

The Speed-Reading Organization

Ever since Activity-Based Costing turned out not to be as easy as A-B-C, businesses have longed for a simpler costing model. Time-Driven Activity-Based Costing may be the answer.

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IMAGINE A FINANCIAL SERVICES COMPANY that wants to have accurate customer, product, and branch P&Ls within several days of its monthly close when it has more than 3 million customers, over \$2 billion in annual revenues, thousands of employees, and more than 200 offices. Or a national retailer that wants each of its more than 750 local store managers to have a detailed SKU profit-and-loss each month for the 45,000 SKUs in each store (a total of 250,000 SKUs across all outlets) and tens of millions of customer transactions each month.

These situations are not hypothetical or science fiction. They represent the actual deliverables to companies that scrapped their conventional expensive, slow, and unresponsive activity-based costing systems in favor of a new approach that we describe in our recent book, *Time-Driven Activity-Based Costing*. The financial services company enhanced its pricing and management of customer relationships and eliminated hundreds of millions of dollars of unused capacity, without compromising customer service. The retailer's store managers used their monthly SKU P&L reports to customize their SKU assortment and space allocations to local buying behavior and to adjust staffing patterns. These actions generated millions in profitability improvements each year.

Activity-Based Costing (ABC), introduced in the 1980s, seemingly offered a great new opportunity for companies to obtain more accurate costs of their processes, products, and customers. But much of the promise was never realized because of the high cost to estimate and maintain ABC systems for large enterprises. Some companies, such as the financial services company described above, employed more than a dozen employees to maintain ABC systems, and the ABC software took many weeks to collect data and calculate product and customer profits and losses each month. In a survey of adoption of management tools, activity-based costing ranked below the median, with only a 50 percent adoption rate. For a system that gives companies insights, not otherwise available, into the cost and profitability of products, processes, services, and customers, the low adoption rate was surprising and troubling.

THE TIME-DRIVEN ABC APPROACH

The problems with the conventional approach to activity-based costing arose from the need to assign most resource expenses to activities based on interviews and surveys, a process that was time-consuming, expensive, and often inaccurate. Time-Driven ABC skips entirely the stage of driving resource costs to activities and therefore eliminates the need to allocate a department's costs to the multiple activities it performs and conventional ABC's costly and subjective surveys of employees' time allocations. It also introduces a new feature, time equations, to handle the diversity and complexity of transactions performed to purchase, produce, sell, and distribute products and services to customers. To summarize, Time-Driven ABC integrates the information that companies now have online in their ERP and data warehouse systems with an elegantly simple but powerful model



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of business process costing to produce detailed profit-and-loss reporting — by transaction, product, customer, channel, and region — for even the most complex enterprises.

Time-Driven ABC achieves its simplicity by requiring that only two parameters be estimated for each department or process:

1. The cost rate of supplying capacity.
2. The consumption of capacity (unit times) by each transaction, product or customer.

Take, for example, a customer service department with total operating expenses of \$567,000 per quarter. This amount includes the customer service personnel, their supervisors, and the cost of the department's information technology, telecommunications, and occupancy.

The capacity cost rate is defined as shown below:

$$\text{Capacity cost rate} = \frac{\text{Cost of capacity supplied}}{\text{Practical capacity of resources supplied}}$$

In our example, the cost of capacity supplied is, of course, the \$567,000 per month. To estimate the practical capacity, the TDABC team identifies the quantity of resources (typically personnel or equipment) that actually perform work.

Assume that the department employs 28 frontline people (this doesn't count supervisors or support staff). Each frontline employee works an average of 20 days per month (60 days per quarter), and is paid for 7.5 hours of work each day. Net of time consumed in breaks, training, and education, each employee has a practical capacity of about 22,500 minutes per quarter (375 minutes per day times 60 days per quarter). With 28 frontline employees, the department has a practical capacity of 630,000 minutes. The cost rate (per minute) of supplying capacity, the first estimate for a TDABC model, can now be simply calculated:

$$\text{Capacity cost rate} = \frac{\$567,000}{630,000 \text{ minutes}} = \$0.90 \text{ per min.}$$

In general, estimating the practical capacity for employees, equipment, and technology resources is as straightforward as the above example, although special treatment (described in our book) is required for resources handling peak or seasonal capacity.

The second estimate required for the Time-Driven ABC model is the capacity required — in this and most cases, time — to perform each transaction. Conventional ABC uses a transaction driver whenever an activity such as setting up a machine, issuing a purchase order, or processing a customer order takes about the same amount of time. Time-Driven

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ABC, instead of using such transaction drivers, simply has the project team estimate the time required to perform each of the department's transactional activities. The time estimates can usually be obtained by direct observation or data collection. And unlike the percentages that employees subjectively estimate for a conventional ABC model, the capacity consumption estimates in a time-driven model can be readily observed and validated.

Returning to the numerical example, suppose that the TDABC team obtains estimates of the following average unit times for three customer-related activities:

Handle customer order	8 minutes
Process customer complaint	44 minutes
Perform credit check	50 minutes

The team calculates the cost driver rate for the three types of activities performed in the customer service department by cross multiplying the capacity cost rate with each activity's estimated unit time:

Activity	Unit Time (minutes)	TDABC Cost Driver Rate @ \$0.90/minute
Handle customer order	8	\$ 7.20
Process customer complaint	44	39.60
Perform credit check	50	45.00

Alternatively, we can replace the three customer service activities in the conventional ABC model with a simple time equation for the department:

$$\text{Customer service time (minutes)} = 8 \times \text{number of orders handled} + 44 \times \text{number of customer complaints} + 58 \times \text{number of customer credit checks}$$

A summary report of the cost of performing the three activities during the recent quarter is shown below:

Activity	Unit Time	Quantity	Total Minutes	Total Cost
Handle customer order	8	49,000	392,000	\$352,800
Process customer complaint	44	1,400	61,600	55,440
Perform credit check	50	2,500	125,000	112,500
Used Capacity			578,600	\$520,740
Unused Capacity (8.2%)			51,400	46,260
Total			630,000	\$567,000

The analysis reveals that only about 92% (578,600/630,000) of the practical capacity of the resources supplied during the period was used for productive work; hence only 92% of the total expenses of \$567,000 are assigned to customers during this period. By specifying the times required to perform each instance of an activity, the organization gets a valid signal about the cost and the underlying efficiency of each activity as well as the quantity (51,400 hours) and cost (\$46,260) of the unused capacity of the resources supplied to perform the activity.

