

# Alphabet Soup: Good for You or an Indigestible Stew?

Pekin Ogan and Les Heitger

Over the last decade or so, the theory and practice of business have been inundated by a significant growth in acronyms: JIT, TQM, ABC, EI, ABM, LIS, EDI, TOC. So many have appeared in the melting pot of business activities that we call them the "alphabet soup" of business. We all know the reputed benefits of alphabet soup. Through the years we've been taught that it's really good for us, particularly when we're not feeling well.

Many executives have apparently taken this advice figuratively, adopting some or all of the alphabet soup ingredients, particularly when their business starts feeling a little under the weather. They hope the soup will be good for their firm, helping it become—or continue to be—a world-class competitor.

But not all ingredients work wonders with the same degree of success at all business organizations. Some of them often may not be effective in remedying the ills of an organization. Popular ingredients may not even be appropriate in some situations. Our goal here is to caution managers against blind acceptance of popular "new" business practices when circumstances or a firm's environment do not warrant adoption of the contemplated changes.

## **Some Alphabet Soup Ingredients: Blend Carefully**

Among the more popular alphabet soup ingredients are ABC (activity-based costing), JIT (just-in-time production or purchasing), TQM (total quality management), CIM (computer integrated manufacturing), EDI (electronic data interchange), and TOC (theory of constraints, previously known as OPT, or optimum production technology). Any mix of them can go into the alphabet soup of a company. Some managers throw in a whole handful of them and hope for the best. But the secret of great soup is not necessarily the number of

ingredients, but the careful blending of the individual ingredients so that they yield the particular flavor required. Let's say we want to cook spicy lentil soup. Cayenne peppers, chili peppers, and black peppers all add spice to food. However, if we add all three in the same quantity as called for in each individual recipe, the result would probably be inedible.

The consequence of this analogy for a business is that despite a manager's determination to reduce costs, the firm's costs may increase dramatically anyway if alphabet soup ingredients are used carelessly. Worse yet, the ingredient may not be the right one for the firm.

## **Obsession with Per-Unit Costs**

Before we begin discussing our concerns over the implementation of alphabet soup ingredients, we must first address the subject of cutting costs. Owners and managers today appear to be obsessed with "cost cutting," which means slashing costs without considering all potential implications. But if they carefully study the cost drivers of the business and simplify operations with subsequently lower expenses, they can achieve cost reduction.

Incurring an expense is not bad in itself. Costs are investments in business opportunities. Money invested wisely and effectively in hardware, software, people, and R&D often leads to optimum revenue returns and other long-term benefits. On the other hand, blindly cutting costs, such as "5

*ABC, JIT, TOC—firms are rushing to adopt all the new "miracle ingredients," often oblivious to their potential flaws in managing world-class operations.*

percent across-the-board," or attempting to reduce per-unit manufacturing costs by arbitrarily increasing production volume to spread fixed costs over more units, is very poor resource management.

Intel's chairman and *Time's* "person of the decade" for 1997, Andrew Grove, once said that anybody can cut costs. The most important decision the management of a firm needs to make is to decide the right kind of investment at the right time in the right amount. Those who do not invest wisely, said Grove, are bound to have stale products or services, will lose market share, and may not even survive in the long run.

Even for financially strong companies, a 5 percent across-the-board cost cut may jeopardize critical resources, causing the firm's competitive standing to suffer. If a company cuts 5 percent from its customer service function when that area already has trouble matching competitors' customer service levels, the firm's ability to compete is dramatically affected. A more desirable strategy is to avoid across-the-board cost cuts by adopting a more focused approach to identifying the firm's critical components—those functions that, if curtailed, would definitely place its competitive status in jeopardy, both in the short run and in the long run.

We are not suggesting, however, that companies eschew their cost reduction efforts. Done the right way, lowering costs is as essential to a firm's survival as wise investments in R&D, hardware, software, and human resources. Some cost reductions take the "easiest" way and are really cost cutting in disguise. A currently popular and highly visible way of reducing costs is to lay off employees. But many such firms, especially in industries requiring highly skilled workers, act as if they still have not learned a basic truism: If a company lays off skilled workers in occasional slack periods and hires them back as needed, it sends a strong message to the workers that they are being treated as commodities. Laying off and rehiring is expensive, especially if the previously laid-off, skilled workers have migrated to other firms or industries. Training and educating workers has never been cheap. Many companies appear to understand little about the true costs of their employees, such as training, firing, rehiring, retraining, and dislocation.

