A BPM Partners White Paper

Profitability Analysis & Optimization

Gaining a competitive edge

December 2008

Table of Contents

Executive Summary

With organizational competitiveness, sustainability and cost management having higher visibility in the executive suite, profitability management is something that no company can take for granted. The good news is that improved business processes, powered by optimized technology, can help many companies significantly improve their profitability. It takes a level of commitment and some investment to realize the benefits, but if done right, the result can easily justify the cost. This paper looks at how a business can best take advantage of new trends and tools for profitability.

While great productivity gains have been realized with modern technology, competition continually puts downward pressure on prices and profit, while labor and resource costs continually increase. In order to remain profitable and improve margins and earnings per share, companies have had to innovate in the areas of cost control and accounting, and then use the information derived from analysis to refocus business operations. Effective companies have found ways to reduce the time intervals for this type of profitability analysis from weeks to days to hours.

Activity based costing (ABC) techniques introduced a new and more accurate way of allocating costs in order to manage profitability. Now a new generation of analytical tools, combined with ABC and even newer modes of cost accounting and analysis, provide an opportunity for organizations to achieve a new level of profit focus. This deep analysis of a business often yields important side benefits as well, such as retention of key customers and increased customer satisfaction.

Companies that can best optimize profitability on a near real-time basis and regularly assess their effectiveness with specific products, customers and regions will have an advantage that will help improve both their competitiveness and shareholder value.

History

Since the Industrial Revolution, the quest for increased productivity and profit has been non-stop. Productivity gains, driven by automation, process improvement and technology, have been dramatic and have provided an upward pull on the bottom line. However, profitability can be elusive even as productivity improves. The "problem" in a free market is that competition continually puts downward pressure on prices and profit, while labor and resource costs continually increase.

Coupled with this is the fact that standard cost analysis methodologies are not sufficient to uncover the true drags on profitability. It has been estimated that, on average, 20% of a company's customers are likely to be unprofitable to the company due to their higher consumption of resources.

In order to remain profitable and improve margins and earnings per share, companies have had to innovate in the areas of cost control and accounting, and then use the information derived from analysis to refocus business operations. Activity based costing (ABC) introduced a new and more accurate way of allocating costs in order to manage profitability. Now, thanks to a new generation of analytical tools combined with ABC and even newer modes of cost accounting and analysis, there is an opportunity for organizations to achieve a new level of profit focus. The companies that can best figure out how to optimize profitability are the ones that can survive in the marketplace and return shareholder value.

Many companies are still focused on implementing basic business performance management (BPM) controls. This is often a great first step for improved analytics. BPM handles the big picture and generally provides a quicker bang for the buck. For these companies, profitability analysis and optimization (PAO) is a Phase III or Phase IV project.

For companies with a satisfactory BPM system already in place, however, PAO may be a golden opportunity to further improve the bottom line. Some industries have adopted PAO more than others. The manufacturing sector, for example, had many early adopters as a natural enhancement to ABC costing, and PAO is steadily gaining traction in the financial services, insurance, healthcare, telecom and pharmaceutical industries, among others. Depending on the industry, PAO may currently be a luxury or a competitive necessity. Longer term, as more players in each industry adopt PAO methodologies, it likely will become more critical for survival.
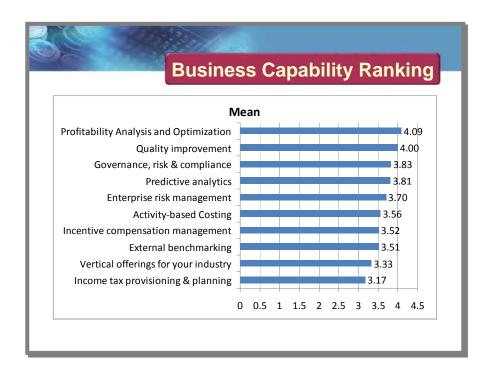
Business Problem

Businesses are looking for ways to gain insight into their operations so they can optimize profits. The core of the problem is that using only gross margin to measure profitability is like trying to understand molecular structure by looking through a magnifying glass. You just can't see what you need to see using only that tool, so your ability to make correct decisions is limited.

It is now widely recognized that gross margin is too broad a measurement to enable decision-making, and companies with a profit focus are increasingly using an activity based costing approach. The 2008 BPM Pulse Survey found that 23% of companies surveyed were using some form of ABC.

