USING THE CUSTOMER/PRODUCT ACTION MATRIX TO ENHANCE INTERNAL COLLABORATION

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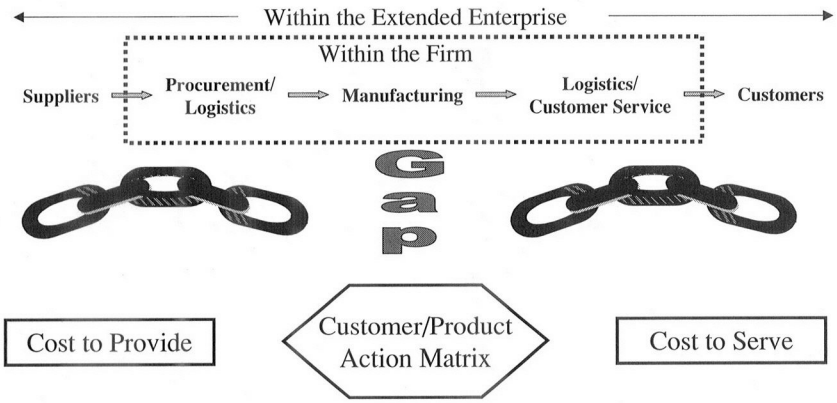
Despite recent managerial and academic attention focused on supply chain management and its integrative philosophy, Fawcett and Magnan (2002) found that most of the organizations they studied are only at the early stages of inter-company collaboration. Part of the explanation for this limited activity is that there remains a significant gap in terms of management's ability to integrate across their own internal functions. Managers report that it is easier for buyers to integrate with their suppliers *and* logistics managers to integrate with their customers than it is for either group to integrate within the firm, across logistics, procurement, manufacturing, and marketing. This internal separation or gap has been coined the *Great Operating Divide* (Bowersox, Closs, and Stank 1999). Figure 1 depicts this great divide within a manufacturing firm – although the divide can occur within any firm in the supply chain. This divide comes from different priorities, measures, objectives, processes, and terminology of operations-focused and customer-facing activities. The bottom portion of Figure 1 illustrates the potential for the Customer/Product Action Matrix (discussed in this paper) to assist in reducing or eliminating the gap by combining consideration of the *cost to provide* and the *cost to serve*. These issues will be addressed in later sections.

FIGURE 1

THE INTEGRATION DIVIDE



Perhaps the best example of the great divide was the disappointing results of the Efficient Consumer Response (ECR) initiative. Intended to save billions of dollars in inventory and transportation while avoiding expedited expenses, the process relied on close cooperation between supply chain partners in the food industry. ECR's disappointing results have been blamed on several reasons – one being inconsistencies in measures between and within supply chain participants (Brown and Bukovinsky 2001; Frankel, Goldsby, and Whipple 2002).

Bowersox, Closs, and Stank (2000) indicated that while purchasing, production, logistics, and marketing have worked independently to integrate within their own functions, there has been less progress made toward cross-functional integration. There remains a struggle to create "clear and consistent communication and cooperation" among these functional areas (Fawcett and Magnan 2002). Managers spend significant resources navigating the "waters of their own harbor" rather than forming external collaborative programs (Fawcett and Magnan 2002).

This internal integration struggle is further exasperated due to budgetary metrics and reward structures used in most firms (Bowersox, Closs, and Stank 2000). These measures and rewards encourage sub-optimization or, said another way, discourage cross-functional integration. Process-oriented measures and rewards that encourage and facilitate cross-functional (and cross-enterprise) integration are needed (Bowersox, Closs, and Stank 2000).

While internal integration efforts have occurred to some extent within firms, opportunities for improvement remain by eliminating the dichotomy between operations-focused and customer-facing orientations. This represents more than just differences in goals and perspectives. Rather, it demonstrates two sides of a coin that are often in conflict with each other. For example, the operational side has traditionally been driven more by efficiency – in other words, the *cost to provide* goods and services – and follows a cost-reduction mentality. Minimizing costs while establishing consistent and predictable demand/supply patterns becomes the goal. Consistency is maintained through long production runs, minimized set-ups and change-overs, and product standardization (Martin 1998).

Contrast this situation to the factors that drive a customer-facing orientation where the focus has traditionally been more on effectiveness. The goal becomes one of tailored service and product offerings to meet individual customer requirements. This often requires high levels of inventory, SKU proliferation, and flexibility in service and pricing options. The *cost to serve* is driven by the desire to maximize service options for customers, placing cost control as secondary to revenue growth.

