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# Zippo Lights Up with ABC/M

John Miller, Andrew Muras, and Robert Vecchio

Developing a product and customer profitability system can appear daunting, because of the complex software systems required, the long development times, and the often high costs. A Fortune 100 company can afford to throw millions of dollars and lots of people at the problem, but what about a medium- or smaller-size organization that doesn't have that level of resources at its disposal? Or a larger company on a very limited budget? Can a relatively inexpensive system that provides the necessary data be developed? The quick answer is yes, and the example is Zippo.

In 2003, Zippo was facing several major business issues:

- standard costs that were not reflective of actual product manufacturing costs;
- minimal visibility on product profitability;
- minimal visibility on manufacturing process cost and capability;

*Zippo Manufacturing wanted a product- and customer-profitability reporting system, but it was leery of the potential costs and complexities. By using a few simple principles to get results quickly and inexpensively, Zippo soon had a working and effective system. Partly as a result, Zippo was recognized in 2005 as a best practice organization for Calculating and Reporting Customer Profitability by the APQC, a member-based nonprofit for process and performance improvement.*

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- no visibility on customer profitability; and
- no visibility on sales, marketing, and administrative process/activity cost and capability.

In addressing these business issues, Zippo elected to use the activity-based costing/management (ABC/M) management tool. ABC/M has proven well suited for accurately tracing costs to processes/activities, products, and customers, and for identifying cost drivers and performance measures. These are prerequisites for developing product and customer profitability and reporting systems that are easily scalable to different-

size organizations. Unfortunately, this scalability comes with a price. Real-world implementations can quickly become overly complex and unmanageable—not to mention unsupportable after completion. However, following a set of simple processes and techniques will increase the chances for success and

decrease the costs of both the implementation and ongoing sustainment.

## KEEPING IT SIMPLE

A simple rule to begin with is to not start without some level of executive support and buy-in. Life's too short to joust windmills. Any meaningful level of support is enough to get started. The approach discussed in this article helps further solidify executive buy-in by producing rapidly generated results and potential cost savings initiatives. Management begins to see the payoffs fairly quickly. Elements necessary for keeping it simple, getting rela-

tively quick results, and providing the level of sophistication required to make appropriate decisions are discussed in the rest of this section.

First, *know your end point*. This seems easy and relatively common sense, but it's surprising how often the end point becomes "muddled" as one wades through meetings to develop management buy-in, select the internal team, and define requirements. For example, is the true goal for the project customer profitability or is it improving the supply chain and demand forecasting? Is product profitability the end result or is it understanding order and product variations? Is the system for not only product and customer

profitability, but also to highlight cost drivers and non-value-added (NVA)? ABC/M can handle all of the above, if they're considered when designing the implementation process.

The essential question in knowing the end point: can one visualize a single-page chart or report as the final product? For example, consider Exhibit 1, which was used early on with Zippo management to show the types of data that would be collected and reports they would receive from the profitability system. Not only did this chart allow management to get a better grasp on where the project was going, but it also elicited ideas on how the data would be used afterward.

Visualizing and presenting the end point has a number of other advantages in that it forces early project planning, scheduling, scoping, and identification of all the players who need to be involved in data collection and analysis (e.g., marketing, sales, customer support, etc.). See Exhibit 2 for examples of Zippo's implementation of this part of the process.

The second element in the process is *keep it simple*. This does not mean adopting a simpleton approach that lacks credibility. Instead, it refers to an approach such that at every decision point (and there can be hundreds), the first consideration is how to keep it simple in getting to the stated goal. It's usually