Businesses now recognize profitability analysis as a key business success factor. A recent IDC market forecast (March 2008) estimates that profitability management represents 20% of the total performance management software and services market. In a recent BPM Partners survey, customers named profitability analysis and optimization as the single most important business capability in a performance management solution. In the graph below, companies rated the importance of different business capabilities on a scale of 1 to 5.

BPM Partners 2008 BPM Pulse Survey – Market Trends

Activity Based Costing (ABC)

Countless books and articles have been written about activity based costing. We will review it here briefly as background for the larger discussion of performance optimization and analysis. ABC provides highly granular raw transactional data that, when fed into a multi-dimensional analysis application, can yield deep insight and unprecedented opportunities for optimizing profitability. Introduced in 1987 by Robert Kaplan, who later gave us balanced scorecards, ABC seeks to assign costs at the business activity level. Why? Because, unlike margins, activities can be managed, so by shining a light on which activities are generating the most cost, you can make decisions and take actions to improve margins.

Let's take a simple example, first looking at it from a gross margin point of view. Let's say you have two products, Product A and Product B. Product A is simple – easier to manufacture and to use. Product B is more complex to manufacture and use, but sells for a higher price.

		Prod A Simple	Prod B Complex
Price	$	35	$ 46
Volume		1,000	250

Looking at the total P&L for the two products combined, you see that you have a Gross Margin of 17.58% (see Appendix A for a more detailed breakout):

Overall P&L View		
Raw Materials	$	15,000
Labor	$	16,250
Indirect Costs	$	7,075
Total COGS	$	38,325
Sales	$	46,500
Total COGS	$	38,325
Gross Profit	$	8,175
Gross Margin		17.58%

You want to get to a 20% gross margin. How do you do it? Sell more of higher-priced Product B? Clearly, this data does not give you any actionable information. A traditional product costing approach, where cost per unit is simply allocated based on revenue, would have both products show up as profitable, with the more complex Product B having a higher margin than Product A (see Appendix A). Alternatively, an ABC approach would provide richer data that would allow you to make effective decisions.

For example, suppose you look at the manufacturing process and are able to capture data on the labor required for manufacturing Product A vs. Product B, and find that B requires significantly more man hours per unit. Next, looking at support costs using data from your CRM call center, you find that Product B is also using a higher proportion of your customer support resources on a per unit basis. Using these cost drivers, you are able to establish profitability by product. You might then have more detailed costs that look like this:

Profitability by Product Unit	**Product A**	**Product B**
	Simple	Complex
Price	$35.00	$46.00
Raw Materials	$12.00	$12.00
Labor	$10.00	$25.00
Support Costs	$2.45	$8.50
Other Indirect Costs	$2.00	$2.00
Gross Profit	$8.55	$(1.50)
Gross Margin	24%	-3%

Now you can see that you are actually losing money on Product B. So clearly the road to higher margins is not to sell more of Product B. Maybe there are other valid business reasons to continue to market Product B, but at least you know where to look and have data from which to make decisions. What actions could you now take?

1) Perhaps some manufacturing process improvements or design changes could trim some cost from Product B.

2) A usability enhancement or better documentation could reduce support costs.

3) Maybe you do not want your sales force pushing the higher-priced product, which would be their natural tendency, when it's your least profitable. You may want to change their incentives to be profit-focused rather than just revenue-driven.

This is one very simple example of ABC methodology being applied to optimize product profitability. In a real ABC environment you might be pulling cost driver data from many other sources besides production and support, as we will discuss.

The process of applying ABC can also provide the basis for other profitability analyses such as by customer and channel. These three areas – product, customer, and channel – are probably the most popular and promising in terms of managing profitability.

Ideally you want to capture data at the lowest possible level of granularity, such as at the transaction or sales order level, so that costs can be assigned at a base level and seen in the context of each dimension tracked. ABC looks at the cost of each activity involved in the deal and attaches those costs to the deal revenue. The cost data now sits at the intersection of all the dimensions being tracked – product and product type, customer and customer segment, sales channel, sales region, account, and so on – and so can be analyzed along any dimension or intersection of dimensions.