Time equations enable managers to enhance the above model by relaxing the assumption that each instance of a transaction or activity is identical. Specific characteristics of individual orders, such as whether the customer is existing or new, whether the order uses a listed or a quoted price, or whether the customer requests standard or expedited delivery, lead to variation in order entry times.

For example, consider the process of entering a customer order, assumed to take 8 minutes in the above example. One company had already done a map, shown in Exhibit 1, of the process used by the inside sales department when it received an incoming customer order.

The data for the entire system of time equations come from the company's ERP system. The Time-Driven ABC software sits on top of the company's ERP system, extracting transactional information automatically and calculating the capacity demands, customer order by customer order.

If the company subsequently determines other factors that help explain variations of inside sales process time, it easily incorporates them into the time equation by adding new terms. For example, if rush orders take an additional 10 minutes to process, simply add the following term "+ 10 {if RUSH}" to the above equation. Thus, a manager can update the Time-Driven ABC model simply and continually as analysts learn more about the systematic factors that cause process variation or as the company adds new features, channels, and services.

Managers can also update the capacity cost driver rates as the cost and availability of resources supplied changes. They can adjust the time equation parameters when the efficiency of the activity improves due to quality, continuous improvement efforts, or the introduction of new technology. In this way, sustainable improvements in processes get quickly reflected in lower cost numbers that incorporate the reduced resource times required to process transactions and other resource demands.

The simplicity, speed, and power of Time-Driven ABC make entirely new applications feasible. In fact, several private equity firms have developed a capability to do "fast track TDABC" during their due diligence process of investigating potential company purchases. The private equity firm acquires several months of financial data and product and customer transaction data files. It enters these data into an existing TDABC industry model, which incorporates standard product and customer transaction times. This process takes only a week or two once the data become available from the target company. After run-

PROCESS MAP FOR SALES ORDER ENTRY

The capacity demands on the inside sales department by a particular order can be easily incorporated into a single time equation:

$$\begin{aligned} \text{Inside sales time} &= \text{order entry time} + \text{new-account setup time} + \text{quoting time} + \text{order confirmation time} \\ &= \text{receive order} + \text{enter order} \\ &\quad + \text{account setup (if new account)} \\ &\quad + (\text{identify need} + \text{contact vendor} + \text{quote price}) \text{ (if quote needed)} \\ &\quad + \text{confirm order} \\ &= 2 \text{ minutes} + 2 \text{ minutes} \times (\text{number of line items}) \\ &\quad + 5 \text{ minutes (if new account)} \\ &\quad + 1 \text{ minute (if quote needed)} + 5 \text{ minutes (if contact vendor)} \\ &\quad + 6 \text{ minutes} \times (\text{number of line items in quote}) \\ &\quad + 1 \text{ minute} \end{aligned}$$

ning the TDABC model to calculate individual product and customer profitability, the firm quickly identifies opportunities for rapid transformation of unprofitable products and customers. It quantifies the benefits from short-term profit improvements, enabling it to value the target company based on cash flow realizable within six months of purchase. This knowledge gives them an enormous pricing advantage over its competitors who must bid based only on historical profits and cash flows. It is a new technology for the due diligence process, made possible by the speed of building Time-Driven ABC models.

Companies employing lean management and Six Sigma continuous improvement programs also find that Time-Driven ABC complements their efforts beautifully. Lean management focuses on improving the quality and responsiveness of business processes. Time-Driven ABC adds cost information for lean management teams, enabling them to cost the transactions and processes that consume capacity, quantify the benefits from implementing improvement initiatives, and learn where unused (wasteful) capacity exists and can be eliminated.

The Time-Driven ABC model also allows companies to introduce a new, analytic, resource-based budgeting process. The new approach links high-level strategic plans with budgets for the resources — people, equipment, space, and technology — in operating and support departments. It allows an automated, fact-based analytic budgeting model to replace the tortuous and politically charged budget negotiation process. The strategic plan drives budget decisions, not negotiation and sandbagging.

In summary, Time-Driven ABC offers managers the following powerful benefits:

- An accurate strategic cost and profitability model that is fast, inexpensive, and easy to build;
- Integration with the detailed transactional data now available from ERP and customer relationship management systems;
- A costing model based on transactions specific to the characteristics of individual orders, processes, suppliers, and customers;
- A model that identifies opportunities for process efficiencies and capacity management;
- Forecasts of resource demands, allowing companies to budget for the capacity needed to handle the sales and production estimates in their strategic plans;
- A model that is easily scalable across highly diverse and complex enterprises via scalable applications software and database technologies;
- A model that is easy and inexpensive to update as changes occur in process efficiencies and process costs; and
- A general approach for cost and profitability management that can be used in any industry or company with complexity in customers, products, channels, segments, and processes and large expenditures for people and capital.

Companies no longer have to operate with faulty or costly instrumentation when attempting to measure the cost and profitability of their processes, products, customers, and regions. The Time-Driven Activity-Based Cost innovation offers accurate and actionable economic information affordable to small businesses and scalable to the requirements of the largest global enterprises. 