what management should have been doing in the first place.

The real answer to why organizations should organize is so that they can accomplish their desired results (be most effective) in the most economical manner (with optimum use of limited resources) using the best available methods of operations (being most efficient). Theoretically, the organizational structure and management's goals should be the same, and each should support the other in the efforts toward making the organization successful. That this has not happened is evident by what is occurring in many organizations, both large and small today: downsizing, reengineering, layoffs, cost cutting, total quality management, and its ilk. Rather than using one of these new management miracles, hoping for quick, short-term fixes that often result in longer-term problems, it may be time to go back to organizational basics whereby all those working for the organization take responsibility for their part of the organization's successes or failures.

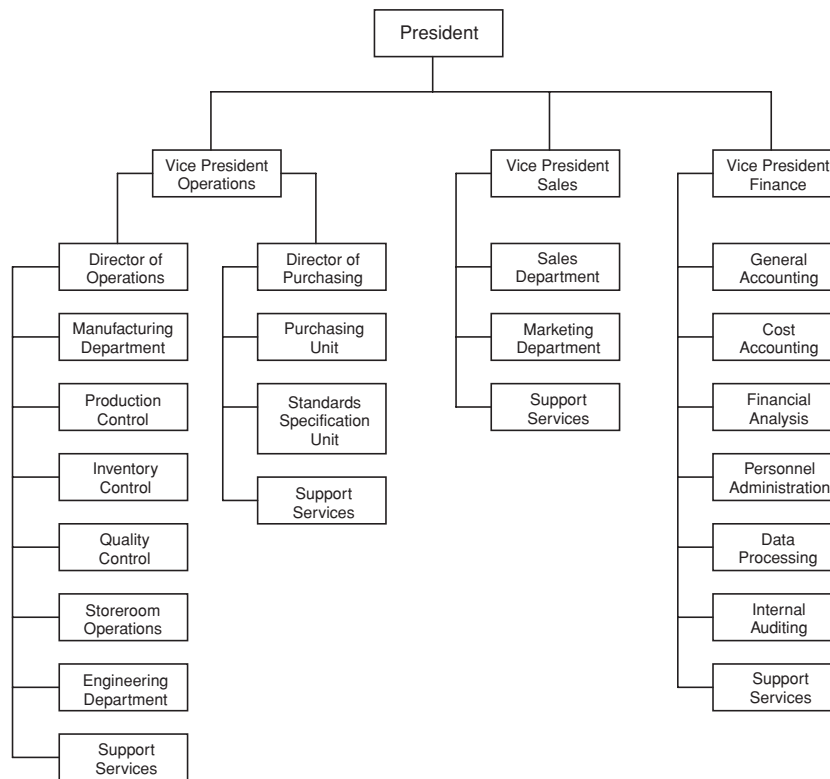
The organizational structure is the tool that is supposed to enable the organization to conduct its business in the desired manner. The purpose of both management and the organizational structure is the same, namely, to use the limited resources entrusted to them to accomplish agreed-upon results using the most

efficient methods of operation available. If a business used this principle when it put organizations together and made managers and other employees accountable for their results, it would have avoided many of the present pitfalls of unwieldy organizational structures.

***ASK HOW THE ORGANIZATION ORGANIZES TO ACHIEVE RESULTS.***

*Organizational Structure Examples*

Exhibit 5.5 depicts a representative top-level organization chart, graphically showing the reporting relationships from the president down through departmental levels. This typical structure would fit many organizations. It is based on a hierarchical pyramid concept in which the ultimate power starts at the top and is delegated down through the pyramid. Its purpose was command and control—maintain control within the organization through a chain of command, demanding obedience from each level of the organization that reported to a higher level.



**Exhibit 5.5** Top-Level Organization Chart

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To this day, many business organizations still function in this manner, with the purpose for the organizational hierarchy being to police and control those reporting to them to make sure they do their jobs.

The structure is also set up with the intrinsic message that those in a higher position on the chart know more. Hence, much of their time is spent on reviewing the work of those under them and then having those under them redo it so it looks more like what the manager would do. If these policing and control, review and redo processes exist, that makes many supervisors and managers superfluous (non-value-added) organizational overhead, and often more hindrance than help. If these non-value-added processes are eliminated, management is strictly limited to necessities, and the organization creates an atmosphere that encourages the motivation of self-disciplined employee behavior. Then many of these layers of unnecessary organization and costs could be eliminated.

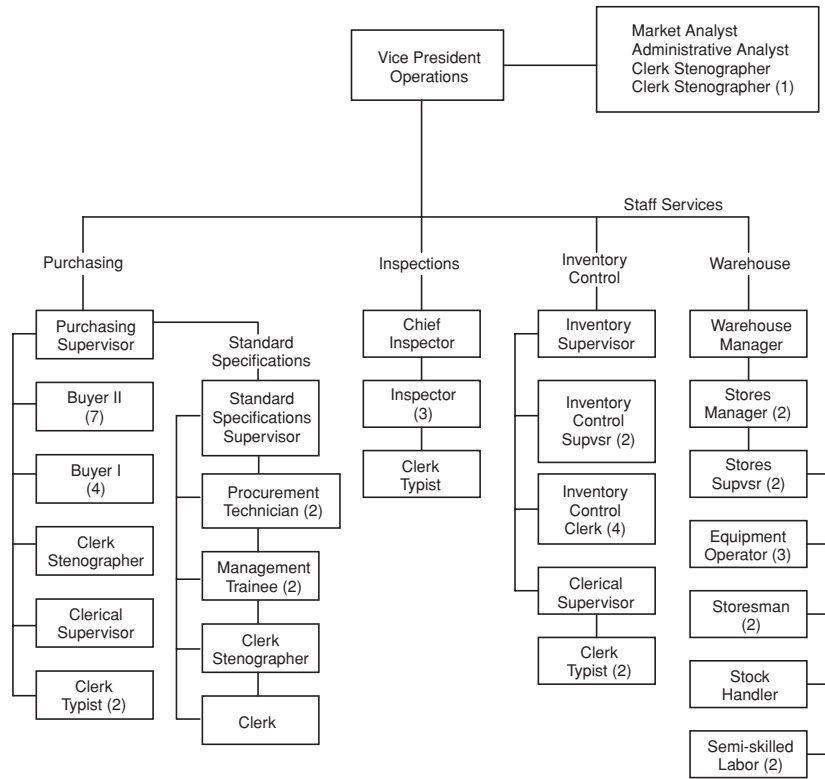
A look at Exhibit 5.5 may raise many questions and reveal areas for review related to making this organization more effective and efficient and, as a result, more economical. The following are areas that may be considered:

- The need for vice-presidents and their real functions
- Directors' level and their purposes
- The number of functions reporting to the vice president of operations and the related control structure
- The number of department levels and breakdowns in the manufacturing and finance areas
- Which departments or units are necessary, could be combined, could be eliminated, could be provided more economically in another manner, and so on
- Reporting relationships throughout the organization, such as between the president and vice presidents, the vice presidents and directors/department heads, and so on
- The degree of value-added management/supervision, as opposed to policing and control, review and redo procedures
- The ability of personnel in general to perform their functions in a motivated self-disciplined mode without the need for close supervision or management
- The purpose of support services for each branch and their related functions

Exhibit 5.6 shows a further breakdown of the functional areas reporting to the vice president of operations.

A review of this organizational chart, with particular attention to the purchasing function, reveals some areas for further review, such as:

- Why does the purchasing department report to the vice president of operations?



**Exhibit 5.6** Further Breakdown of the Functional Areas Reporting to the Vice President of Operations

- What are the functions, responsibilities, and authority of staff functions such as market analyst and administrative analyst?
- Why are two clerk stenographers reporting directly to the vice president of operations? What do they do?
- What is the function and authority of the purchasing supervisor? (Note: This position was listed as Director of Purchasing on the top-level organization chart).
- What are the buyers' functions and how are they used within the purchasing department?
- What is the difference between a Buyer II and a Buyer I?
- Are all the buyers necessary based on division of the workload?
- What is the function of the clerk stenographer and how does it differ from those of the clerical supervisor and clerk typists?
- What does the clerical supervisor do, and is supervision of the two clerk typists necessary?
- What are the functions of the two clerk typists, and is the workload appropriate?

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- What is the function of the Standards Specifications Unit? Is it needed to this extent or at all? Can its functions be eliminated or outsourced?
- Is the personnel complement within the Standards Specifications Unit appropriate to the present work required?
- What are the specific functions of the Standards Specifications Unit personnel, and are they necessary?
- Should other units such as Inspections, Inventory Control, and Warehouse be reporting to the same individual, vice president of operations, as the Purchasing function? To what extent are these functions necessary?