In actuality, most ABC implementations employ a hybrid model that makes use of the best available data. The level of costing detail will depend on the schema of your data warehouse and what level of granularity is available. One factor to consider is what pain/cost is involved in capturing or allocating costs. Different activities may have different types of data available – some system-based and some not – and so may require different methods of allocating costs.

A similar example could be to analyze customer profitability in a financial services environment. In a service business, the costs of servicing an account can vary greatly from one customer to another, impacting customer profitability. Also, it can be a challenge for a financial services company to accurately allocate infrastructure costs across customers, products, and channels. A top-down, parameter-driven allocation runs the risk of being highly inaccurate. If you can begin to understand your customers, you can design additional products to most effectively meet their needs. You can set sales targets more accurately by product, region, and customer segment.

Better Business Decisions

The Product A/B example demonstrates how basic ABC can provide better information for purposes of performing analysis and making decisions. But the business benefits of profitability analysis are not merely about controlling costs. When you add the multi-dimensional analysis layer, profitability analysis can provide strategic business insight for optimized revenue, customer satisfaction, resource utilization efficiency, and other key metrics, in addition to minimizing costs.

For example, if you identify some highly valuable customers, you may want to assign them a higher service level to improve retention where it will have the biggest bottom-line impact. Or you may find that your best customers prefer a certain product, so you could increase customer satisfaction, revenue, and profitability by providing other similar products. The whole business picture comes into play when you dig down and look at, essentially, what is working and what is not.

Historic Challenges with Profitability Analytics

Of course, finance organizations already have their eye on profit, but in many organizations analysis is done using spreadsheet models, where it is difficult to handle the complex array of cost drivers that are required for effective use of ABC.

A recent IDC survey, "The Value Proposition of Profitability Management Solutions," indicates discontent among managers regarding their companies' tools and methodologies for analyzing profit. The data they need either is not being captured or, more often, is not accessible or consumable in the way they need it to be. Furthermore, having a ton of data in the warehouse is not helpful if it is not being translated into a useful form – namely, actionable information. As a result, much profitability analysis is essentially a manual, ad hoc process rather than a consistent, systemic one.

So what data is needed to feed the ABC process? Activity cost data can come from a host of different systems, which will vary by industry – process control, call center, human resources, marketing campaign management, sales management, even the weather (for effect on crop yields or insurance claims, for example). This data needs to be captured and made available in the data warehouse, and the PAO system needs to be able to access and manage this diverse data.

The Era of Multi-Dimensionality

The ability to do multi-dimensional analysis takes ABC to a new level. With multi-dimensional tools you can not only analyze profitability by customer, product, channel, and other dimensions, but you can look at the intersections: product segment by channel, customer type by brand, cost by supplier by product, or product by channel by geography. Taking the last case, if you see that fried pork rinds are selling well only in convenience stores in the southeast sales region, you have information that is valuable to your marketing department, your sales team, and your distributors, among others. So to the extent that you involve your suppliers and distributors in your planning, the information can have an impact throughout the value chain.

Powerful multi-dimensional tools, sometimes referred to as OLAP technology (On-Line Analytical Processing), have been around for more than a decade now, and have been constantly improving in terms of functionality and scalability. All the major BPM players now offer an OLAP solution of some kind. Financial reporting systems that once were limited to four or five dimensions now routinely incorporate 10 to 15. When combined with ABC, multi-dimensional analysis provides powerful capabilities for improved decision-making.

The beauty of multi-dimensional analysis is that you can essentially generate a P&L by product, by customer, by sales channel, or by whatever dimensions are meaningful to your business. In any company, it is likely that some percentage of customers are unprofitable to the business. Multi-dimensional analysis shines a light on areas of unprofitability. It then becomes a business decision as to how to address the situation. In an environment like banking, for example, where customers are attached to a branch, there is a need to look at branch profitability overall, as well as customer profitability by branch. For a bank with multi-dimensional analysis tools, templates can be provided to branches to allow them to analyze profitability by customer, customer segment and product. The branches then are empowered to make decisions to operate more profitably – for example, by improving retention of the most profitable customers or by putting marketing efforts behind the most profitable products.

Or consider the insurance industry. With powerful analysis tools, it is possible to look at profitability across business segments, product lines, individual products, and brands. Analysis of the business at this level of granularity then informs strategic planning and budgeting – not to mention rolling forecasts – which can drive future performance towards increased market share and profitability. The business is able to focus resources where they will have an impact on the bottom line.