Another common way of reducing per-unit costs is to raise production output, believing it leads to "cost efficiencies" and decreasing manufacturing costs per unit. Piles of excess parts and finished products begin to accumulate in or around the plant, swelling inventories and many related costs. Meanwhile, management accounting systems typically continue to send signals to managers that they are making the "right decisions" because per-unit manufacturing costs are

lower. Not exactly! Cost reductions in one area—in this case, manufacturing—are illogical if they are more than offset by cost increases elsewhere. In our example, the added costs of inventory storage, obsolescence, handling, and insurance may be more than the production cost savings. But this simple idea seems to have eluded many managers. They continue to focus on the product cost-related accounting numbers rather than the process itself.

### The Road Less Traveled

If we tried to describe all the issues involved in evaluating the objectives, environment, circumstances, and characteristics of an effective and efficient implementation of each alphabet soup ingredient, this article would be the length of an epic novel. Instead, we will discuss critical issues and questions related to three popular ingredients: ABC, JIT, and TOC.

We have observed many firms adopting "new" conventions in an effort to obtain more reliable accounting information. In a way, these managers may be justified in thinking that traditional accounting systems and reports do not necessarily provide enlightened information. Frustrations with traditional cost accounting reports—particularly accounting for the overhead component of product costs in heavily automated manufacturing systems—led to the rediscovery of activity-based-costing (ABC).

### ACTIVITY-BASED COSTING: INGREDIENT #1

**A**ctivity-based costing, sometimes called transaction costing, is used to assign overhead costs to individual products. The assignment is based on the amount of overhead resources each product consumes. ABC became popular as managers discovered that traditional labor-based manufacturing overhead application rates bore little resemblance to current overhead consumption. As continued automation made labor a smaller and less direct part of total manufacturing costs, the significance of ABC for management grew.

Management accountants trying to implement ABC attempt to trace overhead costs to products using a wide variety of activities for which cost pools are accumulated. The activity that is the primary driver of each cost pool is then used to assign overhead costs to products. When used correctly, ABC can provide a more accurate picture of production costs than traditional overhead costing systems. The data in **Tables 1** and **2** can be used to illustrate overhead cost calculations using ABC.

Each time a product line is set up on the production process, it will be assigned \$1,033.33

for setup activity cost. Whenever a product line is handled (picked up, moved, stored, picked up again, moved to the production line), it will receive \$550 per handling as its share of the overhead activity costs. Similarly, each part number on a product's bill of materials will cost the product line \$750 (the more parts a product has, the more it costs to order, receive, inspect, store, issue to production, and account for the purchase). In Table 2, we show the determination of total costs for the three products.

It appears that Product A has the highest total per-unit cost, followed by Product C. Product B has the lowest overhead allocated because it consumes fewer overhead activities than the other two. By concentrating on each product's consumption of overhead resources, ABC avoids the typical problem of overstating the cost of those products that are low-level consumers of overhead and understating those that are high-level consumers. The usefulness of an ABC system depends on a number of issues related to the firm, the accounting staff, and the implementation process itself.

The advantages of ABC include its ability to give management a much sharper focus on indirect production costs and provide more detail about overhead consumption, thereby creating a more accurate measure of product costs. Moreover, conducting an activity analysis is essential to understanding the firm's process. ABC usually directs management's attention to the value of each activity. In the process, non-value-added activities are supposed to be identified, then reduced or eliminated. John Deere and Navistar came back from the brink of corporate death by identifying their manufacturing activities, separating them into value-added versus non-value-added activities, and eliminating or minimizing the non-value-added ones and their costs. The next step leads to the simplification of the process. This is one of the fundamental principles of continuous improvement (a.k.a. *kaizen*).

#### Are You Safe if You Use ABC?

It is true that ABC is an interesting "new" business practice. Many firms have shown significant interest in it by engaging consultants or sending their managers to professional seminars. Many spend significant time and financial resources in trying to implement ABC systems. But does this mean that virtually all firms will benefit from ABC and that most product-costing problems will disappear? Not exactly. ABC systems do not guarantee foolproof and accurate product costs. The answer depends on a few crucial questions about your firm and those with which you do business:

- Do you sell every item you produce within a short period of time?