Given these different focal points, it is no wonder that firms have not always managed to cross this "great divide." The task of balancing existing trade-offs is difficult – e.g., cost to provide versus cost to serve, efficiency versus effectiveness, long-term strategic plans versus short-term production constraints, functional measures and rewards versus process-oriented goals. Research on Digital Loyalty Networks illustrated that only 13% of leading companies had consistent linkages between the operations-focused and customer-facing sides of their organizations (Sabath and Kumar 2001). Of that 13%, only a small handful classified their linkage at a high degree of integration. Yet, in today's environment, operations and customer-driven priorities can no longer exist independently. As stated by Martin (1998), "the 'barons' of production and marketing are clearly counterproductive to the achievement of overall corporate goals."

This paper provides a simple tool, called the Customer/Product Action Matrix, for measuring key operations-focused and customer-facing decisions. This tool can be used to develop tactical and strategic plans that target the most profitable customers while prioritizing product mix decisions. This tool can assist managers in developing a more practical approach to functional integration within the four walls of their firm that, in turn, better position the firm for extended integration efforts. Using terminology that is common to both operations-focused and customer-facing managers enables consensus to be achieved in key strategic decisions that increases functional integration. Once this occurs, extended integration efforts across supply chain partners are possible because: (1) the operations-focused and customer-facing processes are now linked and focused on common goals; and (2) the priorities for integration efforts are more easily identified. Managerial implications and decision-making heuristics will also be discussed.

CROSSING THE GREAT DIVIDE

There are various reasons and potential explanations for the lack of progress in achieving cross-functional integration. In spite of this, the reality is that working together does not always come easy to the operations-focused and customer-facing sides of organizations. The often-conflicting goals of cost to provide versus cost to serve have historically held separate, unrelated measures, budgets, and information. As such, there is a need to develop common policies, procedures, and practices across these different focal points – and to measure adherence to these established standards (Bowersox, Closs, and Stank 1999). A "one-plan" mentality within the firm is required – and is chiefly the mission of supply chain management (Martin 1998).

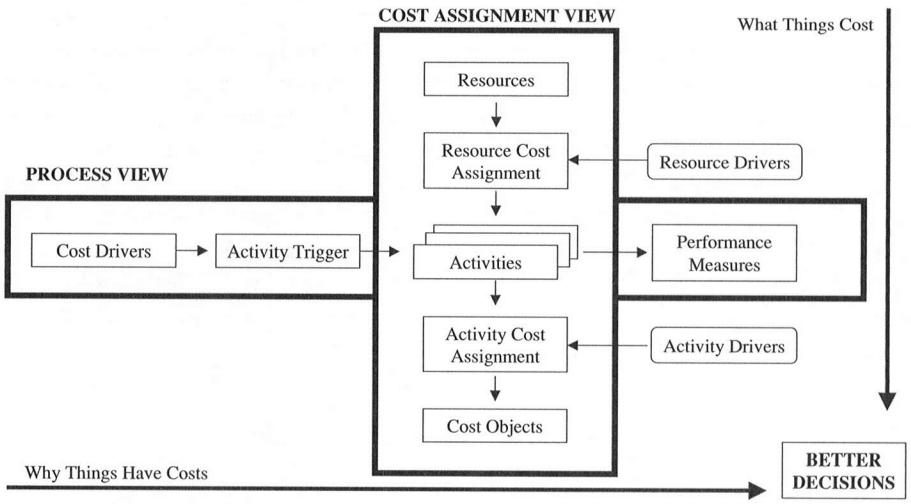
Why has it been so difficult to move to this "one-plan?" Various authors conclude that one reason is the lack of appropriate total cost information (Braithwaite and Samakh 1998; Kuglin 1998; Lin, Collins, and Su 2001; Martin 1998). Since any supply chain involves flows of materials and information, a means to assess total costs and performance across those flows is critical. In spite of this, traditional accounting systems group costs into aggregated categories that hamper the identification and understanding of cost trade-offs and their impact on performance (Martin 1998). If the combined goal is to reduce total supply chain costs while maximizing performance, then the costing approach must support and encourage "optimal," as opposed to sub-optimal, supply chain behavior (Kuglin 1998, p. 201). Traditional accounting systems are an inadequate measure for managers since they allocate "escalating overhead costs on a volume driven basis...which no longer depicts the true consumption of resources in modern manufacturing and design" (Lin, Collins, and Su 2001).

A fully accurate, total costing system, such as Activity-Based Costing (ABC), is one possible tool that can further define and organize data to allow managers to make process-oriented decisions (Lin, Collins, and Su 2001). The value of ABC, for example, as shown in Figure 2, is linking the performance of specific activities to the resources they consume (Cooper and Kaplan 1991).[1] The ABC framework leads to better decision-making as it is focused on actual cost drivers, and it can be performed on any process – either producing a product and/or servicing a customer. This allows for more specific understanding of whether or not the activities are productive and/or whether or not resources used can be reduced without impacting performance (Goldsby and Closs 2000). After a thorough ABC analysis, it is not unlikely to find that what was once thought of as a profitable product or customer is found to be unprofitable (Goldsby and Closs 2000).