Trends in Activity Based Costing

Let's step back and put ABC into perspective in terms of the methods of cost allocation in use today. These methods can be categorized into three main types:

Parameter-Driven or Percent Allocation – This is the more traditional method. It entails taking a total line item cost and allocating it out, generally based on some driver to set proportions. For example, marketing cost might be allocated to business units

proportionally based on their revenue. A cost of sales figure might be allocated to a customer segment based on number of customers in the segment. Or personnel costs may be allocated based on employee assessments of how they divide up their time. (This kind of top-down allocation will never reveal your excess capacity because workers will always report 100% utilization of their time.) Depending on the industry, there might also be time-capture data available for a given resource, such as on a manufacturing production line. This top-down method is always the fallback position if better data such as bottom-up assignment is not available, and there will almost always be some costs that are best handled this way.

Standard Activity Based Costing (ABC) – As already discussed, this is the basic concept of attaching costs to resources and then allocating those costs to the business activities that actually consume the resources. ABC looks at the consumption of those activities by customer, product, etc., so that profitability of each can be measured and therefore managed. This bottom-up approach is deemed to be more accurate than standard top-down allocation. For one thing, it is more likely to find excess capacity.

Time-Driven ABC – This is a more recent trend in ABC, whereby time is included as a driver and costs are looked at as a function of time-based usage of resources. This can provide richer data than standard ABC and allow for more accurate budgeting and forecasting by time period.

Time-driven ABC reflects the continuing drive for more sophisticated analysis, in order to better understand and manage a business. A time-driven approach looks at costs and contribution per unit of time, such as revenue contribution per minute. This has been referred to as "throughput profitability" or "profit velocity."

A company may look at the profit margin for a product and may separately capture production data. It is the marriage of these two – margin contribution and operational metrics – that produces profit velocity. The resulting measure can then be analyzed along any dimension such as customer, product, manufacturing plant, and so on. So if you produce 100 units of Product A per hour, and Product A yields a gross profit of $8.55 per unit as measured by your costing model, then it is contributing $855/hour. Then say you have Product X, which is lower margin, producing only $4.00 in profit per unit. However, Product X can be churned out at a rate of 500 units per hour, generating $2,000 in cash per hour. Product X is still lower margin, but has a higher profit velocity in terms of being able to generate cash flow. The analysis can get even more sophisticated if you are looking at multiple steps in a production process and calculating the profit velocity at the production bottleneck.

Success Factors for Profitability Analysis

There are a number of factors that can help a company be successful in implementing profitability analysis. In addition to these factors, selection of the right tool is important and will be discussed in the next section.

Better Modeling Requires Better Data

To understand the true cost drivers of your business, it is important to capture data that shows how resources are actually being used. The more data you can capture and feed into the analysis, the better job you can do at bottom-up cost assignment.

No company is going to have perfect knowledge of every event or process, but there should be some method in place to capture every resource cost. To use the call center example, if your call center captures call data in an automated way and if its data schema allows you to associate each call with a customer, customer segment, product, and other dimensions that you want to track, then it will give you granular data that will support detailed analysis. Absent that, you will need another method to account for the time spent using call center resources, such as surveying call center staff and having them estimate the percent of time spent on a given product, for example. Obviously the survey method will not be as precise or granular, but it is better than nothing.

Another data quality issue concerns visibility of data. Where data visibility is good, there is the prospect for profitability analysis. However, there may be times when the way data is packaged does not provide sufficient information for analysis. It could be argued that the subprime meltdown of 2008 was partly due to customer data (loan quality) being detached from the financial instruments, making it more difficult to analyze risk. There obviously are sound business reasons for ensuring data visibility other than profitability analysis.

To best understand how to use profitability analysis results to have a business impact, it is helpful to have industry benchmarks for costs and margins, again at as granular a level as possible. This enables you to see how your company compares and can help direct you to areas where you are most likely to have an impact – that is, if others can achieve a lower margin in a given area, you should be able to do it too. You will get the most bang for your PAO buck if you can target the "low-hanging fruit." On the other hand, if your margin is already significantly lower than the industry standard, you may want to focus your cost-saving efforts on areas that may be more rewarding.