Alphabet Soup: Good for You or an Indigestible Stew?

**Table 1**  
Determining Activity-based Overhead Application Rates

Overhead Activity	Activity Total Cost (1)	Activity Units Consumed (2)	Activity Unit Cost or the Overhead Application Rate (1 ÷ 2)
Setup	\$6,200	6	\$1,033.33 per set-up
Handling	3,300	6	550.00 per handling
Part numbers	3,000	4	750.00 per part #

**Table 2**  
Determination of Activity-Based Full Product Costs

Product	Applied Overhead*	Direct Labor	Direct Material	Full Product Cost per Unit
A	\$195.83	\$15	\$30	\$240.83 per unit
B	23.34	15	30	68.34 per unit
C	62.50	7	30	99.50 per unit

\*The applied overhead costs per unit of product were determined as follows:

Product A		
Setups	2 @ \$1,033.33	\$2,066.67
Handling	2 @ 550.00	1,100.00
Part #'s	1 @ 750.00	750.00
<b>TOTAL OVERHEAD</b>		<b>\$3,916.67</b>
Overhead per unit = \$3,916.67 ÷ 20 units = <b>\$195.83 per unit</b>		

Product B		
Setups	1 @ \$1,033.33	\$1,033.33
Handling	1 @ 550.00	550.00
Part #	1 @ 750.00	750.00
<b>TOTAL OVERHEAD</b>		<b>\$2,333.67</b>
Overhead per unit = \$2,333.67 ÷ 100 units = <b>\$23.34 per unit</b>		

Product C		
Setups	3 @ \$1,033.33	\$3,099.99
Handling	3 @ 550.00	1,650.00
Part #	2 @ 750.00	1,500.00
<b>TOTAL OVERHEAD</b>		<b>\$6,249.99</b>
Overhead per unit = \$6,249.99 ÷ 100 units = <b>\$62.50 per unit</b>		

(NOTE: Per unit costs are rounded up.)

- Do you have products that "fly out the door"?
- Do you have products that you believe dominate the industry so that none of your competitors appear to want to meet your price?
- Do you have products that have substantial backlogs of orders?
- Do any of your customers complain about your prices?
- Do you have multiple products that occupy the same facility? Do they consume different amounts of common resources? Do you know?

• Have you ever had to discontinue a product because it was losing money?

Below we cite some typical comments that we call "famous last words before Chapter 11 or Chapter 7" to illustrate the disadvantages and pitfalls of ABC.

### Popular ABC Myths

*"ABC leads to cost savings."* ("ABC has solved all our problems.") We call this pitfall the Per-Unit Cost Reduction Obsession shaking hands with ABC. Just like traditional costing systems, ABC is also influenced by production volume. In calculating the ABC overhead rates, the total expected cost of the activity is typically divided by the volume of production. Thus, more precise measurements of overhead resource use typically lead to more accurate measures of product manufacturing costs.

But ABC does not eliminate the impact of volume on product cost measurement. Top management of some firms using ABC fail to recognize how volume affects product costs, assuming ABC has solved the problem. If not monitored properly and used as a performance measurement device, ABC can result in a subtle shift toward volume-based production decisions without realizing it. Some lower- or middle-level managers may be tempted to reduce the overhead cost per unit by increasing the volume of production. In the meantime, top management believes that each unit carries the "appropriately tracked" activity costs.

What is conveniently overlooked many times regarding the crucial link between the product's cost per unit and the overhead costs incurred is the volume of production for each product line. ABC does provide a much better picture of the cause-and-effect relationship between a product line's consumption of overhead activities and costs. But it is not immune to the same gremlin that plagues traditional overhead costing. That is, the production volume in the denominator used to determine the overhead rate, whether under traditional costing or ABC, drives the ABC rates. In the hands of an incompetent or conniving manager, ABC is no better than the "traditional" method it replaces.

Moreover, in the hands of an uninitiated manager, ABC can even lead to disaster for a firm, the consequences of which may be invisible in the short run. Here is a likely scenario: A product line manager who is incapable or unwilling to reduce total overhead costs can increase the pro-

duction volume, which reduces the overhead rate for each activity. This in turn reduces the overhead cost per unit. Let's assume that instead of running 100 units of Product B when the machinery and tools and dies are set, the Product B manager decides to run 1,000 units. What happens? The overhead rate per unit of Product B for setups decreases, along with the other rates. The resultant cost per unit shows a dramatic decrease from that shown in Table 2. The previous overhead cost per unit of \$62.40 has now been reduced to \$6.24 per unit. The total cost per unit is now \$43.24 instead of the previous \$99.50. This represents a "reduction in cost" of almost 50 percent. The manager of Product B looks like a genius after having drastically "reduced costs per unit."