*Sample Planning Phase Organizational Work Program*

The following are work steps that may be considered in a cost reduction analysis with regard to the organizational structure for the organization represented in Exhibit 5.5 and 5.6:

1. Secure or prepare an organization chart with descriptions of each department's and work units' specific functions.
2. Determine formal and informal reporting relationships from top to bottom, bottom to top, and across functional lines.
3. Analyze actual operations to determine whether such reporting is proper in relation to how the organization actually functions and whether it results in operational concerns and problems.
4. Analyze each work unit's functions to determine whether they are appropriate.
5. Document the duties and responsibilities of each employee. Obtain copies of existing job descriptions or prepare them through the use of user provided data such as a Job Responsibility Questionnaire.
6. Interview the president, vice presidents, managers and supervisors, and each employee, to validate their functions.
7. Observe actual work being performed to determine the necessity of all duties and responsibilities.
8. Obtain or prepare company policies and procedures relating to each function under review.
9. Determine that authority and responsibility relationships are clearly defined and understood by all personnel.
10. Ascertain that all employees know their delegated authority and responsibilities; ensure that the responsibilities are proper for the function and do not overlap or duplicate another area.
11. Look for functions and individuals that either are not providing value-added services or are not being cost-effective. Examples may be isolates, dispatchers, controllers, unwieldy hierarchies typified by policing and control, and management/supervision that gets in the way.

12. Review hiring, orientation, training, evaluation, promotion, and lay-off/firing practices.
13. Question inefficient practices such as management policing and controlling, employee redoing, inappropriate following of policies, and so on.
14. Ascertain the level of self-motivated disciplined behavior.

### *Building Organizations*

There seems to be a trend toward empire building and the power and control that come with it. Even with the present movement toward downsizing, restructuring, reengineering, and so on, with emphasis on getting by with fewer people, those in power are trying to hold onto empires consisting of unnecessarily large numbers of people. Although they are quite agreeable about cutting the other guys' empires, there is considerable resistance when it comes to reducing the size of their own houses. In many instances, even with these quick and short-term remedies for staff reductions, there still remain individuals and layers of organizational hierarchy that are unnecessary (in part, or in total). It is really important to learn how to build organizations and maintain them properly at all times, using the correct techniques for the various situations.

Making employees responsible for meeting expectations and results, through motivating self-disciplined behavior and an effective monitoring system, eliminates the need for management and supervisory personnel that exist mainly to police and control individual employees. Use of operating systems that make sense to the employees who use them (who should have had input in developing these systems), within a cooperative atmosphere, will increase productivity to the extent that fewer employees overall are needed. The trick is to avoid adding unnecessary personnel as the organization grows, so that it is never in a position to have to cut back drastically. Often, individuals are penalized, being laid off for something beyond their control.

Many techniques for building an organization structure do not depend on the typical bottom-to-top military model, based on policing and controlling those reporting to each higher level, that is used by most organizations today. These include participative management, shared management, team management, self-motivated disciplined behavior (no manager), coaching and facilitative supports, and so on. There is no right answer for all situations—it is important to learn to use a combination of these techniques as they fit the particular situation. Emphasize controlling costs and results, not people.

### *Example of Organizational Cost Reductions*

#### **CONTAIN COSTS TO IMPROVE CASH FLOW.**

The following is an example of how analyzing organization and personnel and related costs can reduce and eliminate unnecessary functions, reduce costs,

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increase productivity, and contribute to positive cash flow. As part of the company's cost reduction analysis, the analysis team reviewed manufacturing operations and found inefficient manufacturing procedures, with diminished productivity, inventory out of control, production employees getting in each other's way, increased amount of rejected items and rework, more than 20 percent overtime for production workers, and an on-time delivery record of less than 40 percent. In addition, present manufacturing procedures result in excess personnel and inefficient methods, which cost the company more than \$1 million annually in unnecessary expenses. The analysis team estimates that the company can conservatively save more than \$900,000 in annual personnel costs alone as shown in Exhibit 5.7 by implementing more efficient operating procedures.

### Comparisons Among Individuals

***SET COMPENSATION NOT ON THE TIME PUT IN,  
BUT WHAT IS PUT INTO THE TIME.***

Comparing individuals performing similar functions (i.e., production workers, engineers, salespeople, accounting personnel, etc.) is not an exact science, as no two individuals' functions are exactly the same. However, the reviewer can identify better practices as to how to use one's expertise and ways of doing the job with others. An automatic transference of how one performs an activity to another is not usually accomplished easily. For instance, review the following case example of an internal benchmarking team working with a small manufacturer of specialty boxes.

At one time, the specialty box business was quite profitable, with gross profit margins of 43 percent. Now, however, competition and new, less costly methods had reduced gross profit margins to under 20 percent and falling. Still not too shabby, but cause for alarm. The owners had asked the team to benchmark their productivity in both manufacturing and the office areas. They had increased sales to a level they believed was practical for their capabilities and had cut costs where they felt they could. Now, they believed they had to increase productivity in all areas to reduce unit costs, negotiate sales prices more competitively, and increase resultant profits.

The team reviewed manufacturing operations and found that all processes had been automated to the extent practical. Those functions still requiring personal intervention were of a mechanical and measurable nature (e.g., storeroom operations, loading automated equipment, movement from one process to another, folding, packing, shipping, etc.). The company had a fairly well designed reporting system for these operations that told plant management productivity by employee and compared the results with those involving similar employees and an expected standard. The foreperson in each area was to analyze the reports the

Present Condition			Proposed Condition			Savings	
#	Position	\$	#	Position	\$	#	\$
1	VP-Production	\$ 74,000	1	Plant Manager	\$ 36,000	0	\$ 38,000
6	Forepersons	144,000	0	None	-0-	6	144,000
6	Team Leaders	132,000	3	Trainer/Coach	66,000	3	66,000
36	Production	576,000	28	Production	448,000	8	128,000
5	Repair/Maint.	120,000	1	Repair/Maint.	24,000	4	96,000
4	Packer/Shipper	52,000	4	Packer/Shipper	52,000	0	-0-
3	Receivers	30,000	1	Receiver	10,000	2	20,000
1	Inv. Cont. Mgr	18,000	1	Inv. Cont. Mgr.	18,000	0	-0-
1	QC Manager	26,000	0	None	-0-	1	26,000
6	QC Inspectors	132,000	4	QC Inspectors	88,000	2	44,000
2	QC Clerical	32,000	0	None	-0-	2	32,000
71		1,336,000	43		742,000	28	594,000
Overtime (Team Leaders & Production) @ 20%		141,600			-0-		141,600
		1,477,600			742,000		735,600
Fringe Benefits @ 32%		472,832			237,440		235,392
Totals		<u>\$ 1,950,432</u>			<u>\$ 979,440</u>		<u>\$ 970,992</u>

These estimated savings do not include the additional productivity to be gained through these recommendations, estimated to be at least 25 percent of present production levels.

**Exhibit 5.7** Schedule of Present and Proposed Personnel Costs

following morning and to take remedial action. Such action typically consisted of berating those employees who compared poorly with others and/or the standard. The reviewers noted minimal improvement (in fact, just the opposite) from this "management practice." The review team analyzed each employee's performance over a period of time (number of good items produced and number of rejects, rework, and returned items), which resulted in a pattern for each employee—that is, a narrow range of productivity for each employee and all employees working in similar functions. In other words, each employee and function had its own standard or level of production.

Interestingly, as each employee's productivity increased, the number of rejects also increased. The reviewers concluded that each employee had developed a narrow range of productivity within quality expectations, and that present reporting and management practices were not creating any improvements. Payroll analysis disclosed minimal differences among hourly rates. Compensation was based on seniority, regardless of the level of quality productivity. There was

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no incentive to improve productivity. In fact, the number of good units produced per dollar of payroll cost moved inversely with the number of years employed. In other words, the newer, less costly employees were more productive per dollar of wages than the older employees.

A review of office functions disclosed that there were no productivity expectations, no controls over or reporting of results, and no effective means of evaluation. In analyzing specific areas (e.g., purchasing, customer service, personnel, engineering, accounting, data processing, etc.), the team found them all overstaffed. There was no way to determine results, relative productivity, or what it was costing the company. The analysis also disclosed that the younger and/or newer hires were doing the bulk of the work, while the older, “more experienced” higher-paid employees were doing the least they could get away with. Much of their time was spent talking to each other and watching the newer employees work.

It was apparent that present procedures were not working. There was no real incentive for increasing productivity in either the plant or the office—actually the opposite. Compensation was based more on time put in with the company than on what was put into the time. It was apparent that a system had to be implemented that would better correlate productivity with compensation. The first step was to install procedures to ensure that all employees knew exactly what was expected of them and the results to be achieved. The next step was to determine the present competencies of each employee and the related levels of quality productivity. No one can make a .300 hitter out of a .225 hitter through hope and desire—one has to start with present capabilities and then work on fundamentals.