[1] As a variety of resources exist that illustrate total costing methods, this paper will not provide a step-by-step implementation process for ABC. The focus of this paper is how to use the costing information once it is generated.

FIGURE 2

ACTIVITY BASED COSTING (ABC) OVERVIEW



Given that one of the difficulties with internal, as well as external, integration is the development of a common language that translates into processes, priorities, and goals, combining the operations-focused and customer-facing measures into one tool would provide a first step in developing a common understanding. Using ABC analysis to determine customer and product profitability and then combining the two provides a useful tool to perform a trade-off analysis. The result of this analysis is the development of a shared priority schema from which operations-focused and customer-facing strategies and tactics can be formed.

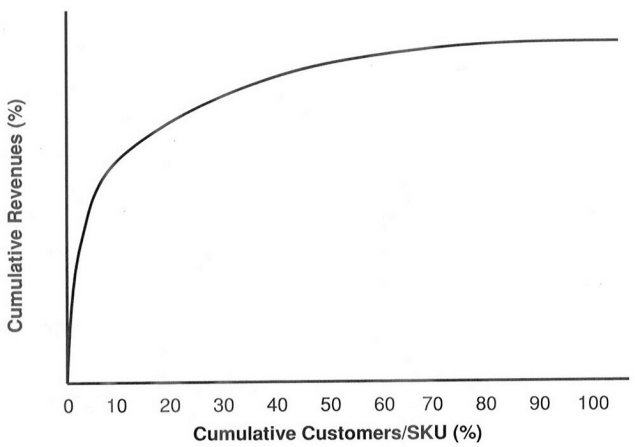
The following section discusses how this analysis can be used to determine customer and product profitability. This example and discussion is based on several years of experience in assisting managers to develop a model that evaluates customer and product profitability, called the Customer/Product Action Matrix.

A STRUCTURE FOR UNDERSTANDING[2]

While managers consistently measure sales and, at least informally, rank sales from largest to smallest (according to customer or SKU), managers may not base decisions upon this data or ranking. Managers may intuitively recognize who are the most important customers as well as who are the problem customers, but they do not necessarily have the data to make decisions based on the intuitions. Figure 3 shows the cumulative sales of a typical consumer products manufacturer by customer and by SKU. It is clear that a very small proportion of customers or products contribute a very large proportion of revenues. The typical Pareto principle: "Twenty percent of the customers give us 80% of our sales" or "Twenty percent of our SKUs give us 80% of our sales" is reality for nearly every company. As a matter of fact, most ranked distributions are even more concentrated than the typical "80-20" rule. A group of customers or SKUs smaller than 20% may well represent the 80% of sales. The Pareto principle is certainly not new to most managers; yet, they may not formally identify key products or customers based on this principle – or, more importantly, form strategies based on this information.

FIGURE 3

TYPICAL CUMULATIVE SALES BY CUSTOMER/SKU



[2] This section includes examples based on general experiences gained from working with companies to develop these Customer/Product Action Matrices.

By formally ranking demand, managers would be in a better position to develop customer and product strategies as well as to understand cost to service trade-offs. This is important as there is often a difference between customer and product contribution to sales and their contribution to profit (Bookbinder and Zarour 2001). For example, a customer who contributes significantly to sales may be highly demanding in terms of service and special requirements and, thus, less profitable. On the other hand, a customer that has mid-level sales contribution may be extremely profitable. A recent press release from Technomic (*www.Technomic.com*) illustrates this point. In a study conducted by Technomic and Willard Bishop Consulting, it was found that over 50% of items carried by broadline food service distributors were actually unprofitable. Without formal ranking tied to profitability, managers cannot improve decision-making to maximize profit while improving the cost to produce/cost to serve ratio.

The Customer/Product Action Matrix is a tool for establishing a consensus or "one-plan" mentality within a firm. It not only establishes priorities by contribution (that can then be compared if needed to cost/sales performance benchmarks), but also provides a common goal that incorporates both the operations-focused and customer-facing processes within the firm. The process begins by developing a simple, but accurate, cost model based on key activities and cost drivers (see Figure 2). The model examines the cost of particular products or *Cost to Provide* (as depicted in Figure 1) as well as the cost of particular customers or *Cost to Serve* (also in Figure 1). In other words, cumulative profit by customer and cumulative profit by product are developed. These two perspectives are then combined in the Customer/Product Action Matrix.