The Company Needs to Be Aligned

Underlying an ABC-oriented profitability analysis application are business rules dealing with how to attribute revenue and allocate cost. Consensus on these rules and buy-in on the fairness of the rules are critical. This is the first area of alignment that is needed.

But a well-designed system is not enough. For a PAO effort to be successful, the company structures, culture and focus need to be aligned to support it. Everyone needs to be on board: marketing, finance, customer service, sales, product development/manufacturing operations – everyone has an impact on margins (unless they work for free and produce nothing).

This requires more than just a memo from the CEO/CFO, although that is important too. Structures and incentives need to be aligned to support profitability. For example, you may need to shift the thinking and incentives for your sales force to drive profit, not just revenue. Similarly, the office administrator who orders supplies may opt for convenience or personal relationship with a vendor rather than cost, unless he or she is aligned with the goal of profitability.

It may be necessary to redesign products or services to support your new findings and to roll out the new or modified offerings.

The Company Has to Be Able to Act on the Information

To take full advantage of your analysis, relevant information should be made available to managers and others who can impact cost. Data collection and reporting need to be fast in order to get timely information to both the front lines and back office. For this reason, delays caused by cumbersome manual processes or requirements for IT to generate reports can mean costly delays.

Success Story - Banking

Bank Gets a Handle on Its Customers

A small but global commercial bank was looking to improve its profitability reporting. It was taking two weeks to generate the reports needed by management. By implementing a more robust profitability reporting application, it was able to create daily profit reports that were available within hours and provided rich data on demand.

While continuing to use Misys Midas for its core banking operations, the bank implemented a multi-dimensional analysis tool to sit on top of Midas and four other source systems to provide reconciliation, auditing, and reporting. Each night the data is extracted, cleansed, and stored in a data warehouse. It is then loaded into the analysis tool, which provides a user-friendly interface that allows account officers to run reports and see the customer information they need in a way that can help them do their jobs effectively.

Furthermore – and this goes to the heart of company culture – managers and others who impact margins should be empowered to make decisions within a framework of company priorities. These priorities, therefore, need to be clear – customer satisfaction, profit, etc.

To be most responsive to profit optimization data, a company needs to provide employees with:

- Information on profit/margin opportunities
- Priorities and goals to provide a decision framework
- Incentives aligned with profit initiatives
- Empowerment to make decisions to impact profitability
- Feedback and guidance on profitability behaviors

The final item in that list, feedback, is important not just as part of employee performance appraisals, but in terms of ongoing evaluation and fine-tuning of the profitability optimization process.

Criteria for Selection of a Technology Solution

Based on the best practices in PAO that we have discussed, below are some of the key attributes needed in a technology solution:

- **Multi-dimensional:** This is a must in order to do the type of analysis that yields results and finds "hidden truths." Should be able to generate a P&L by customer/product/channel or other dimensions that are relevant to the business.

- **Multi-platform:** Needs to be able to integrate data from varied source systems, such as PeopleSoft, SAP, IBM, Oracle, etc.

- **Compatible:** Should work with existing IT infrastructure and make use of currently available data and systems.

- **Scalable:** Needs to handle large volumes, even transactional level; therefore needs to handle many millions of rows of data with good performance.

- **Manageable:** Need the ability to filter, sort, search, categorize, etc, to make large volumes of data manageable/understandable.

- **Drillable:** Should provide the ability to drill down to the cost pool and drivers, and ultimately to the transaction level. Should also provide the ability to drill down and see the business rule that may be allocating an expense to a particular entity.

- **Auditable:** Any system needs to be auditable in order to meet compliance needs.

- **Secure:** Due to the sensitive nature of the data, security is critical.

- **Easy rule creation:** Should provide the flexibility to assign business rules that match the behaviors in your business, and the rules should be easy to set up.

- **Fast and easy reporting:** Should provide the ability to get information quickly and be able to analyze it with minimal IT resources. Should enable users to run daily profit reports to keep up with changing conditions and see effects on transaction profitability.

- **Extendable:** Preferably has a zero footprint Web interface to enable extranet capability and extensibility throughout the value chain.

- **End-user oriented:** Should be user-friendly in terms of interface and in terms of providing users with what they need to impact profitability.

- **Finance-friendly administration:** Should have centralized administration that can be done by finance department, and should require minimal IT support for daily operation.