Exhibit 1

Sample Customer Profitability Report

Customer xxxx	
Standard Profitability Reporting Format	
Profit and Loss Statement	Key Operating Statistics
<b>Sales</b>	<b>Units Sold</b> #
- Type 1 Sales \$	<b>Average Sales Price*</b> \$
- Type 2 Sales	<b>Gross Margin</b> %
- Credits & Returns (\$)	<b>Cost to Serve/Sales</b> %
<b>Net Sales</b> \$	<b>G&amp;A/Sales</b> %
<b>Product Cost</b>	<b>Operating Margin</b> %
- Type 1 Costs \$	<b>Operating Income per unit*</b> \$
- Type 2 Costs	
<b>Total Product Cost</b> \$	
<b>Gross Profit</b> \$	
<b>Cost to Serve</b>	
- Promotions/Advertising \$	
- Commissions	
- Customer Service	
- Brand Development/Protection	
- Sales Calls	
<b>Total Cost to Serve</b> \$	
<b>General &amp; Administrative Expense Allocation</b>	
- Finance \$	
- Information Technology	
- Legal	
<b>Total G&amp;A Expenses</b> \$	
<b>Total Operating Expenses</b> \$	
<b>Operating Income</b> \$	
	<b>Trends and Measures</b>
	<b>Sales Trend</b> +% ↑
	<b># of Products Purchased</b> # ↑
	<b>Backlog \$'s</b> \$ ↑
	<b># of Returns</b> # ↑
	<b>\$ Amt 60+ Days Receivable</b> \$ ↓
	<b># Special Orders/Requests</b> # ↓
	<b>Average Order Size</b> # ↑
	<b>Order Frequency/Wk</b> # ↻

**Exhibit 2****Zippo Implementation of *Know Your End Point***

Zippo implementation:

- Identified a cross functional team to lead the effort, composed of representatives from Accounting, Production, and IT
- Planned for department heads to sign off on their individual activity based data to help eliminate any potential “this is not my data” issues later in the project.
- Developed management buy-in of final report formats and scheduled periodic updates to forestall any issues.

much easier to go back and add complexities and detail later if required. It’s not necessary to shoot for Six Sigma or multiple-decimal-point accuracy in collecting data, particularly early in the project. Eighty to ninety percent is typically sufficient for most decision making and can save substantial amounts of time.

Part of the “keep it simple” philosophy also focuses on understanding the process and the activity-based methodology and not focusing on software at the onset. A major failure mode

of many activity-based implementations is an overemphasis on the software solution at the onset of the project, often before all requirements and data needs are fully understood. Such an emphasis can lead to substantial up-front purchasing and training costs, and lots of wasted time.

ABC/M is not a software project, but rather a process-oriented and decision-making approach—one in which software can eventually play an important element role. In the Zippo case, the internal project

team decided to use BAE Systems’ FastTrack.ABM™ approach and free ABC software. Enterprisewide software solutions would come later in the project, after they had developed initial results and understood their requirements for an ABC package. Exhibit 3 lists examples of Zippo’s implementation of this part of the process.

The third element is *produce quick wins*. Nothing derails a program faster than waiting many weeks and months before any results can be shown. A pilot project can be an essential part of this approach, not only for producing quick results that help continually promote buy-in, but also to quickly train the internal team in ABC/M data gathering and analysis techniques. An approach focused on quick wins also promotes an aggressive and fast-moving implementation schedule.

The quick wins should include costing results, potential process improvement ideas, and insights for improved decision making. An interesting outcome of activity-based implementations is that even the costing side of the analysis (i.e., ABC) uncovers many different process improvement recommendations. These can range from changes in accounting data/depreciation schedules to actual changes in production methods. It’s important to capture and promote these process improvement opportunities as early and often as possible for continued management support. Exhibit 4 summarizes Zippo’s implementation of this part of the process.

**ZIPPO OVERVIEW**

Founded in 1932, Zippo manufactures lighters and accessories. Through district represen-

**Exhibit 3****Zippo Implementation of *Keep It Simple***

Zippo implementation:

- Used consultants to train internal team in BAE Systems’ FastTrack approach and ABC software tool early on to improve understanding of activity based approaches and data needs.
- Used FastTrack software to develop all ABC models in an Access database and then linked with current ERP system—deciding to evaluate larger software packages after initial system completed, thus allowing better understanding of long-term enterprise requirements.