We often hear the refrain "the figures do not lie because we are now using ABC." The figures may not be lying, but the manager is if the increased production is not sold relatively soon. Cost per unit reduction, whether using traditional costing or ABC, is a righteous reduction if—and only if—the increased production is sold quickly. Otherwise, the firm suffers from the dreaded and very costly invisible-sausage-link syndrome.

*"We need ABC information every day."* Many firms decide to install ABC systems to capture data on an everyday basis at the smallest cost center (unit level). The managers involved state that they need ABC information daily or quite frequently, with fine granularity. The motive is to maintain continued success with the ABC implementation. We believe many firms have no need to track and capture ABC costs every day. However, if the firm makes pricing and/or strategic product decisions such as make-versus-buy on a daily basis, then the situation is different; it does need to capture ABC information daily.

Thus, firms should use ABC information only when needed. Otherwise, they will invest in costly ABC systems and consulting services that result in overkill and do not lead to cost savings or improved competitiveness.

*"We need and can use ABC everywhere in our firm."* ABC systems need activities to be accurate. Activity-based costing is designed to accurately assign indirect production costs to products. Indirect production costs that are activity-driven, such as machine setups, material handling, and equipment maintenance, are ideal for use in ABC systems. Many others are not activity-driven, including property taxes, occupancy costs, plant depreciation, insurance, utilities, supervisory salaries, and other common overhead costs that relate to the manufacturing facilities. These costs are not fundamentally generated by activities, but rather by the passage of time. So even in an ABC system, they are typically related to estimates of production volume. Even such

*"In the hands of an incompetent or conniving manager, ABC is no better than the 'traditional' method it replaces."*

activity-driven costs as material handling require estimates and measures to calculate the activity rate to use for that particular indirect production cost.

## JUST-IN-TIME: INGREDIENT #2

Used with skill in the right organization, in the right industry, for the right products and with the right people, just-in-time (JIT) can be a powerful competitive tool. Otherwise, it is just another gimmick doomed to fail. Does your firm qualify for JIT? What form of JIT? Is your firm the type that manufactures just-in-case (JIC) but delivers JIT? Are you at the point where you assemble to order (ATO)? Or does your firm classify as a true JIT producer and shipper? Below are some answers to frequently asked questions.

The first and most important question is: *Should my company use JIT manufacturing?* Many manufacturing firms have adopted JIT ideas. GE's circuit manufacturing benefitted by reducing parts from more than 25,000 to fewer than 1,300 and consolidating six factories into one. Hewlett-Packard benefitted by simplifying manufacturing, which led to 55 percent savings on materials and 75 percent savings on labor costs.

Although JIT manufacturing makes a good alphabet soup ingredient for some companies, for others it does not. It should be adopted only after a careful examination of critical variables, many of which are interrelated and should be considered in aggregate rather than individually.

### Critical Variables

**1. Number of competitors.** If a company has many competitors and its production lead times are longer than theirs, the result may be a loss of customers. This is particularly true if the customers are large firms and the vendor is not. To avoid violating their customers' patience index, many firms resort to expeditors, special deliveries, or extra shifts to build and ship products on time. If customers have a strong business relationship with the firm, their patience index may be large. Customers, however, operate under many pressures and constraints. If a manufacturing customer has to wait for its raw materials, including parts and components, its manufacturing and delivery deadlines will be out of balance.

Many firms pay a penalty to their customers if they cannot deliver on time. Moreover, tardy deliveries may result in large opportunity costs such as lost profits, or even erosion of market share for the customer. We have seen a manufacturer of injection-molded television cabinets lose many large customers because the customers had a low patience index and took their business

elsewhere. An insidious and often unnoticed consequence of the patience index is the proliferation of expeditors, overtime, or weekend work—none of which comes free. This is the problem TOC (to be discussed shortly) tries to solve.