It was then necessary to develop a method of compensation that rewarded employees based on results achieved, and that would be equitable to all. To make this point, the reviewers selected three employees with differing levels of present productivity and compensation, as follows:

	<i>Productivity</i>	<i>Rate of Pay</i>
Employee A	8 units per hour	\$ 12/hour
Employee B	10 units per hour	\$ 10/hour
Employee C	12 units per hour	\$ 8/hour

Members of management were asked to rank these employees based only on levels of productivity, and they, of course, put them in A, B, C order. When they were told that the order, in reality, was just the opposite, they would not believe it until the actual data were disclosed. They all nodded and said in unison “that must be the plant, we know we have trouble there.” When they were told that, no, these were not plant personnel but customer service employees, and that the plant numbers were even worse, they became silent. Finally the chief financial officer (CFO) asked what could be done about this. A three-step plan was recommended, which included expectations, competencies, and compensation.

Quality expectations were developed for each function in the company, and related compensation was established, based on the level of productivity achieved (for example, 8 units = \$8/hour, 10 units = \$10/hour, 12 units = \$12/hour, etc.). Each employee was thus compensated based on results achieved, not on seniority. If the owners wanted to give additional compensation for years in, it was suggested that this be done separately from results compensation.

The next step was to look at each employee's competencies and determine how to make them more productive and better compensated. It was agreed that the lowest present level of productivity in each function was acceptable, but only for a commensurate level of compensation. If an employee wanted to earn additional compensation, productivity would have to be increased. It was understood that the employees would not be able to do this on their own or under the present system of control, reporting, and management. Twelve forepersons and supervisors/managers were replaced with four coaches, whose job was to help each employee continually improve. As they improved and productivity increased, the employees would be compensated at the higher level of productivity. As overall profits increased and management calculated the results of increased productivity, additional compensation would be shared with all employees. Under this system, a number of improvements were accomplished:

- Making all employees entrepreneurs (i.e., in business for themselves) responsible for their own level of compensation
- Fostering cooperation (and eliminating competition) among employees, as it now became beneficial for all to increase productivity and resultant profits
- Creating an atmosphere of self-disciplined behavior, characterized by individual responsibility, working together, and self-learning
- Eliminating many so-called foreperson and management personnel with the use of a few coaches to create a program of continuous improvement and productivity rather than stagnation and unnecessary costs
- Removing costly compensation practices with an inverse relationship to results achieved
- Reducing overall personnel, as levels of staff now became related to productivity levels in direct areas as well as management
- Using older, experienced personnel (where productivity levels could no longer be maintained) as coaches/facilitators so that their experience would be effectively used

#### Alternative Criteria

In many cases, internal benchmarks may not be available, and must be developed. In the absence of existing internal standards or benchmarking criteria with which

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to evaluate performance, three alternative approaches are available to the reviewer:

1. Comparative analysis
2. Use of borrowed statistics
3. Test of reasonableness

### Comparative Analysis

***PICK THE BEST PERFORMANCE  
AND MAKE IT THE STANDARD.***

Comparative analysis is a technique that can be used, where specific internal standards do not exist for comparison, to compare the reviewed activities to similar situations within the company. This analysis can be accomplished in two ways:

1. Current performance can be compared to past performance.
2. Performance can be compared with that of another similar work unit within the organization.

Comparing current with past periods has the advantage of possibly disclosing trends in performance. For example, if the cost for an employee procedures manual rises from year to year, one may question whether (1) costs have risen, (2) inefficiencies in manual preparation have increased, (3) employees are being given larger quantities, or (4) a better and more expensive quality of material is being used. The situation can then be analyzed further to determine exactly why the cost per manual has increased.

In this example, the criteria by which actual performance is evaluated are not part of a predetermined plan or a formal set of performance standards, but are simply those practices that were followed in prior years. Using such comparisons does not provide sufficient data to tell whether the rise in procedures manual cost per employee is good or bad, or whether costs are too high. This method does, however, identify the causes so that management can judge performance as it occurred. Although trends are possible to note and examine by this method, meaningful comparisons of alternative methods or procedures cannot usually be accomplished.

The comparison of two separate but similar work units normally provides the opportunity to evaluate different approaches to operations management. By determining the results of different operational approaches, the reviewer can make some helpful recommendations for improving efficiency and effectiveness.

There are, however, some disadvantages in comparing two separate but similar work units. The major disadvantage is the failure to recognize factors that justify differences between the two units. For example, it is difficult to compare manufacturing locations, as no two facilities will have exactly the same type of manufacturing systems, hire the same type of employees, use the same type of equipment, or have the same proximity to materials and other essentials. The two manufacturing locations would, however, have many of the same types of problems regardless of their differences. The similarity of problems enables the reviewer to analyze how each location's management group handles these common problems. The reviewer can then analyze such alternatives for improving the efficiency and effectiveness of operations, and resultant recommendations can reflect the review team's judgment based on the results produced by each alternative.

#### *Use of Borrowed Statistics*

Many groups and organizations throughout the country, such as manufacturers, hospitals, and banking associations, provide uniform and comparable industry and benchmark standards for evaluating performance. In addition, many professional associations and journals publish benchmarking results and standards on an ongoing or periodic basis. These borrowed standards can then be used to compare performance of organizations in similar endeavors. Although such comparisons make performance evaluation quicker and easier, there are some disadvantages to this procedure as well.

One disadvantage is that national averages and broad-based statistics hardly ever relate to specific situations. Although such statistics provide some indications of an organization's performance, they cannot be used for precise measurement or evaluation. Another disadvantage is that very few national averages or uniform statistics actually exist. In those cases where such statistics do exist, such as by standard industry code, for hospitals, banks, service industries, schools, libraries, and so forth, they either relate to only a small portion of the areas subject to review or are limited to very restricted areas, and are of limited use.

#### *The Test of Reasonableness*

***REASONABLENESS CAN BE  
A LEGITIMATE STANDARD.***

When there are no internal standards and comparisons with other organizations are impossible, or borrowed benchmarks are unavailable, the reviewer can still test organizational performance by a benchmark based on the test of reasonableness. Through experience, members of the review team may have become familiar with how things are done economically, efficiently, and effectively in other organizations. The review team should then be able to relate these experiences to the current functions included in the operational review and internal benchmarking study.

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Accordingly, the operational review team can often spot operational irregularities and weaknesses that may escape the notice of others without such a background. In an operational review internal benchmarking study, perceptions of a situation are based on the cumulative experience of the internal review team. In addition, there exist what may be termed "general standards of society" that apply to good management in any field, public or private. For example, reviewers can often spot work being done in a loose, unsatisfactory, and inefficient manner, even without specific standards or benchmarks. Many times, this work has been considered acceptable—"That's the way we've always done it."

Obsolete inventory, excessive supplies, personnel who are continually absent from work, abuse in the use of resources such as automobiles and expense accounts, or negligence in processing documents or handling cash funds are examples of items that can be evaluated through the test of reasonableness. The reasonableness test is also an appropriate tool for quickly reviewing operating areas not subjected to detailed analysis. Even where the operational review team has analyzed in detail, the reviewers should still examine their conclusions for reasonableness. This ensures that the team has not become so engrossed in statistics that they have overlooked important items or placed too much weight on minor ones. The test of reasonableness can also be viewed as application of good common sense or prudent business practice to the situation. Some indicators of internal benchmarking deficiencies are shown below.

- *Management and organization*
  - Poor planning and decision making
  - Too broad a span of control
  - Badly designed systems and procedures
  - Excessive crisis management
  - Poor channels of communication
  - Inadequate delegation of authority
  - Excessive organizational changes
- *Personnel relations*
  - Inadequate hiring, orientation, training, evaluation, and promotion procedures
  - Lack of clearly communicated job expectations
  - Idle, excessive, or not enough personnel
  - Poor employee morale
  - Excessive overtime and/or absenteeism
  - Unclear responsibility/authority relationships
- *Manufacturing and operations*
  - Poor manufacturing methods
  - Inefficient plant layout
  - Excessive rework, scrap, or salvage

- Idle equipment and/or operations personnel
- Insufficient or excessive equipment
- Excessive production or operating costs
- Lack of effective production scheduling procedures
- Poor housekeeping
- Excessive, slow-moving, or obsolete inventory
  
- *Purchasing*
  - Not achieving best prices, timeliness, and quality
  - Favoritism to certain vendors
  - Lack of effective competitive bidding procedures
  - Not using most effective systems such as blanket purchase orders, traveling requisitions, telephone ordering, and so on
  - Excessive emergency purchases
  - Lack of a value analysis program
  - Purchasing unnecessarily expensive items
  - Unmet procurement schedules
  - Excessive returns to vendors
  
- *Financial indicators*
  - Poor profit/loss ratios
  - Poor return on investment
  - Unfavorable cost ratios
  - Unfavorable or unexplained cost/budget variances
  
