ABC in a Virtual Corporation

Accounting is the only "real" function at this donut maker, which outsources almost every activity.

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Certificate of Merit

In a virtual corporation only the core, strategic functions of the business are performed inside the company. The remaining support activities are outsourced to a network of external companies that specialize in each function. These firms form functional alliances to manufacture products or provide services for customers. The virtual corporation positions itself at the center of these relationships and serves as the catalyst that draws these cooperating companies together and organizes how the work will flow. The goal is to extract the maximum value-added from these partnerships while making the minimum investment in permanent staff, fixed assets, and working capital.[1]

Super Bakery, Inc., has been developed on the lines of a virtual corporation. This company, which was formed by former Pittsburgh Steelers' running back Franco Harris in 1983, is a supplier of donuts and other baked goods to the institutional food market. For the past 12 years, it has been gaining market share and establishing a firm foothold in the highly competitive institutional baked goods market.

Instead of creating a large multifunctional organization to administer the business, the management of Super Bakery outsourced selling to a network of independent brokers and contracted out manufacturing, warehousing, and shipping. Four regional sales managers guide and assist the independent brokers. A small office staff processes orders and handles credit and collections. Super Bakery handles strategic planning, marketing, R&D, and finance/accounting in-house, and Franco Harris hired a master baker to develop new products. The company also purchases ingredients and formulates and produces its own dough.

Super Bakery's major challenge has been to coordinate and control the various functional activities performed outside the company by brokers and contractors. This challenge consists of a twofold problem of controlling the quality of service provided to customers and controlling the cost of these services. Managers and employees at Super Bakery developed a performance reporting and activity-based costing system that helped the company maintain control over outsourced functions.

SUPER BAKERY'S STRATEGIES

When Super Bakery entered the institutional food business in the early '80s, the senior managers knew they faced an uphill battle. The market was mature with little growth in the baked goods segment. Members of the management team, however, had extensive experience in the institutional food business. Marketing strategies and policies were developed that followed standard industry practices closely.

The first four years were disappointing for the company. Penetrating the institutional food market proved more challenging than management had thought, probably because Super Bakery followed industry practices too closely. Customers were not given any reason to buy from Super Bakery. When management started questioning industry practices and began developing unique strategies and tactics, sales began to take off.

First, Super Bakery targeted the school system segment of the institutional food market, which has been in a state of decline because of funding pressures and increasing government health requirements. Management felt that this customer segment was poorly served. The company pioneered "low-calorie, vitamin-enriched donuts that tasted delicious and met USDA guidelines." This strategy helped Super Bakery to grow annual sales while the sales of conventional, high-fat donuts were declining.

Second, Super Bakery avoided the local market restrictions of most fresh baked goods by refrigerating the product, vacuum sealing it, and distributing it nationally, a strategy that allowed Super Bakery to build a national presence in what was formerly a fragmented industry.

Third, Super Bakery developed numerous ways of serving and supporting its customers such as distributors and school systems. They included helping customers obtain lower prices by acquiring government-supported commodities (flour, butter, and fruit), cooperating with noncompeting suppliers by providing complete prepackaged meals to schools, and helping distributors reduce inventory carrying costs and avoid stockouts through reliable, just-in-time delivery.

Fourth, Super Bakery reduced capital investment and overhead expense by contracting out major functions of the business. Super Bakery does not manufacture, sell, or distribute its products. It is a virtual corporation.

These strategies have helped Super Bakery grow annual sales at an average rate of 20% to 30% for the past eight years. In 1994, sales reached $8.5 million with a staff of nine full-time employees—a very high rate of productivity per employee. Operating profits have been twice the industry average, and the company also enjoys a very high return on equity and return on net assets. These superior levels of performance can be expected in companies that reduce their investment in payroll expenses and fixed assets, but there also are risks in implementing the lean structure of a virtual corporation.