## Exhibit 4

### Zippo Implementation of *Produce Quick Wins*

Zippo implementation:

- Employed FastTrack approaches to rapidly collect data and generate rapid results—creating functional area ABC models within a couple of days—which helped keep the momentum going for the project.
- Used workshop approaches to gather data from people who actually did the work—which promoted buy-in of the data and improved understanding of the ABC/M process across the organization.
- Planned a goal-oriented approach to progress to ABM and process improvement analyses after ABC and customer profitability analyses were in place.

tatives, the company sells products to wholesalers, who in turn sell to retail companies. A minimal amount of online purchasing of products occurs directly to consumers. With products sold in more than 120 countries, Zippo has produced more than 400 million windproof lighters since the company's inception, and the Zippo brand has evolved into one of the most recognized in the world.

Zippo counts approximately 3,500 global customers, including both wholesalers and retailers. Customers buy from 16,000 products (20,000 SKU's) depending on the time of the year, which gives the organization approximately 3,600 orders per month. Distributors/wholesalers account for about 80 percent of the company's customer base, direct retailers account for 19 percent, and about 1 percent of the customer base is national accounts. The company's customer classification includes:

- master distributors,
- distributors/wholesalers,

- national accounts,
- direct retail,
- Internet retail accounts, and
- catalog retailers.

The chief financial officer of the company initially introduced the concept of activity-based costing by adding it to the list of strategic initiatives and assigning it a specific priority. At that time, the company analyzed gross margins on the basis of standard cost. The standard cost calculated overhead as a multiplier of direct labor. The company knew that gross margins were not accurately reflected at the granular level of product/customer, and there was no visibility to customer profitability at an operating margin level.

In 2003, Zippo initiated its ABC/M implementation and partnered with external resources to support them with the initiative. Management's immediate need was to understand at a granular level which customers and products were most profitable to the company. Management was keenly aware

that the company had profitable products and customers, but it also had "not-so-profitable" products and customers. Zippo understood that the 80/20 rule of profitability applied to the company—that is, 80 percent of the organization's profits came from just 20 percent of its customers. The company's ABC/M process was implemented in a phased approach and has continued to be refined and streamlined as future opportunities for improvement were identified.

### PROJECT PLAN

The initiative was implemented via a phased approach.

- *Phase 1* focused on product profitability, and ABC was implemented in manufacturing. This first phase was required to enable Zippo to more accurately report the cost of its individual products.
- *Phase 2* focused on customer profitability, and ABC was implemented in sales, general, and administrative (SG&A). During Phase 2, the Zippo's full ABC model was completed.
- *Phase 3* focused on activity-based management, and process improvements were implemented selectively in manufacturing and SG&A.
- *Phase 4* focused on the transition to fully integrate its ABC cost data from the BAE Systems' Fast Track software application to its enterprise resource planning (ERP) system. This integration allows for rapid generation of customer profitability reports and analysis at multiple levels of product/customer profitability. During

this phase, the company will transition to commercial ABC software, permitting real-time analysis of customer profitability.

At Zippo, a continuous improvement group is responsible for analyzing the data provided by the ABC/M effort and providing information to finance, sales, marketing, and manufacturing. The calculation of activity-based costs is a joint effort between cost accounting and manufacturing, both reporting, for purposes of ABC, to the chief financial officer. Exhibit 5 shows the responsibility and information flow for customer and product profitability at Zippo.