- *Complaints*
  - Customers: bad products or poor service
  - Employees: grievances, gripes, or exit interview comments
  - Vendors: poor quality or untimely deliveries
  - Production: schedules not met, material not available, deliveries not on time, poor quality, and so on

**Internal Benchmarking Case Study**

A company being reviewed decided to earmark specific customers and related sales forecasts for its product line, XXX business, by salesperson. For the first quarter of such directed sales planning, the results for the three salespersons were as follows:

<i>Salesperson</i>	<i>Sales</i>		<i>Difference</i>	
	<i>Forecast</i>	<i>Actual</i>	<i>\$</i>	<i>%</i>
Brown	2,500	4,000	1,500	160%
Gray	3,500	3,200	(300)	91%
White	<u>4,000</u>	<u>3,600</u>	<u>(400)</u>	<u>90%</u>
TOTALS	10,000	10,800	800	108%

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<i>Salesperson</i>	<i>Number of Customers</i>	<i>Personal Contacts</i>	<i>Phone Calls</i>	<i>Memos Sent</i>
Brown	18	84	146	63
Gray	26	38	73	28
White	44	26	48	12

Suppose that a reviewer is conducting an internal benchmarking review of the sales function and is comparing sales results to efforts:

- What additional data would the reviewer gather?
- What factors would the reviewer consider for internal benchmarking?
- Are there any conclusions/inferences the reviewer can draw from the information available?

*Additional Data to Gather*

Sales data:

- Seniority of salespeople
  - Years with company: White 12 years, Gray 8 years, Brown 1 year
  - Age: White 54, Gray 46, Brown 27
  - Annual pay: White \$124,000, Gray \$88,000, Brown \$37,000
- List of customers and customer statistics/history
  - How long a customer
  - Sales history by product with trends
  - Salesperson assigned
  - New customer/lost customer history
- Salespeople history
  - Sales by customer history and trends
  - Sales efforts versus results
  - Forecast to actual sales history
  - New customer history
  - Lost customer history
- Sales forecast data
  - Sales forecast by customer/products versus actual
  - New customers not in forecast
  - Lost customers or sales in forecast
  - Amount of sales not materializing
  - Amount of sales not on forecast

Contacts data:

- Customer survey
  - Satisfaction with company, products, salespeople

- Relationship with assigned salesperson
- If sales have decreased, why, and are customers buying elsewhere?
- What would help them to buy more?
- Positive and negative experiences
- What the company does right—and wrong
- Competitor relationships and their advantages
- Type of contacts
  - *Effectiveness*. Personal contact, phone call, memos
  - *Relationship*. Contacts to salespeople (present and future)
  - Quality of contacts by salesperson
  - Contact procedures by each salesperson

#### *Factors for Benchmarking*

- *Process*. Sales contact procedures and follow-up
- *Timeliness*. How responsive is sales function to customer?
- *Quality*. Relationship with customer, products, sales follow-up
- *Cycle*. How often is customer contacted - pre sale, during sale, and after sale?
- Numbers
  - Contacts/sale
  - Sales forecast/actual sales
  - Sales/sales efforts
  - Sales cost/gross sale/net profit on sale

#### *Conclusions/Inferences*

- The greater the sales contacts/customer service, the greater possibility of increased sales.
- Sales forecasts have little basis in reality and are not related to real sales efforts or plans.
- The greater the seniority of the salesperson, the less sales efforts and fewer customer contacts.
- Sales compensation is based more on seniority than on efforts and results.
- Sales forecasts are based on historical sales and cannot be counted on to plan production based on real customer orders.
- There is little incentive for older sales personnel to fully service present customers and bring in new customers.

#### **External Benchmarking Targets**

As a result of the internal benchmarking work steps, the review team should identify other areas for external benchmarking including the identification of activity drivers and performance measures, such as those listed here:

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- Purchase requisitions
  - *Process.* Manual, computer, automatic by plan
  - *Control.* Work unit, department, automatic, computer
  - *Account coding.* Manual, employee, management, computer
  - *Number.* Company, department, unit, employee, type
  - *Budget check.* Automatic, computer, manual, preapproved
  - *Policy.* Purchasing, petty cash, direct cash system
  - *Practices.* Traveling requisitions, inventory automatic, direct purchase
- Purchase orders
  - *Process.* Manual, computer, automatic, electronic data transfer
  - *Number.* Location, department, unit, employee, vendor, type
  - *Open order control.* Employees, number, vendor, computer
  - *Approval.* Management, computer, automatic by plan
  - *Copies.* Number, manual, computer, electronic data media
  - *Value analysis.* Prices, quantities, needed or not, alternatives, vendors
  - *Form and distribution.* Number of copies, who to, filing, electronic media
  - *Costs.* To process, personnel, forms, expediting
  - *Vendor negotiations.* Blanket purchases, competitive analysis, vendor analysis
- Receiving procedures
  - *Number.* Receipts, partial receipts, employees
  - *Process.* Manual, computer, bar coding, automated update, direct
  - *Receiving inspection.* Process, rejects by vendor/number
  - *Delivery data.* On time by vendor, partial receipts
  - *Cost.* Employees, process, forms, per receipt
- Inventory update
  - *Process.* Manual, bar coding automatic, computer terminals
  - *Routing.* Direct production, inventory, holding area
  - *Integration.* With production, inventory/accounting records
  - *Levels.* Reorder Points/Economic Order Quantities (RP/EOQ), zero inventory, just-in-time (JIT) raw materials and finished goods
  - *Work-in-process.* JIT, process times, schedule integrity
- Accounts payable
  - *Process.* Vendor invoices, pay on receipt, electronic data transfer
  - *Invoice receipt.* Mail, direct, computer, electronic data transfer
  - *Number.* Employees, open vouchers, payments, checks
  - *Payments.* Total, by vendor, by type of item
  - *Returns.* By vendor/number, process
  - *Discount policy.* Take all, ignore, negotiate in price
  - *Timeliness.* In/out discount terms, processing
  - *Practices.* Electronic data transfer, integrated receipt/payment, prepays

**ACTIVITY BASED COSTING PRINCIPLES*****ACTIVITY BASED COSTING IDENTIFIES OPPORTUNITIES FOR IMPROVED RESULTS.***

Activity based costing (ABC) is a cost accounting methodology for assigning costs of resources to cost objects based on operational activities. In an operational cash management study, such costing can then be used to make comparisons, identify critical areas for review, and develop recommendations for cost reductions and elimination so as to improve both profitability and cash flow. Using ABC methods, it is the activities, not the products or services (as in traditional cost accounting systems), that cause the costs. The ABC approach to cost accounting recognizes the causal relationship between cost drivers, resources, and activities. ABC defines a process, which could occur in the providing of a product or service or in production or the office, in terms of the activities performed, and then develops costs for these activities. ABC does not, contrary to traditional cost accounting techniques, develop costs by organizational cost centers but in terms of the activities performed. In addition, ABC assigns overhead based on the activities (cost drivers) that cause the overhead to occur, rather than allocating overhead via some arbitrary allocation base such as direct labor hours or dollars. As costs are developed, each activity is appraised as to its necessity and its extent. As activities are reduced or eliminated, their attendant costs are also reduced or eliminated driving these cost savings directly to the bottom line and to positive cash flow.

Many organizations are struggling with better methods for product/service costing and resultant pricing strategies, together with overall cost management, performance measurement, return on investment, and so on. In this context, ABC is only one of the tools for effective survival, competitiveness, and growth and prosperity that challenge organizations today in an ever-changing business environment. ABC methodologies, if implemented correctly, can be the central core that provides the elements of an effective organization-wide cost and cash management system that enables the company to identify opportunities for improvement and make recommendations to enhance positive cash flow.

A summary of Activity Based Costing objectives is shown in Exhibit 5.8, a summary of cost accounting decisions affecting positive cash flow is shown in Exhibit 5.9, a list of cost reduction targets is shown in Exhibit 5.10, and a list of areas for improving activities and cash flow is shown in Exhibit 5.11.