**2. Lead times: production and purchasing.** A firm's production lead time is a crucial variable in deciding whether to adopt JIT manufacturing. How long is your firm's lead time? Is it longer than your competitors'? Is it shorter than your customers' patience index?

**3. Setup (changeover) times.** If you do not have dedicated (focused) manufacturing facilities, setup times are crucial.

A shorter setup time leads to increased flexibility. Smaller cycle times produce the same result, but may not be controllable because of inherent manufacturing and/or design parameters. You have to know how quickly you can change your production facilities from one product line to another before adopting JIT manufacturing. Questions to consider include:

- Do you produce several products in the same factory?
- Does it take you longer to change dies compared to your competitors? If your competitors can beat you in the setup times, they will be more flexible and hence more competitive.
- Do you possess all the necessary tools to compete in the global marketplace? These include delivery networks, before- and after-sale customer service, and a dedicated, competent work force.

**4. Demand predictability.** How predictable is your demand? Have you entered into an understanding or contract with your customers so that you have smoothed their purchasing schedules? If you experience extreme peaks and valleys in products demanded, your manufacturing capabilities will suffer significant hardships. Will you have to overinvest so your manufacturing can meet the peak demands? Can you meet peak demand by using overtime?

Many firms carve a niche for themselves by having enough production capacity on hand to meet customers' peak demands. Crown Cork and Seal is one such firm because it overinvested to meet those demands. On the other hand, Ford, Chrysler, and GM used to prefer overtime, believing it led to better productivity. However, too much of a good thing can also cause problems,

*"Used with skill, in the right organization, in the right industry, for the right products and with the right people, just-in-time (JIT) can be a powerful competitive tool."*

such as the strikes at GM parts plants that idled many across the U.S. and Canada.

Using overtime usually avoids the death spiral caused by overinvestment in production facilities. During times of low demand, underused factories lead managers to increase production in an attempt to "reduce" per-unit costs. Some firms that use actual (historical) costing even feel the

*"If your firm's situation is such that you are enjoying healthy product gross margins, you may want to manufacture JIC so you can deliver JIT."*

need to increase their prices. Reduced production leads to increased per-unit costs because fixed production capacity costs are divided into smaller quantities of production. If the prices rise, in the presence of many competitors de-

mand naturally falls, which leads to less production in the factory, which leads to greater costs per unit, which results in increased prices to capture "increasing costs." And the death spiral keeps going downward, deeper and deeper.

**5. Proprietary or commodity product?** If your product line is composed of proprietary products, perhaps you can afford to produce and deliver JIT. If, however, you have commodity products for which there are many suppliers and many competitors, you may want to deliver JIT but produce JIC. Many companies, including Alpine Electronics in Greenwood and Kimball International in Jasper, Indiana, follow this strategy.

**6. Product gross margin.** Related to the above, if the product gross margins are substantial and you have many competitors, your firm cannot afford to produce JIT. If your customers do not have ready access to your product(s), there is a high likelihood that they will go to your competitors. According to an old marketing adage, it is very easy to lose a sale but ten times harder to make one. If your firm's situation is such that you are enjoying healthy product gross margins, you may want to manufacture JIC so you can deliver JIT. Higher product gross margins in the presence of many competitors may preclude JIT manufacturing.

**7. JIT purchasing?** The true benefits of JIT are realized only if everybody on the value chain follows JIT manufacturing and purchasing practices. Do you manufacture on a JIT basis? If so, do your suppliers deliver your needs that way? If so, do they practice JIT production and delivery, or JIC production and JIT delivery? Do they also require JIT delivery of their needs from their suppliers? These questions need to be asked to ascertain whether everybody in the value chain is

receiving the full benefits of JIT manufacturing and delivery. Unless the value chain for products (from the point at which raw materials are mined from the earth to the delivery of the product to the ultimate user) is entirely JIT manufacturing and delivery, the benefits of JIT are not fully realized. Somebody is paying for the storing, handling, and carrying of those products. Many firms try to get their first-level suppliers to change over to JIT purchasing, encouraging and even assisting them in having the second- or third-level suppliers practice JIT purchasing as well.