**PRODUCT COSTING ANALYSIS**

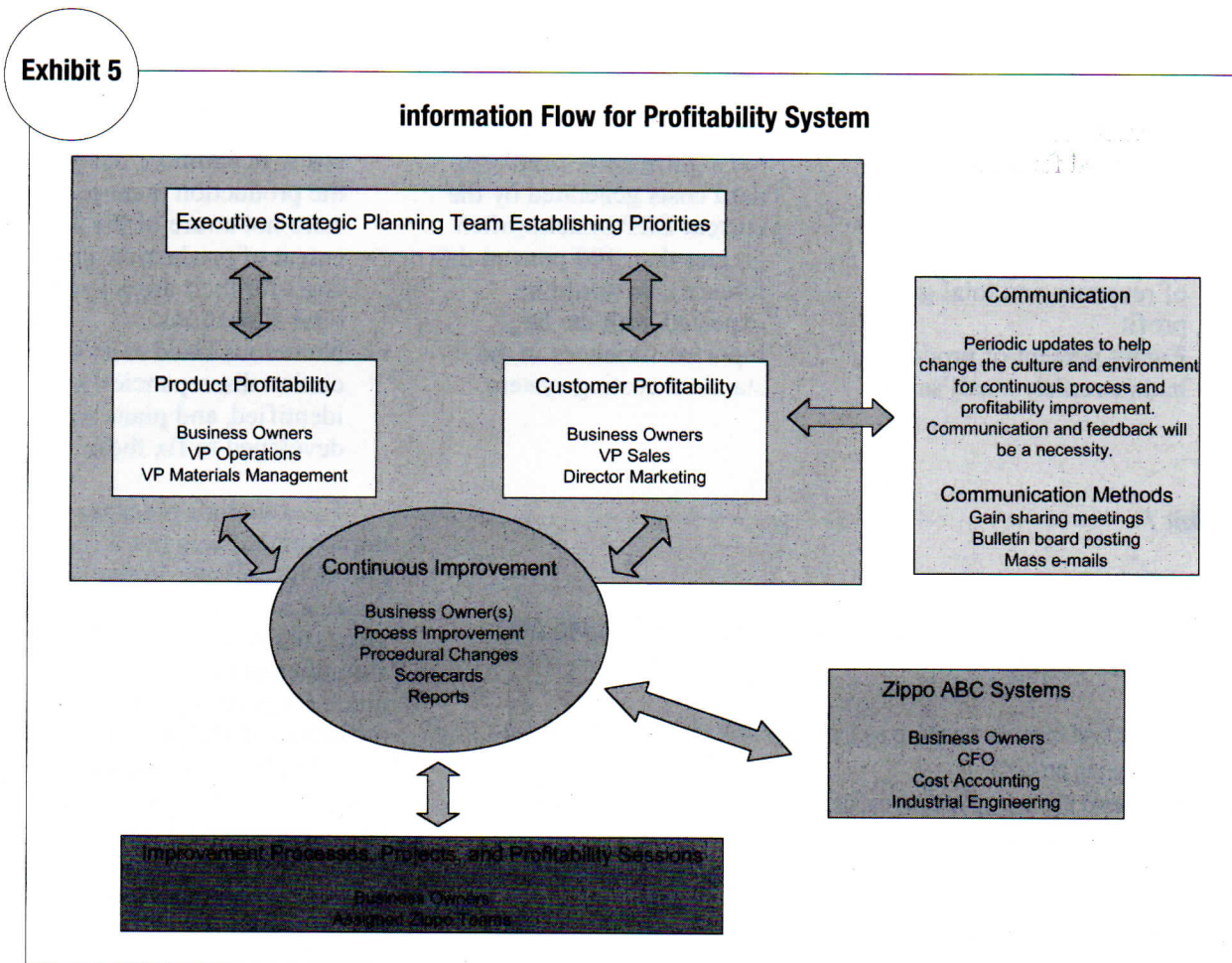
Because of large variances in Zippo's standard cost system reporting, the initial ABC analyses (Phase 1) focused on product costing and profitability—developing true costs of producing products to help understand winners and losers and true gross margins. Because of the complexity of dealing with 20,000+ SKUs, a product family tree was developed to help understand the various product classifications, as well as to bound the analysis to key product classes.

After establishing the true labor and overhead costs for the production departments, FastTrack ABC models were developed for each of the 15 primary

production processes and the 19 supporting production processes. Employees from the production and production support areas helped generate the models, and the managers signed off on all models and results.