When measuring cumulative profit by customer and by product/SKU, the results follow the Pareto principle in that a small number of customers and/or products generate a large portion of profitability. The results also show that a portion of customers and/or products actually generate a profit loss. When this method is used, both customers and products have generally been ranked into four segments – extremely profitable, highly profitable, marginally profitable, and unprofitable. The four segments are relatively straightforward to determine but vary by individual firm. When customer and product profitability are ranked (on a spreadsheet, for example), clear gaps or large drops in profitability will generally appear. A manager can assign customer and product segments based on where these drops occur. Table 1 provides a fictitious example to demonstrate how product segments could be derived.

TABLE 1

SEGMENTING PRODUCTS INTO MATRIX CATEGORIES

SKU by Item No.	Profit Contribution (%)	Change in Profit Contribution (%)	Cum Profit (%)	Matrix Category and Profit Contribution*
1	40		40	1
2	38	2	78	1
3	**7**	**31**	**85**	**2**
4	5	2	90	2
5	5	2	95	2
6	**2**	**3**	**97**	**3**
7	2	0	99	3
8	2	0	101	3
9	2	0	103	3
10	1	1	104	3
11	**-1**	**2****	**103**	**4**
12	-1	0	102	4
13	-2	1	100	4

**Level 1 is extremely profitable, level 2 is highly profitable, level 3 is marginally profitable, and level 4 is unprofitable.* Level 1 contributes 78% to total profit, level 2 contributes 17%, level 3 contributes 9%, and level 4 loses 4% of total profit.

**This drop in profit is not as large as the first two drops, but cum profit for this product was negative – thus, the product and those below it were coded as level 4.

The remaining section will first discuss customer profitability segments, and, then, product/SKU profitability segments. Next, how to use the matrix to evaluate both customer and product/SKU decisions will be examined. The application of this matrix will be discussed with specific examples that were achieved across multiple manufacturers serving various industries. However, the matrix could also be used with wholesaler/distributor operations.

When focusing on cumulative profits by customer, most cases have shown an exceptionally small group of customers, often as few as two or three, account for an extremely high proportion of profitability, generally 30% to 50%. These *A-level* customers are so important that each one should be considered as an individual market segment, and should receive the focus and attention that other entire segments warrant. Service to A customers should be perfect; special requests should be given high priority.

The next group of customers (signified as *B-level*) is also significant, as they are considered highly profitable. However, in this category there are far more players, and each customer contributes relatively less to overall profitability than the A group. Although, there are too many B customers to manage each one individually, B customers do warrant significant attention. If there are overlapping needs among these customers (e.g., delivery requirements, packaging requirements, etc.), they should be segmented according to service requests. Managers should also identify which B customers could potentially become A customers, and form strategic plans to encourage this movement. Service levels to all B customers should be high and measured based on the customers' criteria – segmented where possible.

The next category, *C* customers, is marginally profitable. As such, these customers are "nice to have," but do not warrant special attention. This category includes a very large group of C customers, and each contributes slightly to profitability. It is clear that the strategic plan should never allow C customers to borrow resources that can be used for A or B customers. However, C customers should be strategically examined to determine which have the potential to move to B or even A level. Service to C customers will not generally warrant customized or highly specific service offerings. Rather, standard service packages or templates should be designed for C customers. For example, two standard shipment options with additional charges for expedited deliveries may be the delivery options available to this group. Deviations from standard packages should have identifiable added costs that would be incurred by the customer.

Members of the final group of customers, identified as *D*, are often unprofitable, and can reduce a company's overall profitability by 20 to 50 percentage points. It is not generally in our mindset to turn away customers – even when we recognize they are not profitable. When faced with this information, managers often want to keep serving D customers in the hopes that they may grow to be more profitable customers or, if they were at one time large customers, that they can rebuild the previous relationship. These are valid reasons for keeping some D customers — but not for the long term. Loss-generating customers should be managed on a transactional basis, where each specific transaction request is examined to determine if it is profitable. Only those profitable transactions should be allowed. In the case where losses are being accepted intentionally (e.g., to establish a relationship), those losses should be measured and controlled against a budget. In this case, the customer should move to a transaction-based status if the budgets are in jeopardy or fail to produce desired goals. Alternative methods to service these customers can also be considered, such as simply raising prices to reflect cost differentials (now more accurately determined), using a third party outsource (e.g., distributor or broker) to manage customer orders and reduce overhead, or sourcing the product from another company.

The benefit of this matrix approach is to provide managers with information to make better decisions that integrate operations-focused and customer-facing considerations. If there is a strategic reason to serve D customers, managers can at least understand and agree on this action while setting boundaries to minimize profit loss (e.g., limit the time to wait for a D customer to develop into a C customer). This approach is also not meant to be a way to justify sub-standard customer service.