**8. Threat of technological obsolescence.** If the products you manufacture are not subject to technological obsolescence, you may afford to produce JIC and deliver JIT. Otherwise, you must produce and deliver JIT. Having adopted a JIT manufacturing strategy in its Research Triangle Park facility, IBM caused millions of dollars worth of unsold PS/1 computers to accumulate in the warehouse. Eventually, the firm had to hold a "fire sale" to reduce inventory. The key was that the factory was not manufacturing JIT to the ultimate customers, but to its own warehouse operations. If increased throughput is essential to use your plant's capacity, you should also make sure that what is produced is sold within a reasonable time period. Otherwise, the "efficiencies" shown by the accounting system will be more than offset by inventory carrying costs and, in the case of technologically vulnerable products, obsolescence.

**9. Need automation to implement JIT?** There was a time when many managers were infatuated with automation and saw it as necessary to achieve competitiveness, including changing over to JIT manufacturing. However, many firms have eliminated their automation, such as robots and so on, because the increased investment and maintenance costs do not justify further use of it. The Ford Steering Systems Plant in Indianapolis scrapped many of its robots because they cost more to maintain, program, and run. "It was a constant headache to work with the robots," said one manager. "So we now use them only where absolutely necessary." The plant is also in the process of scrapping its very expensive automatic storage and retrieval system (ASRS), which was the pride and joy of the company just a few years ago. When a firm receives its needs and manufactures and delivers its product(s) on a JIT basis, a fancy, complicated, and expensive ASRS becomes unnecessary.

### Summary of JIT Issues

Candidates for JIT delivery but not JIT manufacturing typically have the following features:

- many competitors;
- high gross margins;

- cost of storing, carrying, and capital tied up in inventory that is far less than the gross margin;
- distant suppliers;
- no transportation system in place, or a system subject to a transportation monopoly;
- unreliable suppliers (Ford's purchasing department still buys more than it needs to meet its manufacturing—that is, its purchasing is buffered JIT—because defects still persist even though now they talk about discrepant parts per 100,000 or one million, a far cry from earlier days);
- inflexible, uncooperative work force;
- no pocket profit analysis;
- no incentive system in place to motivate employees and earn and retain their loyalty.

To summarize, firms do not necessarily need high technology for success in manufacturing or service. In the not-too-distant past, GM's Hamtramck Cadillac plant was a very unsuccessful experiment in high technology. A more traditional Taurus plant in Atlanta, on the other hand, has been a success story for Ford's handling of a challenge from imports. GM's approach of throwing money at a "problem" was different from Ford, which chose to simplify the processes. In the end, for those two plants at least, GM lost and Ford emerged a winner.

### THEORY OF CONSTRAINTS: INGREDIENT #3

The Theory of Constraints (TOC) is a simple concept rooted in identifying the activities of the firm in question. Charting the process flow is the first step. Then bottleneck activities are identified, such as a heat treatment area or the painting department. Next, the bottlenecks are alleviated by increasing their capacity or slowing down non-bottleneck production. Of course, there are accompanying ideas: wasting productivity at the bottleneck constitutes the most critical costs, and the firm must monitor all costs.

We believe TOC is a brilliant adaptation of linear programming to manufacturing. It is also an excellent way for a company and its consultants to achieve financial benefits in the short run. TOC is perfect for those companies that, for several reasons, cannot or will not make the transition from traditional push manufacturing to pull manufacturing. When they follow TOC, firms are attracted to the idea that they don't even have to move machinery and equipment to make the factory go to cell manufacturing.

TOC makes no attempt to streamline production processes, leaving existing processes as they are. Rather, it attempts to raise the capacity of the bottlenecks. This may increase the balance of the process flow; it may also, however, increase costs. Because the flow is now balanced, there is no real way to identify and critically evaluate all processes with a view to eliminating them. It is

generally a good idea to identify bottlenecks, but this can lead to such problems as:

1. unnecessary increased investment at the bottleneck resource to "elevate the constraint" if the products are not sold soon; or
2. a false sense of increased competitiveness if TOC is implemented with ABC. ABC is applicable only at the bottleneck resource. Otherwise, it would increase the likelihood that local managers will be motivated to increase throughput in an effort to reduce ABC costs. However, if the performance measurement is the cost of scarce unit per unit of finished product sold, this problem may be avoided. Therefore, we offer the following morals to be considered when contemplating an investment in TOC.