BREAKING OUT SERVICE ACTIVITIES IN A VIRTUAL CORPORATION

The first decision a virtual corporation's managers need to make is which aspects of corporate activity must be performed in-house and which jobs can be contracted out. When management opts to outsource business functions, it can create serious difficulties. The loss of control of these functions and the problems of coordinating activities need to be considered carefully. The service aspects of a manufacturing business sometimes may be more important, strategically, than the production aspects. Super Bakery was able to control product quality by supplying the dough, which contained its unique product formulations, to manufacturers. The contracted bakeries simply add water to the mix and follow the baking instructions.

The service elements of the business presented greater variability and risk. Management carefully researched which service activities were most important to customers before

deciding which functions to contract out. Super Bakery's product is just one component of the mix of benefits that are provided to customers. There are other important services for customers (see figure), most of which are part of the order management process. The order management cycle had the biggest influence on customer satisfaction. Management believed that all of these activities did not have to be performed by Super Bakery, but the company had to be able to control and coordinate these services.

Upstream activities tend to drive the downstream activities in a process. Upstream activities such as order entry, pricing, and scheduling drive downstream activities such as production, order picking, packing, and delivery. Management wanted to control the upstream planning activities as well as the coordination of each customer's order. Management also wanted to control billing and collections. It decided that selling, production, warehousing, and shipping could be contracted out if management retained overall control over the planning and tracking of these activities in the order management process.

Relationships with outside brokers, manufacturers, and trucking companies could make or break the company because they stand between the company and its customers. The brokers in the different parts of the country would have to do an effective job of promoting and selling the company's products to distributors and school systems. The various

Table 1. SUPER BAKERY'S NONFINANCIAL PERFORMANCE MEASURES

Service Activity	Measure (Number Of)	Reported By	Source
Order entry speed	Customer complaints	Customer	Telephone complaints, customer survey
Order accuracy	Correct orders	Customer	Telephone callbacks, (computer tracked)
Order fill rate	Complete orders	Customer service	Customer order, packing list (computer tracked)
On-time delivery	Hours early/tardy from promised delivery date	Common carrier, customer	Common carrier, delivery confirmations, customer complaints
Accuracy of shipments	Correct shipments	Customer service	Customer order, packing list (computer tracked)
Product quality	Customer product	Customer, R&D	Telephone complaints, customer survey, plant inspections
Total order filling cycle time	Days from order receipt to delivery	Customer service	Order entry date to delivery confirmation
Damaged shipments	Damaged orders	Common carrier, customer, accounting	Credit memos
Incorrect billing	Pricing errors, customer billing complaints	Customer, accounting	Customer invoices

independent bakeries that manufactured the products would have to meet Super Bakery's quality standards. The trucking companies would have to meet on-time shipping and delivery requirements. Some of these concerns were addressed by clarifying the performance standards with contractors in painstaking detail. Clearly defined requirements were built into contracts with outside vendors, but discrepancies often still occur between what is agreed to on paper and day-to-day operations.

Companies run a risk when they let outside brokers or common carriers interact with customers. Most external contractors will not sign service guarantees, and they usually refuse to pay penalties or fines for failing to meet service standards. The key issue from a service perspective is what influence the contractor is having on the customer. That is why a constant stream of feedback from the field is essential for evaluating performance.

CREATING A PERFORMANCE REPORTING SYSTEM

Management wanted a performance reporting system that would provide a balance of nonfinancial and financial measures. The nonfinancial measures were needed to track customer service and satisfaction levels, and the financial measures were needed to track the cost of filling orders and serving customers.

The core process that most influenced customer satisfaction was the order management cycle. For Super Bakery, these steps included order entry, credit clearance, costing, pricing, scheduling, procurement, manufacturing, shipping, billing, and collection. When some of these functions are outsourced, it is important to retain control over the administrative process that links these interdependent functions together. Super Bakery developed nonfinancial measures of these processes that reflected customers' concerns (Table 1).

Some of these measures needed to be collected and tracked by Super Bakery's staff; others were collected from customers or contractors. To keep track of these performance measures, a relational database was created at Super Bakery. One of the advantages of contracting out functions is that managers no longer need to worry about measuring processes: They only need to measure outcomes. The problem of managing processes is turned over to the contractor.