**Organizational Concerns**

ABC concepts have evolved greatly in a relatively short period of time. Originally conceived as a methodology for product cost improvement and accuracy, ABC is

**Activity Based Costing Principles**

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ABC Objective	Potential Impact on Cash Flow
Lower inventories (raw material, work-in-process, finished goods)	Conserve cash
Lower product costs (material, labor, and overhead)	Increase cash
Smaller manufacturing lots (just in time manufacturing)	No spending until needed
Build quality into the process rather than add it onto the process	Decrease quality control costs
Decreased lead times (on-time deliveries)	Compress cash conversion period
Increased productivity	Produce more at less cost
Improved customer satisfaction	Increase customer service business and additional quality sales
Identification of value-added cost elements	Reduction and elimination of non-value-added cost elements
Control costs of nonproduction related activities	Reduce or eliminate these

***EVERY DOLLAR SAVED IS A DOLLAR OF POSITIVE CASH FLOW.***

**Exhibit 5.8** ABC Cost System Objectives

- Manufacture versus purchase (make versus buy)
- Vendor selection (price, quality, timeliness)
- Single versus multiple sourcing
- Manufacturing in-house versus outsourcing
- Manufacture versus assembly
- Cost elements and product item costing
- Pricing strategies
- Capital expenditures (effective use of facilities)
- Production processes and use of personnel
- Product line analysis (what products to sell)
- Inventory levels (in-house versus vendors/distributors)
- Lot sizing (how much to produce)
- What businesses to be in (expand, status quo, curtail, or disband)

**Exhibit 5.9** Cost Accounting Decisions Affecting Positive Cash Flow

1. Labor—direct and indirect
2. Materials—direct and supplies
3. Processing time
4. Lead time
5. Paperwork
6. Set-up time—manufacturing and administration
7. Parts and supplies
8. Vendors
9. Queue time
10. Move time
11. Wait time
12. Cycle time—manufacturing and administration
13. Overuse and underuse of scarce resources
14. Scrap and obsolescence
15. Stockouts—manufacturing and administration
16. Customer complaints: quality, quantity, timeliness
17. Uneven production and delivery (i.e., 60 percent of orders shipped during the last week of the month)
18. Unplanned downtime
19. Excesses (i.e., raw material and finished goods inventory, work in process, supplies, equipment)
20. Not shipping or providing services
21. Employee surveys (i.e., anger and frustration)
22. Personnel levels (and related costs)
23. Processes/activities (value and non-value-added)
24. Duplications/nonintegration of functions
25. Unnecessary activities

***A DOLLAR OF COST SAVINGS IS A DOLLAR  
DIRECT TO THE BOTTOM LINE.***

**Exhibit 5.10** Cost Reduction Targets

now considered a comprehensive organization-wide performance measurement system supporting a wide range of purposes such as:

- *Strategic priorities.* Identifying, setting, and implementing; as well as developing of organizational, departmental, and detail plans, together with flexible budgeting procedures
- *Cost performance measurement.* Identifying cost-reduction opportunities, quality improvements, product/service design, process improvements, and so on

**Activity Based Costing Principles****155**

- Eliminate function/work step
- Eliminate duplication
- Combine functions/work steps
- Balance workloads
- Reduce/eliminate bottlenecks
- Improve process flow
- Improve work layout and flow
- Improve scheduling: work and personnel
- Eliminate causes of rejects and rework
- Strengthen education and training
- Increase use of coaching and facilitation
- Simplify work steps and processes
- Improve automation efforts and results
- Increase standardization—decrease customization
- Maintain schedules
- Practice good housekeeping
- Continuously improve
- Meet realistic targets
- Implement effective planning and budgeting systems
- Achieve flexibility: do the right thing
- Exercise performance measurement and continual review and analysis
- Take an operational perspective
- Implement the concept of economy, efficiency, and effectiveness

***ECONOMY, EFFICIENCY, AND EFFECTIVENESS  
(AND MAKING MONEY)  
IS EVERYONE'S BUSINESS.***

**Exhibit 5.11** Areas for Improving Activities and Cash Flow

- *Analyzing cost performance.* Identifying such things as material and labor (and other normal overhead type costs) economy and efficiency improvements
- *Continuous improvements.* Operating methods, use of facilities and equipment, productivity, use of personnel, vendor and customer relations, inefficiencies, waste elimination, and so on
- *Capital investment.* Using scarce resources in the most economical, efficient, and effective manner
- *Organizational management.* allowing management to operate and control the organization in the optimum cost-versus-benefit manner.

- *Cash management.* Identifying areas for cash conservation, reduction and elimination of unnecessary costs, development of pricing strategies that maximize bottom line contributions, and implementation of operational economies and efficiencies that result in effective use of resources

Activity Based Management (ABM) uses ABC system provided information to improve the management and operation of ongoing activities. The goal of ABM and ABC should be to increase the value of the products/services provided to customers and to increase company profits by providing higher quality/added value to customers at the lowest possible costs. ABM/ABC works toward improving critical organizational decisions in such areas as:

- Product design and mix (what to sell and provide)
- Pricing considerations (what to charge)
- Customer mix (whom to sell)
- Sourcing (vendors, in house/outsource, markets)
- Improvement priorities (on what areas to concentrate)
- Cash management (where to allocate scarce resources)

In this endeavor to improve the organization, customer service, and compress the cash conversion period through the implementation of best practices in a program of continuous improvement, ABM/ABC looks at the following areas:

- *Products/services.* What to offer, continue or discontinue, expand or contract, as well as cost-volume-profit (CVP) considerations, product/service break-even analysis, and product line analysis
- *Customers.* To whom and how to sell (present and potential), customer service considerations, profitability, customer statistics (sales, costs, and profits), and sales forecasts
- *Activities.* Those that bring value to the product/service, such as material, labor, and product related and those that offer support to the organization at additional cost but provide no value to the product/service (non-value-added), such as administration, support functions, and top management
- *Indicators of poor performance.* Operational measures that provide an indication that there is an area for improvement, such as scrap, vendor returns, customer returns, rework, and rejects

ABM and ABC concepts provide the methodology for measuring the success or failure of the company's cash management endeavors as well as other performance improvement programs such as Total Quality Management (TQM); Just In Time (JIT) concepts for purchasing, manufacturing, and customer deliveries; benchmarking; program of continuous improvements; and so on. These concepts also provide for more effective management and operational decision making. In conducting the cash management study, the company should consider the use of

**Activity Based Costing Principles****157**

- Customer complaints (returns, rejects, complaints)
- Idle inventory (raw material, work in process, finished goods)
- Late deliveries (vendors, customers)
- Change orders (purchasing, manufacturing, shipping)
- Processing (manufacturing, purchase, and sales orders)
- Recording (purchase requisitions, time cards, move tickets, etc.)
- Quality control (receiving, in process, final)
- Equipment (idle time, setups, maintenance, downtime)
- Production schedule changes (moves, wait time, lost time)
- Customer service (late, inadequate, nonresponsive)

***COST IS NOT ALWAYS MEASURED IN DOLLARS.***

**Exhibit 5.12 Nonfinancial Cost Measures**

any or all of these concepts as appropriate. The more concepts such as ABM and ABC that study team members are aware of as they analyze operations and related costs, the greater the results to be achieved. Since one of the major goals of the cash management study is to bring the company up to the optimum level of best practices in a program of continuous improvements, such knowledge of other concepts helps to ensure this will happen.

***THE ABM GOAL IS TO INCREASE VALUE TO CUSTOMERS AND PROFITS TO THE COMPANY.***

In conducting the cash management study, the company should be aware of the yardsticks, criteria, or benchmarks for best practices and improvements. A list of nonfinancial cost measures to consider in looking at ABM/ABC principles is shown in Exhibit 5.12. In addition, the company should be aware of the costs associated with not doing what is expected. A summary of the cost of such non-compliance elements associated with not doing what is expected is shown in Exhibit 5.13.

**Traditional versus ABC Cost Concepts**

***TRADITIONAL COST ACCOUNTING MAY CREATE MORE PROBLEMS THAN SOLUTIONS.***

The cost of noncompliance measures the dollars associated with not doing what is expected.

**Failure to Meet Established Standards**

- Time (setups, processing, turnaround)
- Cost (i.e., per purchase order, data entry, raw materials)

**Time Delays**

- Vendor deliveries
- Customer deliveries
- Work-in-process moves (to production schedule)

**Production/Service Delivery Deficiencies**

- Time commitments
- Quality
- Quantity

**Administrative Performance Shortcomings**

- Goals, objectives, and detail plans
- Sales forecasts/real customer orders
- Budget versus actual versus what it should be

**Schedule Misses**

- Selling requirements (when to sell)
- Development (i.e., product engineering)
- Production schedule
- Production control
- Shipping/delivery schedules
- Billing schedules

**Exhibit 5.13** Cost of Noncompliance Elements

Traditional cost accounting practices have resulted in confusing decision making and difficulty in identifying true cost elements. With their emphasis on financial measurement, traditional cost techniques have resulted in:

- Short-term thinking
- Ineffective problem identification and improvement
- Deemphasis on effective cost reduction
- Organization-wide versus product/service cost concepts
- Emphasis on external versus internal results
- Bottom line versus operational thinking
- Lack of identification of areas for improvement
- Quick fixes for cost cutting (labor and material)
- Ignoring internal areas of waste

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ABC systems, on the other hand, provide for the following features:

- A total cost system
- A program of continuous improvements
- Areas to eliminate waste and reduce costs
- Assignment to each product/service of its true share of activity costs (rather than using an overhead allocation formula)
- Focus on internal operations and results
- Areas for profit improvement
- Elimination of non-value-added activities or improvement of value-added activities
- Reduction or elimination of waste associated with a measured activity

Examples of factors that should be considered in defining the company's cost structure are shown in Exhibit 5.14.