**Moral 1.** Increase capacity at the bottleneck only if all production can be sold relatively soon. This is a very simple idea, rooted in the concept of the value chain and related to the profit margin per unit of product sold. Also, if your firm is an order taker rather than an order anticipator, you should elevate the constraint as long as the orders taken are larger than the bottleneck capacity. If you have significant backlog, you may want to consider raising the bottleneck resource. If, however, you anticipate the demand (orders) to decrease, you should hesitate before you invest to elevate (relieve) the constraint.

**Moral 2.** Decrease (subordinate) capacity at non-bottleneck processes if all production cannot be sold soon. This means that if your firm produces for inventory as a regular business reality, you should attempt to downsize and decrease non-bottleneck capacity if production is not sold soon. This will reduce total costs. TOC suggests that you also try to cut all expenses—excellent advice. But if you try to reduce expenses across the board without regard to the critical or noncritical nature (bottleneck vs. non-bottleneck) of the equipment, you may cut into more muscle than you intended.

*"Increase capacity at the bottleneck only if all production can be sold relatively soon."*

### Summary of TOC Issues

TOC increases the capacity of bottlenecks, but is not a good way to evaluate your processes for sustained competitiveness.

1. Investment in bottlenecks is unnecessary if your products are not sold relatively soon.
2. Your firm may get a false sense of achievement and world-class competitor status if it adopts TOC along with ABC. (There are, however, hidden dangers.)
3. What is good for others may not be good for you. Evaluate your firm critically. There is no

sense in being a copycat if you cannot copy successfully.

**A**ny company trying to become a world-class competitor needs to examine alphabet soup ingredients very carefully. The moral is to proceed with caution. Use safeguards. Avoid getting into a mindset that embraces all or any of the ingredients as saviors. Make sure your company's performance evaluation and compensation programs are not locked into only a few of the accounting numbers generated by the alphabet soup systems. Do not use a single number for performance evaluation and employee compensation. Do not trust accounting numbers, especially ratios; they are susceptible to manipulation. Remember that you usually get what you measure.

Is your company large enough that it can withstand a short-term or even protracted drop in demand for your product(s)? Being large is no assurance that you are safe. Wang used to brag about being so large that management used the firm's size in its sales presentations: "We're a \$3 billion company... We're not going to just blow away" (Bulkeley and Wilke 1992). A year later, Wang declared Chapter 11 bankruptcy. Thus, being large is no guarantee that your firm will survive and thrive in fiercely competitive markets. Being flexible and quick to adapt to changes or even anticipate paradigm shifts are the qualities that define a world-class competitor today.

Just because other companies are cooking up alphabet soup, it may not be a valid diet for yours. Use the ingredients if and only if they are applicable to your particular situation, your particular firm, and your particular employees. And that definitely includes the management team; remember, fish rots from the head! □

#### References

William M. Bulkeley and John R. Wilke, "Filing Chapter 11, Wang Sends Warning to High-Tech Circles," *Wall Street Journal*, August 19, 1992, p. 1.

Pekin Ogan, "Assessing the Impact of Human Resource Accounting Information on Managerial Decisions: A Field Experiment," *Personnel Review*, 17, 3 (1988): 29-35.

Pekin Ogan, "Do You Have the Right Incentives to Avoid the ISLS?" unpublished working paper, Indiana University, 1998.

Pekin Ogan and Les Heitger, "ABC and the Invisible Sausage Link Syndrome," *Cost Management Update*, Institute of Management Accountants, July 1994, pp. 2-3.

Pekin Ogan and Les Heitger, "Pocket Profit Analysis: How to Identify the Ugly Customer," presented at 6th Annual Meeting of American Society of Business and Behavioral Sciences, Las Vegas, Nevada, February 1999.

Donald V. Potter, "Success Under Fire: Policies to Prosper in Hostile Times," *California Management Review*, 33, 2 (1991): 29-38.

Richard J. Schonberger, *World Class Manufacturing: The Lessons of Simplicity Applied* (New York: The Free Press, 1986).

John K. Shank and Vijay Govindarajan, *Strategic Cost Analysis: The Evolution from Managerial to Strategic Accounting* (Homewood, IL: Irwin, 1989).

**Pekin Ogan and Les Heitger** are professors of accounting and information systems at Indiana University's Kelley School of Business, Bloomington, Indiana. The authors gratefully acknowledge the comments and suggestions of Eric Bauchet of the Whirlpool Corporation and James Stegemiller of Arvin Industries. Thanks also go to the Editor, whose suggestions added clarity.