Based on this data, the internal IT team developed a reporting system for producing profitability data by linking the FastTrack ABC Access models with the ERP system material cost data (Exhibit 6).

This initial system allowed management to analyze individual products and product classes. By analyzing this data, the internal team was able to produce a number of key findings—many of which were previously unknown to the executive man-



## Exhibit 6

## Sample Product Profitability Report

Data Entry				Calc					
Prod #	Product Name	Materials	40,000	Total Cost	49,000				
123-xxx	Regular Lighter 1	Material	3.00	Gross Margin	31,000	Per Unit	3.10		
Enter Sales Data		Outside Processing	1.00	Gross Margin %	39%				
Units Sold	Sales Value			Material	40,000				
10,000	80,000			Overhead (ABC)	9,000	Std Diff			
Standard Cost/Unit				Total Cost/Unit	4.90		-0.10		
Materials	4.00			Material/Unit	4.00		0.00		
Overhead	1.00			OH&Lab/Unit	0.90		-0.10		
ABC DATA							Cost Obj	Activities	Total Cost
Dept #/Name	Operation/Activity	Unit Cost	Support Cost	Multiplier	Total Unit Cost	Total Cost			
1 - Fabricate	Press	0.10	0.00	1	0.10	1,000	0.70	0.20	0.90
2 - Buff	Buff Edge	0.10	0.00	1	0.10	1,000			
3 - Buff	Brush Finish	0.10	0.00	2	0.20	2,000			
8 - Paint	Paint Fill	0.10	0.00	1	0.10	1,000			
10 - Inside	Assemble	0.10	0.00	1	0.10	1,000			
15 - Package	Box	0.10	0.00	1	0.10	1,000			
Dept #/Name	Operation/Activity	Unit Cost	Support Cost	Multiplier	Total Unit Cost	Total Cost			
15 - Package	Pkg Fit-Up Outside	0.20		1	0.20	2,000			

agement team. These findings included:

- A small number of products accounted for a large percentage of total gross profit—six products accounted for approximately one-third of revenues and total gross profit.
- Eighty percent of products had extremely small sales, generating, in total, less than 15 percent of the overall sales volume.
- ABC product cost data varied significantly from standard costs generated by the current ERP system (often greater than 100 percent difference), as would be expected with the large reported variances in the standard costing system.
- The top ten production activities in the plant accounted for 40 percent of total labor and overhead manufacturing costs. In addition, many of the production managers were not aware of the full extent of production support costs for their areas and their total allocations.
- Numerous fixed asset depreciation discrepancies were identified, and plans were developed to fix these.

## Exhibit 7

## Examples of Process Improvements Identified Through ABC Product Costing

- Identified material handling as the major NVA throughout the manufacturing process.
- Showed the cost of excess capacity, particularly in the maintaining of seldom-used equipment.
- Identified true costs of customer order patterns and resulting packaging requirements.

Even though process improvement was not a focus of the early analyses in the production and production support areas, the ABC data identified a number of potential opportunities for process improvement initiatives (Exhibit 7). For example, in one case, a heat sealing process requested by a customer was shown to raise manufacturing packaging costs almost 50 percent—without the additional ability to raise prices. Thus, gross margins

were actually found to be minimal and even negative. Therefore, management met with the customer to discuss this cost and subsequently worked out another packaging option that was cheaper to manufacture but still met all the customer's requirements.

### CUSTOMER PROFITABILITY

After completing and validating product pricing results, the next step in the process (Phase 2) included performing rapid FastTrack workshops in each of the SG&A departments to begin identifying how their activities and costs traced back to either products or customers/customer segments. Up to four departments were modeled and analyzed each week. As in the production area, managers signed off on each of the results

after reviewing their individual data.