## Traditional Cost Elements

The traditional cost accounting system looks at the following cost elements in determining product costs:

- Direct material
- Direct labor
- Overhead—allocation formula (e.g., 140 percent of direct labor)

Problems associated with using these traditional cost elements include:

- Product costs not reflecting actual costs
- Passing costs (excess costs and inefficiencies) onto the customer through selling price calculations (e.g., a percentage markup based on costs)
- Emphasis on external financials, not on internal costs (and operations) and ways of cost reduction
- Job of accounting: information for external financial reports versus information to improve and control internal operations
- Switch in cost structures: less labor, greater material, and more overhead to be allocated
- Excessive emphasis on direct labor
- Short-term results emphasized versus long-term profitability
- Cost and operating systems (i.e., manufacturing, sales, engineering) not integrated
- Lack of coordination between functions (e.g., sales, manufacturing, engineering, accounting)

<p>Products</p> <ul style="list-style-type: none"> <li>• Individual item</li> <li>• Product group</li> <li>• Product line</li> </ul> <p>Functions (distinct areas within an organization structure)</p> <ul style="list-style-type: none"> <li>• Departments</li> <li>• Cost centers</li> <li>• Responsibility centers</li> <li>• Profit centers</li> </ul> <p>Activities (within functions)</p> <ul style="list-style-type: none"> <li>• Manufacturing (i.e., product assembly)</li> <li>• Forms preparation and handling</li> <li>• Data entry</li> <li>• Maintenance</li> </ul> <p>Elements (types of costs generated by activities)</p> <ul style="list-style-type: none"> <li>• Direct labor</li> <li>• Direct material</li> <li>• Repairs and maintenance</li> <li>• Support work</li> </ul>
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Exhibit 5.14 Defining cost structures—representative factors

The traditional cost accounting system encompassing the cost elements of labor, material, and allocated overhead has remained constant in many organizations, whereas the makeup of these elements of product/service costs may have changed, as follows:

	<i>Past</i>	<i>Present</i>
Material	25–50%	30–60%
Labor	25–50%	5–20%
Overhead	25–50%	30–65%

Trends in most organizations show direct labor costs decreasing, direct material costs increasing, and overhead (indirect) costs, while not always fully known, increasing even more rapidly as a result of more control systems (quality control, inventory control, production control), scheduling (production scheduling, process scheduling), compliance (safety, affirmative action, environmental) and related advancements in manufacturing and service processes.

Using these cost elements (material, labor, and overhead), the reviewer might calculate product costs as follows:

**Activity Based Costing Principles**

*Product A—50 items*

	<i>Cost</i>	<i>%</i>
Direct material @ \$5 per item	\$ 250	36.7%
Direct labor: 15 hours @ \$12	180	26.4%
Overhead: 140% x direct labor cost	<u>252</u>	<u>36.9%</u>
Total Product Costs	<u>\$ 682</u>	<u>100.0%</u>
Cost per Item	<u>\$ 13.64</u>	

*Product B—10 items*

	<i>Cost</i>	<i>%</i>
Direct material @ \$53.80 per item	\$ 538	78.9%
Direct labor: 5 hours @ \$12	60	8.8%
Overhead: 140% x direct labor cost	<u>84</u>	<u>12.3%</u>
Total Product Costs	<u>\$ 682</u>	<u>100.0%</u>
Cost per Item	<u>\$ 68.20</u>	

Questions that may arise using traditional cost accounting techniques include:

- *Direct material.* Are these at the lowest possible costs, looking at activities such as purchasing, stocking, use, scrap, rework and rejects, and so on?
- *Direct labor.* Is it at the lowest possible level, looking at activities such as set-ups, processing times, productivity, use of engineering standards, and so on?
- *Overhead.* Is it accurate and at its lowest level, looking at activities and questions such as:
  - Amount of overhead being the same for both products (140 percent of direct labor)
  - Differences in number of items produced
  - Indirect costs associated with each product (e.g., purchasing, receiving, storing, issuing) not properly accounted for
  - What costs are lumped into overhead (value-added versus non-value-added)?
  - What is the cause and effect between cost and activities?
  - How are cost drivers identified and what is their impact on total product cost?
  - Why the emphasis on direct material and labor, with all other costs accounted for by an overhead allocation?
  - How can value-added cost elements be identified back to the product/service item?

### Cost and Process Views

ABC has two main views—cost assignment and process. The cost assignment view reflects the organization's need to trace or allocate resources to activities or cost objects (products as well as customers) to analyze critical decisions such as pricing, product mix, priority setting, and so on. The process view reflects the organization's need for information about events that influence the performance of activities—that is, what causes the work and how well is it done. Such performance feedback information is then used to improve operations and results.

### Cost Assignment View

Resources (the sources of costs) are economic elements that are applied to the performance of activities; which could include:

- Direct labor and material
- Support staff (e.g., salaries and fringe benefits)
- Indirect costs (e.g., facilities, heat, light, phone, electric)
- Administrative costs (e.g., computer operations, advertising, public relations)
- Selling and marketing costs

Resources flow to activities, which are processes or procedures that cause work to be performed. In a purchasing department, activities can include requisition processing, vendor negotiations, purchase order processing, open order control, expediting, and so on. Such related activities are typically considered to constitute an activity center (purchasing activities). Factors that are known as resource drivers are used to assign resource costs (for example, salaries) to activities (for example, purchase order processing). Each type of resource becomes a cost element (for example, amount of resource used by an activity) as part of an activity pool (total cost of an activity).

Each activity cost pool is traced to the cost objects by means of an activity driver, which is the measure of the use of the activity by the cost objects. The activity driver is used to assign resources from the activity to the cost system. Processing of purchase orders, for example, is traced to products based on the number of times the item is purchased.

The cost object, the final point to which cost is traced, is any activity, organizational unit, contract, or other work unit for which a separate measurement of cost is desired; it is the reason that work is performed and may be either a product/service or a customer. The cost traced to each product or customer reflects the cost of the activities used by that cost object. The company may use the same cost to record and report against a product, service, activity, function, level, customer, or some other basis as is appropriate in the situation—the user designs the system.

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### Process View

The process view (cost drivers, activities, and performance measures) provides information about the work accomplished in an activity and its relationship to other activities. A process can be viewed as a series of activities that work together to achieve a specific purpose (e.g., various manufacturing functions working together to produce a finished product). Internal activities can be considered as links to another activity—all working together to produce a result.

The process view of ABC provides information relative to cost drivers and performance measures for each activity in the network, which are primarily non-financial, that can be used to analyze and improve the performance of an activity and the entire process or function. Cost drivers are those events that cause a change in the total cost of an activity. Cost drivers determine the workload and effort required to perform an activity. They tell why (e.g., processing a manufacturing order in response to a prior event such as a customer order), and how much effort is required (e.g., 24 minutes) to perform the task.

***COST DRIVERS—EVENTS THAT CAUSE A CHANGE  
IN THE COST OF AN ACTIVITY.***

Performance measures are indicators—financial and non-financial—of the work performed and the results achieved in an activity. They tell how well the activity was performed and whether it is meeting the needs of its purpose. They can include measures of the efficiency of the activity, time to perform the activity, quality of the results, and so on.

### ABC Activities

ABC systems focus on the activities to be performed to produce products/services. Activity costs are assigned to products/services based on each item's use of those activities. For instance, in a typical organization, there may be the following levels of activities:

- *Unit level.* Performed each time a unit is produced (e.g., manufacturing operations, quality control)
- *Batch level.* Performed each time a batch of items is produced (e.g., set-ups, material handling)
- *Product level.* Performed to support the providing of each different type of product/service (e.g., product specifications, order handling)
- *Facility level.* Performed to support the facility's general purposes (e.g., utilities, security, cleaning, and maintenance). These costs are typically allocated to products/services based on someone's judgment.

Typically, ABC systems report costs per individual unit (e.g., full absorption product/service costs). Such unit costs are obtained by:

- Calculating unit-level costs
- Batch-level costs divided by number of units in each batch
- Product-level costs divided by the number of product items produced in all batches
- Facility-level costs divided by the number of total product items produced in the period
- Adding the results of the preceding items

It should be noted that the product ABC costs as calculated here will not equal product costs produced by traditional cost accounting systems. However, the ABC system costs will produce more accurate product/service costs because they more accurately identify what causes the cost to be incurred.

An example showing the calculation of total cost, unit cost, and selling price by product using traditional and ABC cost systems is shown in Exhibit 5.15.