Most of the activities in the order-filling cycle are communicated by fax and telephone; others are coordinated by on-line modem. Front-line, customer service employees at Super Bakery take product orders from distributors and school systems; quote prices; schedule production at the independent bakeries in New York, Indiana, and California; and set delivery dates. Using an activity-based costing (ABC) system, the bakery company constructed a detailed breakdown of the costs incurred in filling each customer's order.

IMPLEMENTING AN ACTIVITY-BASED COSTING SYSTEM

The wide variation in the cost of serving different customers was a major concern. For example, freight costs varied for each customer depending on the size of the order and the shipping distance. The contracted cost for manufacturing the donuts was higher for the plant in California than the plants in New York and Indiana. There also were numerous other variations in the cost of serving different customers. The company was faced with the choice of spreading product and service costs over the entire customer base and charging uniform prices or assigning the exact cost of processing each order and building these costs into the price charged to each customer.

In most firms, a standard costing system is used to allocate costs to products and to price customers' orders. Standard costs are the agreed target cost of direct labor and materials that go into making products. They also include the overhead operating expenses, such as selling, advertising, warehousing, shipping, and administration, which also are expended in servicing customer accounts. Under a standard costing system, these overhead expenses are allocated to products and spread over the entire customer base. Each customer's order is assumed to cost the same average amount to process.

The fallacy of the standard costing system at many companies, including Super Bakery, is that very few customers' orders consume the same amount of resources. At Super Bakery, the profit on each sale varied significantly. Assigning costs accurately to each account would allow the company to assess the profitability of different customers. Making customers pay for what they received is also a fairer arrangement. Few companies recover the exact cost and expenses of serving customers in the sales price charged. In many businesses, profitable accounts subsidize unprofitable ones, and management is none the wiser. In order to track costs more closely, management made the investment in a more sophisticated information and accounting system.

The management of Super Bakery decided to install a detailed ABC system, first, because it would allow management to track the profitability of each customer's account and, second, because it would allow management to track the performance of outside contractors more closely.

One of the main differences between Super Bakery's ABC system and other manufacturers' ABC systems is that the main focus is placed on capturing costs by customer order rather than by product. Overhead service expenses tend to be high and variable, while contracted manufacturing costs were fixed.

With most ABC systems, the consumption of costs is either directly recorded as costs occur (e.g., specific freight charges) or recorded indirectly by means of a cost driver. When a cost driver is used as the basis for assigning costs, management still is using an allocation method. It is an estimated cost, not the actual cost. Well-chosen cost drivers, however, usually are superior to traditional standard cost bases for allocating costs, such as percent of direct labor or percent of total sales. For instance, under a standard cost system many companies allocate order handling charges on a percent of sales basis. In other words, the greater the value of the sales order, the higher the order handling costs that will be charged to the customer. The problem with this standard cost accounting practice is that the amount of time and expense spent processing an order usually is the same whether the order is for 200 or 2,000 cases. The cost driver is not the number of cases ordered but the number of separate sales orders that have to be processed. In this age of just-in-time delivery, many companies would prefer to place a lot of small orders rather than book one large

Table 2. SUPER BAKERY'S ACTIVITY-BASED COST SYSTEM

Cost/Revenue Activity Center	Broken Out By	Direct/Allocated	Measure/Cost Driver
Product cost	Product	Direct	Contracted per case price for each product line
Freight and storage	Order	Direct	Actual freight and storage costs per order
Brokerage (selling)	Order	Direct	Flat 5% of sales
Advertising	Product	Allocation	Percent of advertising budget by projected cases sold
Promotion	Product	Direct	Actual cost by product line
Trade shows (local)	Customer	Allocation	Actual cost divided by projected cases sold
Trade shows (national)	Product	Allocation	Budgeted cost divided by projected cases sold
Samples	Customer	Direct	Actual cost per case
Bonds	Customer	Allocation	Percent of projected cases sold
Discounts	Order	Direct	Actual discount per order
Interest	Customer	Direct	Per payment history (cost of capital)
Order department	Order	Allocation	Budgeted (historical) cost allocated per order
Sales management	Customer	Allocation	Budgeted cost allocated by time spent in each territory
Raw product	Product	Direct	Per product case by formula
Research and development	Product	Allocation	Budgeted cost allocated by time for each product line
Revenue (price)	Product	Direct	Accumulated costs plus targeted profit margin for each product line

order. By assigning costs based on the number of orders that have to be processed, instead of by the dollar value of the order, a much more accurate cost of order processing can be calculated for each customer.