The IT team then modified the internal reporting system to consolidate results from the product costing system with the SG&A models and other applicable financial data (e.g., returns, credits, commissions, etc.) to develop a Customer Profitability Statement (Exhibit 8). The reporting system allowed data to be developed on individual customers, groups of customers, territories, and regions. It also allowed the ability to stratify customers based on operating margins for continued strategic analysis and decision making. Although some of the results validated management's previously held assumptions, there were a number of surprises (e.g., identifying that less than 1 percent of customers accounted for over 100 percent of operating

income). After multiple presentations to management, marketing and sales have begun referencing the data and are currently taking lead roles in future strategic analyses.

### ACTIVITY-BASED MANAGEMENT

Upon validating product and customer profitability results, the internal team next began focusing their attention on ABM/process improvement initiatives—both in the production and SG&A areas (Phase 3). Specific high-cost functional areas were chosen first, along with cross-functional processes that were known to be problematic. Process analysis and NVA evaluation techniques were then used to quantify cost drivers and their impacts on various activities and product costs. These data were

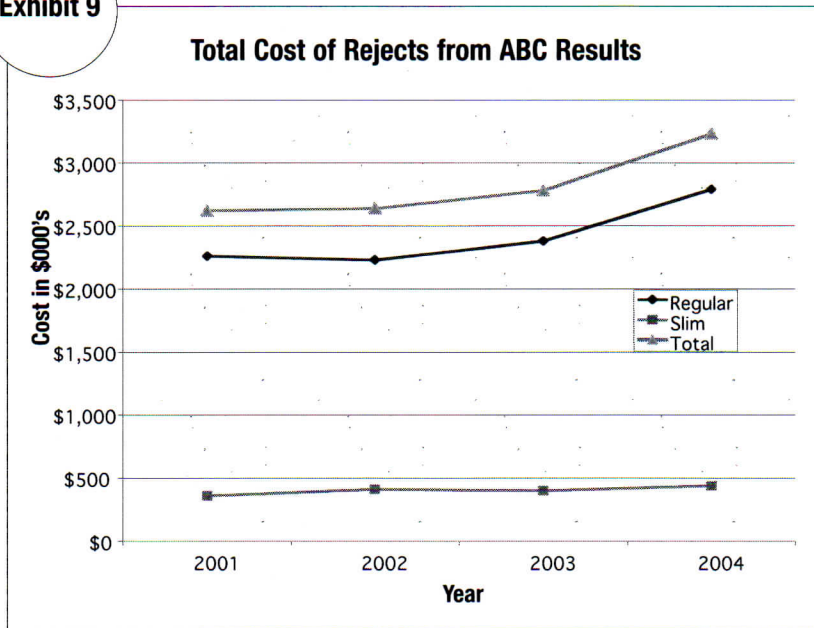
Exhibit 8

### Sample Customer Profitability Report

Sales Region: Sample		For Sales from January 2003 through December 2003	
<b>Profit and Loss Statement</b>			
<b>Sales</b>	<b>Units</b>	<b>\$\$\$ Sales</b>	
- Regular Lighter Sales	2,500,000	20,000,000	
- Slim Lighter Sales	250,000	2,000,000	
- MPL Sales	15,000	85,000	
- Fuel Sales	250,000	4,700,000	
- Promo Product Sales	200	1,000	
- Display Sales	2,000	15,000	
- Promotional Material Sales	20,000	1,000	
- All Other Sales	375,000	1,200,000	
<b>Net Sales</b>	<b>3,412,200</b>	<b>28,002,000</b>	
<b>Product Cost</b>			
- Regular Lighter Costs		15,000,000	
- Slim Lighter Costs		1,700,000	
- MPL Costs		100,000	
- Fuel Costs		4,000,000	
- Promo Product Costs		700	
- Display Costs		350,000	
- Promotional Material Costs		100,000	
- Other Costs		900,000	
<b>Total Product Cost</b>		<b>22,150,700</b>	
<b>Gross Profit</b>		<b>5,851,300</b>	
			<b>Product-Related SG&amp;A</b>
			- Manufacturing IT Support
			250,000
			- Purchasing Support
			125,000
			- Human Resources Support
			213,000
			- Licensing
			270,000
			- Arts & Graphics
			150,000
			- Legal
			340,000
			<b>Total Product-Related SG&amp;A</b>
			<b>1,348,000</b>
			<b>Cost to Serve</b>
			- Selling
			1,500,000
			- Marketing
			2,100,000
			- Other
			75,000
			<b>Total Cost to Serve</b>
			<b>3,675,000</b>
			<b>General &amp; Administrative Expense Allocation</b>
			- SG&A Executive OH
			400,000
			- SG&A Financial OH
			500,000
			- SG&A General OH
			325,000
			- SG&A IT OH
			125,000
			<b>Total General &amp; Administrative Expenses</b>
			<b>1,350,000</b>
			<b>Total Operating Expenses</b>
			<b>6,373,000</b>
			<b>Operating Income</b>
			<b>(521,700)</b>
<b>Key Operating Statistics</b>			
Units Sold	3,412,200	Gross Margin	20.9 %
Average Sales Price (Lighters)	8.00	Product SG&A/Sales	4.8 %
Average Sales Price (Non-Lighters)	9.06	Cost to Serve/Sales	13.1 %
		G&A/Sales	4.8 %
		Operating Margin	(1.9 %)
		Operating Income per unit	(0.15)