Rather, it is a way to ensure that strategically planned service levels are actually achieved. In fact, when this matrix is used, customer service can actually improve for *all customers,* including D level customers. Table 2 illustrates an evaluation of a firm's ability to fulfill delivery commitments prior to as well as after instituting the matrix. In each customer category (A-D), the firm was able to significantly improve its delivery commitment after using this matrix.

TABLE 2

PERCENT PROMISES KEPT: BEFORE AND AFTER MATRIX WAS USED

	Customer Category			
	A	B	C	D
Pre-matrix % promises kept	78%	68%	55%	64%
Post-matrix % promises kept	100%	96%	91%	81%

When cumulative profits by products/SKUs are analyzed, they also tend to fall into the four categories described above: extremely profitable, highly profitable, marginally profitable, and unprofitable. For ease of explanation, products will be identified in this article as *1, 2, 3,* and *4* (to differentiate them from the categories used for customers). The management strategies of the four categories of SKUs are comparable to the customer-based categories described above.

It is quite clear that not every customer or every SKU should receive the same level of service or attention. This is not necessarily a new concept, although it flies in the face of tradition. ABC classification of customers and products has been described in various textbooks and articles as a method for managing inventory. However, what these previous discussions often lack is that there can be four (not three) segments of customers and SKUs that exist (extremely profitable, highly profitable, marginally profitable, and unprofitable) and that the real benefit comes from a combined analysis of both customer and product profitability. More importantly, the matrix provides the additional benefit of creating a common goal or "one-plan" mentality that can be used to build consensus across operations-focused and customer-facing managers – supporting internal integrative efforts. This paper extends previous research by forming a matrix that combines both customer and product (SKU) analysis (as shown in Figure 4) and by providing managerial insights on using this analysis to make better strategic customer/product decisions. From a quick glance at Figure 4, it is apparent that "A" customers, regardless of their SKU mix, deserve impeccable service. Even when an A customer needs a loss SKU, response should be perfect. On the other hand, there is no reason to justify selling a "4" product (unprofitable) to a "D" customer (unprofitable) as it is a lose-lose proposition. In the case where a "D" customer wants to buy a "1" item, then it calls for closer managerial attention to determine if the transaction is profitable or not.

FIGURE 4

CUSTOMER/PRODUCT ACTION MATRIX

Customer Category	Product Category 1	2	3	4
A	Perfection / Never Miss	Regular / Priority Schedule	Reserve Capacity / Inventory	Tough It Out / Outsource
B	As Promised	Regular Schedule	Schedule Capacity / Inventory	Redirect / Outsource
C	If Available / If Scheduled	If Available	Only if Capacity or Inventory are Available	Only if Transaction is Profitable
D	Respond to Transaction	If no Conflict	Only if Inventory is Available / Cull Candidate	Cull

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The process of cross-referencing customer and SKU profitability provides the most important insight because the matrix encourages cross-functional integration and decision-making across the operations-focused and customer-facing sides of an organization. Further, it provides a clear common measurement tool – profitability – that drives the cross-functional integration toward a "one-plan" mentality. Rather than customer-facing managers concentrating on volume or the *cost to serve* (opportunity to grow) and operations-focused managers concentrating on the *cost to provide* (minimize the cost), both groups can use the matrix to focus on overall profitability – minimizing cost and maximizing customer service.

Appropriate actions vary from "perfect service" in the upper left cell to "cull" in the lower right. Certainly, the most attention should be paid to the sweet spot of categories A-1 through B-2, where low cost and perfect response capabilities can deliver astonishing results in these four extremely profitable cells. In many companies, these cells account for a large portion of sales (50% to 75%) and generally close to 100% of total profits.

Some categories are likely to be painful to the operations-focused side, such as "tough it out" for unprofitable items being sold to A customers. The same holds true for the customer-facing side in dealing with D customers. While both D and 4 categories pose a challenge, it is important to recognize that each one represents a surprisingly small proportion of profit.

The matrix provides managers with far more data from which reasonable decisions can be made that empowers front-line managers to take more responsibility while providing more accurate information. In each cell, it is easy to identify the specific products and customers being addressed, their revenues and their profit contribution (or loss). In a direct and unbiased way, this model supports cross-functional actions and provides exact measurement of the impact customers and products have on profitability. This provides an excellent starting point for joint planning and synergy in decision-making between the operations-focused and customer-facing sides of an organization.[3]

In summary, it is clear that any movement from the bottom right toward the top left in Figure 4 is beneficial. A variety of activities – either operations-focused or customer-facing – can encourage this movement. For example, better sharing of information within the company as well as with suppliers and customers can assist in determining which B and C customers may be close to moving into a higher category and larger profit contributions. Certainly, when customers share more information about future plans (e.g., new product development, promotion, major opportunity), the cost to serve can be reduced by avoiding traditional "surprises." Newer relationship approaches, such as lean manufacturing and collaborative planning, forecasting, and replenishment (CPFR), can also impact cost to serve and cost to produce and could move a relationship toward the upper left corner of the matrix. Any actions that improve efficiency in the operating processes (e.g., product line efficiency, staggered sales incentives that coincide with production lows, improved scheduling) are also important. However, this matrix is not a "one-time only" tool. When significant costs change by customer (e.g., improved information sharing or redesigned ordering/delivery processes) or by product (e.g., production process innovation), the matrix must be updated to reflect accurate costing information. This is true over the life of the customer relationship and the life of the product.