- **Risk-friendly**: Should be able to make use of risk-adjusted data and integrate with risk management systems, and so contribute to improving risk-adjusted return on capital (RAROC).

- **Packaged:** If not totally turnkey, should at least provide the availability of industry vertical templates.

- **Workflow integrated:** Availability of integrated workflow is a plus.

Conclusion

Profitability analysis and optimization can have a huge impact on returning shareholder value and remaining competitive in the marketplace. The combination of methodologies such as activity based costing (ABC) with multi-dimensional analytical tools provides companies with powerful capabilities to find opportunities for profit optimization.

ABC, including newer sophisticated models such as time-driven ABC, assigns costs to activities. Since managing a business involves managing activities, ABC provides the data needed to manage business activities in order to reduce costs. With the added layer of multi-dimensional analysis, it is possible to look deeply into the business and see the profitability of individual customers, products, channels, or even transactions, and to also look at the intersection of these – for example, to see if there are products that are profitable only for certain customers or customer segments.

Keys to successful PAO are good data, proper allocation of cost and revenue assignments, company alignment on the profit initiative and goals, empowerment of field decision makers to support profitability, and selection of the right technology solution.

Appendix A

Following is a breakout of the product costing example used in the text, comparing a traditional product costing approach with an activity based costing approach.

Traditional Product Costing Approach

Note that the traditional product costing approach shows Product B with a 23.75% margin.

P&L				Product Costing			
	Prod A	**Prod B**	**Total**		**Prod A**	**Prod B**	**Total**
	Simple	Complex			Simple	Complex	Average
Price	$35.00	$46.00	$37.20	Price	$35.00	$46.00	$37.20
Volume	1,000	250	1,250	Volume	1000	250	1250
Sales	$35,000	$11,500	$46,500	**Unit Sale Price**	$35.00	$46.00	$37.20
Costs				Cost / Unit			
- Raw Material	$12,000	$3,000	$15,000	- RM	$12.00	$12.00	$12.00
- Labor*	$12,231	$4,019	$16,250	- Labor*	$12.23	$16.08	$13.00
- Indirect Costs*	$5,325	$1,750	$7,075	- Indirect Costs*	$5.33	$7.00	$5.66
Total COGS	$29,556	$8,769	$38,325	**COGS / Unit**	$29.56	$35.07	$30.66
Gross Profit	$5,444	$2,731	$8,175	**Gross Profit**	$5.44	$10.93	$6.54
Margin	**15.55%**	**23.75%**	**17.58%**	**Margin**	**15.55%**	**23.75%**	**17.58%**

For simplicity, all Labor and Indirect Costs are assumed as indirect and allocated based on revenue contribution.

Activity Based Costing Approach

Note that the ABC approach shows Product B with a -3.26% margin.

P&L

	Prod A	Prod B	Total		Prod A	Prod B	Total
	Simple	Complex			Simple	Complex	Average
Price	$35.00	$46.00	$37.20	Price	$35.00	$46.00	$37.20
Volume	1,000	250	1,250	Volume	1000	250	1250
Sales	$35,000	$11,500	$46,500	**Unit Sale Price**	$35.00	$46.00	$37.20
Costs				Cost / Unit			
- Raw Material	$12,000	$3,000	$15,000	- Raw Material	$12.00	$12.00	$12.00
- Labor**	$10,000	$6,250	$16,250	- Labor**	$10.00	$25.00	$13.00
- Indirect Costs	$4,450	$2,625	$7,075	- Indirect Costs**	$4.45	$10.50	$5.66
*- Support Costs***	*$2,450*	*$2,125*	*$4,575*	*- Support Costs*	*$2.45*	*$8.50*	*$3.66*
*- Other Indirect Costs***	*$2,000*	*$500*	*$2,500*	*- Other Indirect Costs*	*$2.00*	*$2.00*	*$2.00*
Total COGS	$26,450	$11,875	$38,325	**COGS / Unit**	$26.45	$47.50	$30.66
Gross Profit	$8,550	-$375	$8,175	**Gross Profit**	$8.55	($1.50)	$6.54
Margin	**24.43%**	**-3.26%**	**17.58%**	**Margin**	**24.43%**	**-3.26%**	**17.58%**

*** All Labor and Indirect Costs are allocated based on ABC.*