Exhibit 9



presented to management to begin developing process improvement and reengineering initiatives.

As an example, the reject rate from several production work centers and then in final quality control was fairly high. This “waste” has often been seen as a necessary part of the business, since high-quality/no-

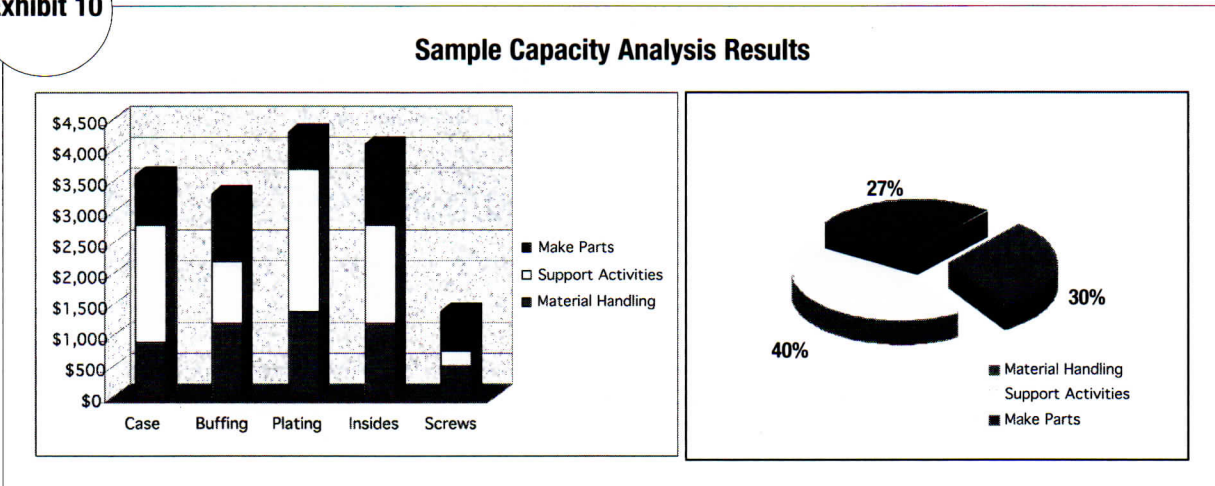
defect parts have been a trademark of Zippo for decades. Before ABC/M, management had little insight on the total cost impacts of the defects. However, with the new ABC systems in place, the total cost of rejects was developed, showing substantial impacts on total costs (Exhibit 9). Based on these data, production managers have begun

a number of initiatives to reduce root causes for the rejects from the very beginning of the production cycle. Some of the initiatives have been extremely simple, such as altering the spacing of racks in the plating process. Others will require more time and process changes.