Note that as unit costs are calculated differently (but more accurately) using ABC concepts, the calculations also affect the selling price. Accordingly, ABC cost systems can turn a loser into a winner and vice versa. For example, product A with a present unit cost of \$10.50 and a selling price of \$15.00 when recalculated using ABC concepts shows a unit cost of \$30.65. Using this more accurate unit cost, it is evident that the company cannot sell this product for \$15.00 and make money. Management, confronted with the ABC data, must now decide what to do about this product—stop selling it, greatly reduce costs, raise the price, continue to sell it at a loss, or some other action.

Under ABC system concepts, where overhead activities and their related costs are assigned to the product based on usage of the activity, true product costs are calculated more accurately. A sample bill of activities used to assign such overhead activity costs to product A is shown in Exhibit 5.16. Note that when using such data in the cash management study, the study team also focuses on these activities as to whether each one is needed or can be eliminated, reduced, or made more efficient. For example, if the company can eliminate the necessity for the preparation of purchase orders, it also eliminates the total cost of \$320, which goes directly to the bottom line. In addition, the study team would analyze the remaining allocated cost activities (usually non-value-added activities such as management and administration) for elimination, reduction, combination, or efficiency.

### Overhead Considerations

Overhead is typically defined as all manufacturing/service costs other than direct materials and labor. Traditionally, those costs that cannot be directly associated with direct product or service costs are classified as overhead and allocated on

**Activity Based Costing Principles**

**Traditional Cost System:**

Product	Units Made	Material Costs	Direct Labor Hours	Direct Labor \$10/hr	Overhead \$20/DL Hr	Total Cost	Unit Cost	Selling Price
A	20	\$ 60	5	\$ 50	\$ 100	\$ 210	\$10.50	\$15.00
B	60	180	25	250	500	930	15.50	22.00
C	140	420	65	650	1300	2370	16.93	24.00
D	300	900	180	1800	3600	6300	21.00	30.00

Note: Selling price = 140% X unit cost (rounded to higher dollar)

**Activity-Based Cost (ABC) System:**

Product	Units Made	Material Costs	Labor Costs	Unit Activity	Batch Activity	Product Activity	Total Cost	Unit Cost	Selling Price
A	20	60	50	170	33	300	613	30.65	None
B	60	180	250	140	38	500	1108	18.47	22.00
C	140	420	650	240	96	700	2106	15.04	22.00
D	300	900	1800	210	110	1000	4020	13.40	20.00

**Notes:**

- Unit-level activities: Procuring materials (\$50 per item),  
Manufacturing supervision (\$20 per hour)
- Batch-level activities: Set-ups (number X direct labor cost of \$10).  
Material handling (hours X \$6)
- Product-level activities: Order handling (\$200 per customer order, \$100 per manufacturing order)
- Selling price based on competitive market conditions.

**Exhibit 5.15** Traditional Cost System versus Activity Based Costing System

Traditional Costs:

Material	\$ 350.00
Labor	400.00
Overhead (200% of direct labor dollars)	800.00
Total Cost	<u>\$1,550.00</u>
Item Cost	<u>\$ 155.00</u>

ABC Bill of Activity Costs: (with efficiencies)

				ABC
<u>Direct Costs</u>				<u>Cost</u>
Material				\$ 230.00
Labor				280.00
Activities	Output Measure	Use per Unit	OM Cost	
Bill of material	Hours	1.5	\$20.00	30.00
Routing/process	Hours	2.2	34.00	74.80
Purchasing	Pos	4	80.00	320.00
WIP moves	Number	6	8.00	48.00
Inspections	Number	3	25.00	75.00
Packaging	Unit	1	18.00	18.00
Shipping	Unit	1	13.00	13.00
Total Activities				578.80
Allocated Costs				180.00
Subtotal				758.80
Total Cost				<u>\$1,268.80</u>
Item Cost				<u>\$ 126.88</u>

Exhibit 5.16 Sample Bill of Activities: Product A—100 items

some basis. Although many of the components of overhead may be necessary, a great number may not be. Often, the organization has hidden such unnecessary or wasteful costs as overhead so as not to attract attention to them. Overhead costs must be analyzed to determine those that are unnecessary and wasteful.

**OVERHEAD COSTS ARE REAL COSTS  
—AND THEY NEED TO BE CONTROLLED.**

Overhead in many organizations has become the biggest depository of costs. Overhead affects product costs, profit margins, resultant profits, and cash flow just as direct costs do. Those overhead costs that add value should be directly charged to the activity; those that do not should be eliminated.

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The company should review and analyze each function (e.g., sales, engineering, manufacturing, accounting, etc.) and determine which activities are direct product or service cost. Those activity costs that are direct should be assigned back to the products/services that use such activities. To accomplish such a functional analysis, each activity has to be fully analyzed to determine which ones are direct product costs (and the method of allocation or assignment) and which ones are not (to be eliminated).

For example, consider some typical activities in an administrative-type department (such as sales, purchasing, accounting, customer service, etc.):

- Telephone calls—incoming and outgoing
- Computer use—data processing, e-mail, Internet, and so on
- Receiving, reviewing, and filing paper
- Memo preparation and mailing
- Expediting/checking/reviewing activities
- Database maintenance
- Meetings—within and outside the department
- Breaks and lunches
- Surveys and audits
- Travel— internal and external
- Processing activities

In analyzing the function and its related activities, the company must look at the total cost of operating the function, department, or cost center. Some elements can be captured directly as product/service costs, while others may have to be allocated based on some formula. Other costs that are not relevant to product/service costs should be eliminated. Note that not all expenses can (or should) be allocated or assigned directly to the product/service level. However, the company should make every effort to assign as many of these expenses as is logical and practical.

## Functional Cost Controls

Another important aspect of an ABC system is to analyze and control each function of the organization, such as sales, manufacturing/service delivery, engineering/service design, computer processing, accounting, and so on. The starting point is to review and analyze the function as it is presently being performed so as to identify areas for improvement together with recommendations for such improvements. Typically, an individual or a study team is assigned responsibility for each major function. The goal of this analysis is to begin the ABC functional control system with the most economical and efficient systems and procedures as possible – and at the least cost. From that point, it becomes easier to maintain a program of continuous improvements.

Some tools for analyzing functions and their related costs are presented in Exhibits 5.17 to 5.21.

1. Purchase Requisition by User
  - Preparation
  - Review
  - Authorization
  - Submission to Purchasing Department
2. Purchasing Department
  - Review of Purchase Requisition
  - Vendor review and selection
  - Existing vendor
  - New vendor
  - Competitive bidding
  - Contracting
  - Data entry
  - Purchase Requisition
  - Purchase Order
  - Purchase Order processing
  - Printing
  - Forms separation, distribution, and filing
  - Purchase Order submission to vendor
  - Mailing process
  - Electronic ordering
  - Purchase Order filing
3. Matching Process—By User
  - Open Purchase Requisition file
  - Receiving Purchase Order copy
  - Match Purchase Order to Requisition
  - File open Purchase Order
4. Accounts Payable
  - Receive open Purchase Order copies
  - File in open Purchase Order files: by vendor, by PO number

**Exhibit 5.17** Identifying Activities for the Purchasing Function

### **ABC Case Study**

***ABC COST SYSTEMS CAN TURN LOSERS INTO  
WINNERS AND VICE VERSA.***

A company, ACE Inc., manufactures a commercial product that is highly competitive. The company was the original inventor of the product and at one time had 74 percent of the market. However, with strong competition (particularly from the

**Activity Based Costing Principles**

<b>Cost Data:</b>		
<ul style="list-style-type: none"> <li>• Average cost of PO process activities = \$130 (labor and materials)</li> <li>• POs processed in period: 240 X \$130 = \$31,200 total cost</li> <li>• By product item: Item #123 = 82 PO's X \$130 = \$10,660</li> </ul>		
<b>Costing by Product: Purchase Order Processing</b>		
Product	# of POs	%
1	183	6.6%
2	346	12.5%
3	639	23.1%
4	621	22.4%
5	468	16.9%
6	512	18.5%
<b>TOTAL</b>	<u><b>2,769</b></u>	<u><b>100.0%</b></u>
Total cost for Purchasing Department for period = \$ 88,766.		
<b>Assigning functional costs to products:</b>		
Product	%	Cost
1	6.6%	\$ 5,859
2	12.5%	11,096
3	23.1%	20,505
4	22.4%	19,883
5	16.9%	15,001
6	<u>18.5%</u>	<u>16,422</u>
<b>TOTAL</b>	<u><b>100.0%</b></u>	<u><b>\$88,766</b></u>

**Exhibit 5.18** Using Functional Costs to Assign Costs to Products

overseas market), market share has dropped to 32 percent over the past few years. Although its product is still perceived to be the best quality in the market place, ACE's four competitors have been able to basically copy the product and sell it from 10 to 30 percent less than ACE, as shown below:

<i>Company</i>	<i>Selling Price</i>	<i>% of ACE S.P.</i>	<i>Market Share</i>
ACE, Inc.	\$129	100%	32%
1	\$ 89	69%	36%
2	\$ 98	76%	17%
3	\$109	84%	8%
4	\$116	90%	7%

As can be seen, this has become a price-sensitive product, with the greatest sales going to the lowest-price seller. Some customers of ACE are still willing to

1. Inventory Carrying Cost (ICC) of items on hand waiting for delivery of stockout inventory =	\$ .02
ICC × Inventory Value × # of Days =	
.02 × \$ 8,200 × 6 days =	\$ 984
2. Expediting costs	
Personnel: \$15/hour × 22 hours =	330
Computer: \$20/hour × 2 hours =	40
3. Shipping charges (priority)	124
4. Production time lost: 4 hours × \$350 =	1,400
Total cost of a stockout	<u>\$ 2,878</u>
Number of stockouts: 26	
Total cost of stockouts for the period: 26 × \$2,878=	<u><u>\$74,828</u></u>

Exhibit 5.19 Cost of an Inventory Stockout—Representative Example

Labor hour cost: \$12 per hour		
Activity	Time	Cost
1. Receive PO copy from Purchasing and file in open PO file	10 min	\$ 2.00
2. Receive delivery and verify that delivery is ours: check bill of lading, packing slip, and sign	20 min	4.00
3. Compare delivery to open PO and record receipt on PO	15 min	3.00
4. Count parts—record on open PO reconcile to PO amount ordered	15 min	3.00
5. Produce receiving report using open PO copy	30 min	6.00
– Partial: PO back to open file		
– Final: PO to accounts payable		
– Receiving report to accounts payable		
6. Wait for quality control inspection	4 hrs	-0-
7. Move: storeroom, shop floor, or internal department	30 min	6.00
Total Cost of Receiving		<u><u>\$24.00</u></u>

Exhibit 5.20 Receiving Costs

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pay more for what they perceive to be better quality, and there is an indication of some customer loyalty. ACE is implementing ABC cost principles in an attempt to better control its costs, achieve flexibility in pricing, and get back its previous market share. The company believes that the public will buy its product instead of the competitors' if it sells the same high quality at lower prices.

The following cost workups show the differences between product costs and selling prices under different cost concepts.

*Traditional Cost Data*

Material Costs:

Lot size of 100, item cost of \$34.68, 120 items into production.

Labor Costs:

Labor rates:	Direct = \$12/hour	Indirect = \$16/hour
Storeroom issues/returns =		2 hours
Staging/get ready =		1 hour
Number of set-ups =		4 @ 6 hours each
Moves = 4 @ 1/2 hour each =		2 hours
Processing Time =		126.4 hours/lot
Quality Control =		8 hours/lot
Packing/shipping =		4 hours
Supervision =		6 hours/lot
Supplies =		\$4.80 unit
Other Costs (allocated) =		\$8.40 unit

Overhead Costs:

Overhead rate = 140% of direct labor costs (set-up and processing)

Selling Price Markup: 150% of total costs

Calculate the traditional cost and selling price per item:

	<i>Total Cost</i>	<i>Unit Cost</i>
Materials	\$4,161.60	\$41.62
Direct Labor		
Setups	288.00	2.88
Processing	<u>1,516.80</u>	<u>15.17</u>
Total Labor	1,804.80	18.05
Overhead	<u>2,526.72</u>	<u>25.27</u>
Total Cost	<u>\$8,493.12</u>	<u>\$84.94</u>

Selling Price: 150% Markup \$127.41 Rounded to \$129

Labor hour cost: \$16 per hour			
Activity	Cost Element	Time	Cost
1. Receive PO from purchasing and file in open PO file	Labor	15 min	\$ 4.00
2. Receive "receiving report" from receiving, pull open PO from file and compare hold in open receipts file	Labor	20 min	5.33
3. Receive invoice from vendor and match to open receipts or pull open po and compare and hold as open invoice	Labor	30 min	8.00
4. Invoice/receiving errors	Labor	0	0.00
5. Computer data entry	Labor	10 min	2.67
6. Computer check prep	Labor	10 min	2.67
	Checks		0.15
7. Mail checks	Labor	10 min	2.67
	Envel., postage		0.50
8. File paid payable	Labor	15 min	4.00
9. Meetings, phone, fax	Labor, phone	0	0.00
Total Cost			<u>\$29.99</u>

Exhibit 5.21 Accounts Payable Costs

ABC Costs Using Traditional Cost Data

Calculate ABC costs from the information provided:

	Total Cost	Unit Cost
Materials	\$4,161.60	\$41.62
Direct labor	1,804.80	18.05
ABC costs:		
Storeroom	32.00	0.32
Staging	16.00	0.16
Moves	32.00	0.32
Quality control	128.00	1.28
Packing/shipping	64.00	0.64
Supplies	480.00	4.80
Supervision	96.00	0.96
Other costs	<u>840.00</u>	<u>8.40</u>
Total ABC Costs	<u>1,688.00</u>	<u>16.88</u>
Total Cost	<u>\$7,654.40</u>	<u>\$76.55</u>

What selling price should be recommended?

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*ABC Costs Integrated with Operating Efficiencies and Cost Reductions*

Through analysis of operations and processes, the following activities could be eliminated:

- Storeroom
- Staging
- Moves

In addition, through effective repurchase negotiations material costs could be reduced to \$26.00 per unit and 100 pieces placed into production to produce 100 items.

Direct labor times could also be reduced as follows:

- Setups: 3 @ 4 hours each
- Processing time: 108.8 hours per lot
- Quality control: 2 hours per lot
- Supervision: 1 hour per lot

Task: Recalculate ABC costs based on the preceding data.

	<i>Total Cost</i>	<i>Unit Cost</i>
Materials	\$2,600.00	\$ 26.00
Direct labor		
Setups	144.00	1.44
Processing	<u>1,305.60</u>	<u>13.06</u>
Total	1,449.60	14.50
ABC costs:		
Quality control	32.00	0.32
Packing/shipping	64.00	0.64
Supplies	480.00	4.80
Supervision	16.00	0.16
Other costs	<u>840.00</u>	<u>8.40</u>
Total ABC Costs	<u>1,432.00</u>	<u>14.32</u>
Total Cost	<u>\$ 5,481.60</u>	<u>\$ 54.82</u>

What selling price should be recommended at this cost?

*ABC Costs with Identification of Specific Elements of Other Activity Costs*

Further analysis identified specific elements of other activity costs of \$840.00 to be as follows:

	<i>Output Measure</i>	<i>Per Unit</i>	<i>OM Cost</i>	<i>Total Cost</i>	<i>Unit Cost</i>
Bill of material	Hours	2.0	\$30.00	\$ 60.00	\$0.60
Routing/Process	Hours	1.5	20.00	30.00	0.30
Purchasing	POs	4	75.00	300.00	3.00
Receiving	Number	4	12.00	48.00	0.48
Storeroom moves	Number	2	18.00	36.00	0.36
Work-in-process moves	Number	6	12.00	72.00	0.72
Inspections	Number	3	25.00	75.00	0.75
Packaging	Unit	1	18.00	18.00	0.18
Shipping	Unit	1	13.00	13.00	0.13
Accounts payable	Number	4	32.00	<u>128.00</u>	<u>1.28</u>
Total Activity Costs				\$780.00	\$7.80
Allocated Costs				<u>60.00</u>	<u>0.60</u>
Total Cost				<u>\$840.00</u>	<u>\$8.40</u>

What activities should be considered for further analysis leading toward further cost reductions? Remember that a dollar of savings from any source produces a dollar of profit to the bottom line and to positive cash flow. Accordingly, any of these activities that can be eliminated or reduced will result in direct increases to the bottom line and positive cash flow.

**CONCLUSION**

The production/service costs the company incurs represent the most significant cause of company cash outflows. In order to improve cash flow, therefore, it is essential for the organization to control those costs effectively. While cost control is a well-accepted way for a company to improve its profitability, its relevance to cash flow is often not understood, not recognized, or (in the worst case) deliberately ignored.

Benchmarking and ABC are two formalized methods that can be used to institute better cost control within the company. Benchmarking allows the company to compare its processes and related costs to objective outside standards—methods developed by others and proven to be best practices. ABC is a method of analyzing company costs to determine just what drives those costs and assigning

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the costs to particular products or services based on how many of those drivers are actually used by the particular products or services. In this chapter we have attempted to provide some illustrations of how these techniques might be applied. While the examples are necessarily illustrative rather than definitive, an understanding of the principles underlying the techniques should allow them to be adapted and applied to virtually any company situation.

***THE GREATEST CAUSE OF CASH OUTFLOWS  
IS OPERATING COSTS.  
THE GREATEST OPPORTUNITY TO IMPROVE  
CASH FLOW IS TO CONTROL OPERATING COSTS.***