DEMONSTRATED SUCCESS

This model has been used successfully at various firms. For a food manufacturer, the initial investment was a four-week activity based costing exercise that translated rough, unanalyzed data into actionable conclusions. Based on the analysis, 20% of the customers accounted for virtually all of the manufacturer's profit (A and B-level customers combined). The remaining 80% of customers were closely divided between C and D-level customers. The combined profit contribution of C-level customers (15%) was equivalent to the combined profit loss of D-level customers (-15%). In other words, had the D-level customers not existed, overall profit for the manufacturer would have been 15% higher.

[3] For more detailed information on specific strategies companies can use for each of the sixteen cells, please see Sabath (2003).

The results were similar for the analysis on SKUs, with 24% of SKUs accounting for 100% of profit (1 and 2-level SKUs) and 3-level SKUs (68% of total SKUs) taking that profit up to 115%. Again, 4-level SKUs generated a loss of 15%. When cross-referenced, a fascinating relationship developed. The top four categories, as shown in the upper left corner of the matrix in Figure 4 (A-1 through B-2) accounted for *67% of revenues and 98% of profits*. In addition, the matrix helped to dispel serious concerns about losing "D" customers and discontinuing "4" level SKUs. The reality is that A and B customers are the highest contributors to profit precisely because they purchase the highest profit-contributing SKUs. In other words, A and B customers predominately buy 1 and 2 SKUs – however, service of 3 and 4 SKUs may need to be continued in order to provide perfect service to A-level customers.

In another example, a manufacturer of seasonal appliances struggled with the challenge of improving service and reducing inventories. The matrix was developed, in this case, to focus the firm's manufacturing operations in a way that allowed a higher degree of production responsiveness. The goal was to improve turnover, particularly for slower moving items. The firm introduced a lean manufacturing process using Kan-Ban scheduling. The initial profitability analysis on SKUs assisted the firm in determining 1, 2, 3, and 4-level products, which allowed it to move to a make-to-order system for the slower SKUs (e.g., 3 or 4-level SKUs). The production lead-time on this make-to-order system was actually lower than the industry standard for delivering make-to-stock items. Further, the firm was able to produce faster moving items (categorized mainly as 1-level items) during the off-season to maintain a consistent production capacity while building a necessary level of inventory for high demand items. Overall, total inventories decreased (reducing the *cost to produce* on the operations-focused side) while customer responsiveness improved (improving the *cost to serve* on the customer-facing side).

This project also involved segmenting order cycle time by the Customer/Product Action Matrix to combine the operations-focused and customer-facing priorities. The average cycle time for all customers/products prior to the project was 28 days. With segmented service based on the matrix results, the cycle time changed dramatically (ranging 3 to 28 days), as shown in Figure 5. Service was either improved (in most cases) or stayed the same. The matrix allowed for a more systematic decision-making strategy to be developed. Absolutely no SKU/customer had any degradation in traditional service measures. Further, inventory and expedited transportation costs decreased significantly, production planning became more predictable, and customer satisfaction among the most important clientele increased dramatically.

FIGURE 5

CUSTOMER/PRODUCT ACTION MATRIX WITH SEGMENTED SERVICE EXAMPLE

Customer Category	Product Category 1	2	3	4
A	3 days	3 days	8 days	8 days
B	3 days	3 days	15 days	15 days
C	12 days	12 days	20 days	20 days
D	15 days	15 days	28 days	28 days

Measured by order cycle commitment

In another example, a company that lacked sophisticated management systems was able to benefit from the matrix by focusing efforts on only 12 customers (at the C or D-level) to target for movement to a B or C-level of classification. The 12 customers in this target group used the company as a secondary supplier. They had reservations about their primary supplier, but had not seen exceptional results in the past from the company. By focusing sales efforts on assessing each customer's specific needs, communicating daily with the operations staff, and by reserving and prioritizing operations resources (inventories and capabilities) for the special use of the target group, six of the targeted customers actually moved up one level of classification in the first year. This small improvement increased profits by more than 20% – a compelling argument that it was definitely worth the minimal cost and effort.