At Super Bakery, actual costs are captured and assigned directly to a customer's account whenever possible. Some of these charges are based on the historical cost of serving particular customers. Over the years, Super Bakery has accumulated a great deal of cost information on serving different customers. Cost drivers are used to assign costs when the historical cost is unavailable or direct costing is impractical or impossible. In some cases, these costs are based on an estimated percentage of the budget.

A listing of Super Bakery's cost/revenue centers and cost drivers for filling customer orders and assigning costs is provided in Table 2. By accurately capturing and accumulating these costs, management can calculate the true costs of processing each order and servicing a particular customer's account. Super Bakery is able to price orders accurately, recoup the costs of serving its customer, and feel confident that a targeted amount of profit is being earned.

The cost information needed to be available to customer service employees on easily accessible computer screens or templates. Customer service employees have to be able to compute the cost of filling orders, quote accurate prices, and communicate dependable delivery dates. The development of such a system required some experimentation. Front-line employees provided their feedback and suggestions on how the information could be presented on the computer screen in a more convenient form.

If costs are broken out and assigned accurately when they are incurred, they can be manipulated in a number of different ways to evaluate the profitability and performance of different components of the business. Through the use of a relational database, Super Bakery's management is able to examine costs by product, customer, order, broker, territory, department, manufacturer, and common carrier. It uses responsibility centers and cost centers to assign costs in interdepartmental transactions. The company divides up the functions it performs or contracts out and assigns them to several responsibility centers: marketing, R&D, production, and office and finance. These responsibility centers are further subdivided into various subcenters such as sales, accounting, information systems, order processing, customer service, and so on. Given the company's small staff, some employees wear several different hats in performing these in-house functions. Each responsibility center has its own profit-and-loss statement, and internal charges are made between them for work that is performed by one department on behalf of another. This procedure does not include formal invoicing and payment, but journal entries are made on the books in order to assign costs to the user of the service. Outsourced functions are treated as separate, arm's-length responsibility centers.

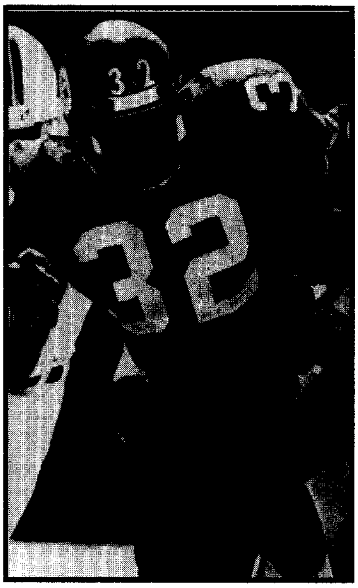
Virtual corporations that outsource functions need a detailed information system for controlling costs and evaluating the profit on each sale. Such a system is especially important when expenditures on these functions are in the hands of outside contractors. An ABC system can be used to control the behavior of contractors. The examples that follow show how the management of Super Bakery controls contractors' spending of the company's resources.

CONTROLLING CONTRACTORS WITH ABM

In virtual corporations, a great deal of money is spent on service functions that are performed by an outside company. In other words, more of the company's budget is outsourced—an arrangement that can result in abuses. External contractors operate with considerably more freedom than company employees. They do not operate under the direct supervision of company management. External contractors—salespeople, trucking firms, warehouse companies, information service companies, and payroll services—sometimes operate very inefficiently. They can make decisions that make their own jobs easier but squander company resources; therefore, controls need to be imposed on spending.