In another example, capacity analyses (based on the CAM-I Capacity Model) were used to identify and quantify material handling and support activities across the production chain, areas that had previously been identified in the product costing analysis as NVA. In particular, the team wanted to quantify material handling costs to show management the full extent of the problem. Exhibit 10 shows examples from several of the production areas, along with a roll-up across all of production—showing that 30 percent of total production costs are associated with material handling. Such data have provided the impetus for capital projects to begin rethinking material and product flow throughout the plant.

Process improvements were not just confined to production,

Exhibit 10



but also included SG&A functions. Examples of some of the ongoing initiatives in SG&A are shown in Exhibit 11.

## NEXT STEPS

The product and customer profitability initiative using ABC/M at Zippo Manufacturing has already had a positive impact on overall operations. The ABC data has replaced the standard cost system data and impacted the way Zippo measures variances and manages production. It's also been used to update catalog pricing structures as well as provide go/no go data for new production projects (e.g., Blue Flame lighter). In addition, results to date have led to a number of process improvement initiatives, as well as ongoing strategic rethinking of markets and customers.

However, the process has had its share of headaches. In particular, because most managers and employees have been with Zippo for many years, changing the mind-set has taken time and has not always been smooth. For example, the first thing that got challenged was the data and the collection processes—typical in many new proj-

ects. But it's here that ABC/M and the FastTrack process again show their worth—for the processes and methodologies are relatively straightforward and common sense, plus they generate plenty of supporting data. Also, with managers having signed off on their individual functional data, it doesn't take long to switch the focus from data integrity to evaluating what the data means and what should be done next.

The ABC/M system and process at Zippo is not complete by any means. Now that system and data needs are better understood, the internal ABC/M team is planning the purchase and installation of an enterprisewide ABC package to make real-time updating and analysis easier. With this implementation, the team has also begun developing the formal processes and schedules for updating and maintaining the data. The next step will include developing the process and internal approach for analyzing strategic and operational initiatives and then implementing or tracking potential changes and improvements. The goal for the Zippo ABC/M system is not just to be seen as a one-time project or an accounting and profitabili-

ty reporting tool, but rather to fully incorporate the data and results as one of the drivers in the continuing strategic management process.

## LESSONS LEARNED

In going through the rigorous process of being evaluated and selected as a best practice organization by APQC for Calculating and Reporting Customer Profitability, Zippo was asked to summarize lessons learned and their critical success factors. Their answer is an appropriate way to end this article:

- Simplify models and calculations.
- Have appropriate reconciliation tools available.
- The process consists of manual and time-consuming tasks.
- Document lessons learned in order to move to the next level.
- Only look for a permanent software solution after you have gained a clear understanding of needs by doing it manually with existing software tools.

Critical success factors included:

- *Envision the end product*—"What is it that we are trying to achieve? What do we hope to gain?"
- *Simple pilots get quick wins*—Start the effort on a small and simple scale, such as with a department, to assess feasibility.
- *Buy-in of calculation methodology*—Ensure that there is a clear understanding of the calculation that is involved to obtain buy-in.

### Exhibit 11

#### Ongoing Process Improvement Initiatives at Zippo

- Streamlining purchase order processing
- Using EDI more extensively to feed ERP systems
- Charging for art revisions after a set designated # of changes and implementing print on demand
- Improving order status request processes
- Developing a profit simulation model

- *Validity and correctness of data*—It is important to ensure that the information reported or shared is timely, easy to understand, and accurate.
- *Executive, management, and supervisory stakeholders*—It is critical to obtain the buy-in of management.
- *Link to performance measurements*—By linking the effort to performance measurements, Zippo is able to motivate stakeholders to take action and participate in improving profitability.
- *Ensure that the underlying processes work before enabling with enterprisewide technology solutions.*

**John Miller** is a director of Arkonas Corporation in Houston, Texas. **Andrew Muras** is vice president of BAE Systems Analytical Solutions in Dallas, Texas. **Robert Vecchio** is corporate controller of Zippo Manufacturing in Bradford, Pennsylvania.