A critical aspect of this example included the creation of average profit contributed by each customer category. The results were very surprising. Calculating average profit across each row of Figure 4 (e.g., A-1, A-2, A-3, and A-4) showed that the average profit per customer per year in the A category was $1,500,000, in the B category was $45,000, in the C category was $450. The D category, not surprisingly, showed significantly lower average profit – only $30 per customer per year.

MANAGERIAL IMPLICATIONS

This matrix is an excellent tool for driving cross-functional integration in the firm. It allows managers from historically separated focal points (operations-focused and customer-facing) to work together to form a common and easily understandable strategic plan. The plan is based on profitability as well as customer and product/SKU cumulative sales, meaning that the plan will be in line with the goals of top management. It provides a relatively quick and inexpensive tool for driving consensus decision-making that can be routinely reviewed and updated as costs and services change. Further, it can drive customer-facing goals regarding targeting and grooming customers for higher levels of contribution.

While there may be concern that the matrix would position high volume customers at a D-level, experience has shown that the highest volume customers were virtually all profitable and were categorized as either A, B, or C-level. Further, in reviewing lost customers, it was discovered that when customers moved to another supplier over a disagreement on price, the lower price demanded would have moved the customer into the D category. In other words, had the customers' requests for a lower price been honored, the customer would have produced a profit loss. This fact alone was a relief to many of the customer-facing managers who were disappointed about losing what they thought was "an important customer."

Additionally, where the process produces surprises, they often lead to very positive solutions. For example, one firm was surprised when a significant customer, whose purchases were made at a high margin, was classified in the C category. Upon further investigation, it became apparent that the company was the only customer in a large geographic area. Since the product had a short shelf life, premium freight was used, so transportation, sales and service costs were unreasonably high. By targeting sales efforts in the area, the company developed several new customers that allowed product to be transported on a truckload basis – thereby reducing the costs to serve the original customer. Profits generated in the area increased by a factor of 15 – and the original customer moved from a C to a B category.

Another interesting insight from the matrix is that a customer considered "marginal" may actually be highly profitable and a customer considered "unprofitable" might actually be profitable. This illustrates that management perception may not accurately reflect hard data on profitability. Further, volume will not always determine whether a customer is profitable or not – a small volume customer who always orders 1 or 2-level products may be highly profitable.

Another situation to consider is a multi-tier customer, e.g., a customer who purchases product as part of the parent company and as part of a subsidiary to the parent company. In this case, the total sales generated from both purchases should be considered. For example, suppose the parent company purchases highly profitable products, but the subsidiary (e.g., it is the research and development arm of the parent company) purchases only specialized and often unprofitable products. While

the R & D sales generate a loss, the parent company sales generate a significant profit. If the overall profit is positive, the relationship should be maintained and the "losing" R & D business unit should be categorized at the same level as the parent company.

Many companies use standard costing even though their management understands the value of true costing (as exemplified, for example, by ABC). In some cases, managers are unwilling or unable to change their cost accounting process, and may determine they cannot use the Customer/Product Action Matrix. However, the matrix can accommodate standard costing methods. Since standard costing spreads overhead costs peanut butter-style over all direct costs, it understates the contribution of highly profitable customers and SKUs (A and 1-level) and overstates the profitability of losers (D and 4-level). Under standard costing, losers often appear to at least break even. Still, the relative rankings will help focus efforts, and the resulting activities enable cost and contribution adjustments, which accurately support the practices described in this article. While the data will not be as accurate, it is still a useful exercise.

Finally, improvements that can be made to the firm's processes are often pretty minor and not very costly to implement. Yet, these improvements can yield major cost reductions and improvements in service. The improvements that can be made to the customer-facing processes can be as simple as dropping unprofitable product (4-level) offerings to loss customers (D-level). Companies who have used this strategy were able to increase profits significantly at no additional cost. Further, by identifying the cells that had adverse effects on profitability, the company's management was able to focus its efforts and recognize where investments could provide profit improvements. Often the effort is as simple as adjusting pricing to accurately reflect costs in order to avoid selling the SKU at a loss. With such unbiased focus and exceptionally small investment, profits can increase dramatically – from both *cost to produce* and *cost to serve* components. Further, this methodology can highlight a prioritization of relationships where more advanced supply chain integration efforts are likely to be beneficial. For example, customers often request developing advanced programs, such as CPFR or Vendor Managed Inventory (VMI) arrangements. This matrix provides a quick glance at which relationships offer the best potential for success as well as provide the highest degree of risk.

CONCLUSION

The Customer/Product Action Matrix is surprisingly simple to use. Applying total costing techniques, such as ABC, can capture the right costs and determine customer and SKU profitability. Even if the information is less than thorough, it is better than the information currently being used to drive decisions, and having the ability to regularly reevaluate this information is a key benefit. Most importantly, the process is unbiased and provides a common "one-plan" measure to guide decision-making from a cross-functional standpoint. Both the operations-focused and customer-facing sides can agree to the results of the Customer/Product Action Matrix and can work jointly to develop strategies for each of the cells of the matrix.