Independent sales brokers sell Super Bakery's products throughout the United States, and these brokers also represent a variety of noncompeting companies and products. The independent sales brokers have looser ties to the company than any of the outside contractors. The regional sales managers mainly judge the performance of brokers from the feedback they receive in sales reports of orders booked. The brokers, who are on straight commission, sometimes use free samples, price discounts, and advertising allowances to push deals through with distributors. These incentives are supposed to be used to increase the size of customers' orders so that the profit from the orders exceeds the additional selling expense.

Super Bakery's regional sales managers look carefully at the cost of servicing each account and whether to approve brokers' requests for promotional allowances. They are able to access an electronic file containing the volume and value of each customer's sales, past promotional allowances, and servicing costs (credit history, shipping costs, etc.). On some occasions, promotional allowances requested by brokers have exceeded the contribution margin on the account. The management information and activity-based costing systems are used to evaluate the profitability of each account and whether to approve a broker's requests for promotional allowances.



Franco Harris

Shipping performance and freight costs are another area of critical importance. There is a tremendous amount of variation in the quality and cost of service provided by different trucking companies. Over the years, Super Bakery has used 12 different common carriers. Today it uses three companies that offer the company the best rates and service in different parts of the country.

Most common carriers have regularly scheduled routes and stops in particular locations. For instance, they may deliver in Raleigh, N.C., on Tuesdays, and Hartford, Conn., on Thursdays. Many common carriers will deliver full trailer loads any day of the week, but they will not deliver less than trailer loads, unless it is a scheduled stop, without charging a price premium. A lot of Super Bakery's business consists of less than trailer load shipments. Super Bakery must consolidate shipments to particular locations to make up full trailer loads or conform to the common carriers' schedule for less than trailer load shipments. Management and employees must monitor the shipping performance and freight costs of the different carriers carefully. They need to make sure that they are not overcharged for different shipments. Super Bakery uses historical customer information to calculate the exact cost of transporting a specified number and type of donuts to a particular location. In this way, actual freight can be built into the price charged to the customer for each order. Any variances in these shipping charges are taken up with the common carriers.

Another instance where Super Bakery uses historical cost information is in the control of overdue receivables. As shown in Table 2, Super Bakery keeps extensive information on each customer's payment history and the average number of days invoices are past due. This information is used to assess interest charges for carrying a particular customer's account. These interest charges, based on Super Bakery's cost of capital, are figured into the price that is quoted to customers for future orders. If the customer demonstrates that it can pay within Super Bakery's net 30 terms, these charges are dropped.

Brokers also have access to customers' files and can see which customers have not paid their last invoice. They know that new orders will not be accepted until previous invoices have been paid. Brokers do not receive commission checks until customers have paid their invoices. For this reason, brokers have an incentive to follow up with overdue customers, which reduces Super Bakery's collections' problems.

In some instances, delays in the receipt of payments occur because school systems only cut checks on a particular day each month. If this day is missed, vendors must wait until the same day the next month to get paid. Here it is critical to get in step with the customer's billing and payables cycle. For the larger accounts, Super Bakery's front-line service employees place a call to the customer's payables clerk a few days prior to the day when checks are printed to make sure the invoice is accurate and can be paid on time.

VIRTUAL ADVANTAGES

During the rapid growth of Super Bakery, management's major concern has been making sure that staff and expenses do not grow more rapidly than sales revenues and profits. For Super Bakery the advantage of contracting out manufacturing is that it obviates the need for investment in plant, equipment, and factory personnel. It also eliminates concerns of capacity utilization and meeting minimum breakeven production levels.

Arm's-length relationships with external contractors may sometimes give companies greater control over the performance and cost of certain functions than when these functions are handled internally. Moreover, contracted costs often are fixed rather than variable. If the costs exceed a set amount, the contractor must absorb the loss. Management can withhold payment of invoices from contractors who exceed agreed prices for manufacturing, warehousing, or shipping. Nevertheless, when sales, manufacturing, and distribution are outsourced, the performance of brokers and contractors must be monitored. A well-designed performance reporting and costing system is needed to evaluate their performance and control expenses. The systems put in place at Super Bakery provide useful guidelines for other virtual corporations. ■

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[1]See "The Virtual Corporation," *Business Week*, February 8, 1993, McGraw-Hill, Inc., New York, N.Y.