The matrix does have some caveats that need to be considered. For example, when a new product or customer is introduced, inadequate history may be available or volumes may be insufficient to truly represent reality in a costing model. In such cases, volume and cost estimates should be used, and be reevaluated once more reliable data exists.

Second, production calendars may force special situations, such as requiring advance production or different sourcing to support an offshore plant. One scenario where this is likely to occur is when an offshore plant or supplier is closed for an extended holiday. Another factor to consider is how quickly fixed costs can be adjusted and whether or not there is potential for removing or adding capacity quickly. This situation is especially critical for seasonal items (e.g., fashion, holiday products) or in capital-intensive manufacturing operations.

Finally, there are pitfalls in terms of collecting data as suggested by the phrase, *GIGO* (garbage in, garbage out). Data can be corrupted in multiple ways, such as inconsistent reporting, incorrect categorization or cost assignment, inaccurate information, or incorrectly translating blanket allocated costs into direct costs. Further, the bridge between standard and activity based costs can be more difficult to cross when standard costs have regularly incurred data problems (e.g., mismeasurement, inaccurate inventory levels, promotional inaccuracies). Firms that are concerned with data accuracy can work with any of the various companies that provide solutions and software that can use the company's existing systems to translate standard cost information into highly accurate, activity costing data (e.g., ACORN Systems).

In spite of these caveats, it is clear from the case examples provided that the Customer/Product Action Matrix offers significant potential advantages. For example a firm can improve profit by a significant amount (perhaps 5-15%) without adding any costs – just by reducing D customers and 4 products. Or, improvements in profit can occur through better clarification of which customers and products are extremely or highly profitable. Strategies can be tailored to ensure zero defect service is applied to the extremely profitable customers/products to meet the high service expectations surrounding these situations.

NOTES

Bookbinder, James H. and Feyrouz H. Zarour (2001), "Direct Product Profitability and Retail Shelf-Space Allocation Models," *Journal of Business Logistics,* Vol. 22, No. 2, pp. 183-208.

Bowersox, Donald J., David J. Closs, and Theodore P. Stank (1999), *21st Century Logistics: Making Supply Chain Integration a Reality,* Council of Logistics Management, Oak Brook, IL.

Bowersox, Donald J., David J. Closs, and Theodore P. Stank (2000), "Ten Mega-Trends that will Revolutionize Supply Chain Logistics," *Journal of Business Logistics,* Vol. 21, No. 2, pp. 1-16.

Braithwaite, Alan and Edouard Samakh (1998), "The Cost-to-Serve Method," *International Journal of Logistics Management,* Vol. 9, No. 1, pp. 69-84.

Brown, Terence D. and David M. Bukovinsky (2001), "ECR and Grocery Retailing: An Exploratory Financial Statement Analysis," *Journal of Business Logistics,* Vol. 22, No. 2, pp. 77-90.

Cooper, Robin and Robert S. Kaplan (1991), "Profit Priorities from Activity-Based Costing," *Harvard Business Review,* Vol. 69, No. 3, pp. 130-135.

Fawcett, Stanley E. and Gregory M. Magnan (2002), "The Rhetoric and Reality of Supply Chain Integration," *International Journal of Physical Distribution and Logistics Management,* Vol. 32, No. 5, pp. 339-361.

Frankel, Robert, Thomas J. Goldsby, and Judith M. Whipple (2002), "Grocery Industry Collaboration in the Wake of ECR," *International Journal of Logistics Management,* Vol. 13, No. 1, pp. 1-16.

Goldsby, Thomas J. and David J. Closs (2000), "Using Activity-Based Costing to Reengineer the Reverse Logistics Channel," *International Journal of Physical Distribution and Logistics Management,* Vol. 30, No. 6, pp. 500-514.

Kuglin, Fred A. (1998), *Customer-Centered Supply Chain Management: A Link-by-Link Guide,* New York: AMACOM.

Lin, Binshan, James Collins, and Robert K. Su (2001), "Supply Chain Costing: An Activity-Based Perspective," *International Journal of Physical Distribution and Logistics Management,* Vol. 31, No. 10, pp. 702-713.

Martin, Christopher (1998), *Logistics and Supply Chain Management: Strategies for Reducing Cost and Improving Service,* 2nd Ed. London: Financial Times-Prentice Hall.

Sabath, Robert E. and Himanshu Kumar (2001), "The Advantage of Digital Loyalty Networks," *Supply Chain Management Review,* (March-April), pp. 66-73.

Technomic Press Release (2003), http://www.technomic.com/news_willard.html, February 11.

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