White Paper

Building the Profit Focused Supply Chain:

A Game Plan for Capturing Real Value

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Executive Summary

The authors propose a new framework for supply chain collaboration that identifies greater profit improvement opportunities than current approaches by providing better financial visibility with more accuracy and by fostering greater partner buy-in. In addition, it is easier to implement and maintain/sustain. Furthermore, the authors explain how a company can implement and roll out this new approach across its supply chain. Profit-Focused Supply Chain Management (PFSCM) leverages the new Time-Driven Activity Based Costing (TDABC) approach, which was discussed in a previous paper published in the November 2004 issue of the Harvard Business Review by Steven R. Anderson and Dr. Robert Kaplan. With this new approach, companies can clearly understand resource consumption within their company and with supply chain partners (e.g. customers and suppliers). Not only does PFSCM allow high level visibility into supply chain performance, but it also allows a company to take a much more granular approach to its supply chain and analyze the inefficient process links that drive the interaction and costs with its supply chain partners. Supply chain partners who have implemented TDABC can share not only their cost metrics (e.g. cost per drop) along process links (e.g. Delivery-Receiving), but also their process models. This allows them to understand how events are driving time spent and resource consumption by each company throughout its process links. Identifying these core process triggers in the supply chain can help align supply chain partners toward capturing enormous profit improvement. ***The authors believe that the profit improvement opportunity through this sort of collaboration is larger than the traditional, sometimes adversarial supply chain initiatives previously attempted:***

> The popular Integrated Supply Model of the 1990's naively assumed that the supply chain partners all had reliable open systems by which they could easily integrate their transaction data
>
> Procurement Programs ignored the fact that the lowest price does not always mean lowest cost, and completely disregarded the importance of relationships within the supply chain
>
> And today, the hot Revenue Management and Pricing models are likely to face a similar fate. By focusing entirely on revenue and external demand, companies often disregard cost to serve in the supply chain. This might ultimately bankrupt a company. Furthermore, these bad policies can have a deleterious effect throughout the supply chain

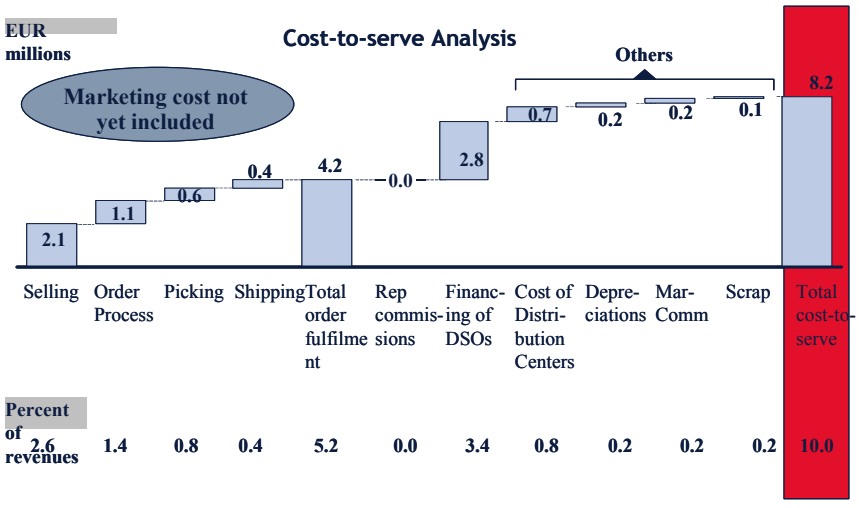
To improve a company's supply chain initiatives, PFSCM recognizes that understanding detailed, accurate transaction time, resource consumption, and cost data along the

individual process links is critical to effective and profitable supply chain policies. It has the following good characteristics:

Enables more accurate / detailed analysis of the supply chain, by focusing on the individual steps of the process links
Enables identification of the true drivers (e.g. defective items) of complexity and time for both partners (e.g. the vendor and the customer)
Identifies more quickly the sub-optimal, high cost supply chain link pairing
By leveraging TDABC, it can measure true cost and profitability of these processes, and enable what-if games to be individually and mutually played by participants
Facilitates systematic roll-out across supply chain by repeating previous steps
Enables win-win scenarios to be identified and tested before action is taken
Enables continuous measurement of the performance improvement to share with all stakeholders

What results is a much more expansive view of the total cost to serve. Chart 1 depicts a classic McKinsey waterfall chart with a more robust analysis of cost to serve. This rich detail is now available through PFSCM for each customer and vendor, resulting in much greater success in supply chain negotiations.

Chart 1. Traditional Price Waterfall Chart to Highlight Cost to Serve



This paper will review case studies of several companies who have implemented this new approach and trace their implementation steps. There will also be several examples of failed projects using the traditional models.

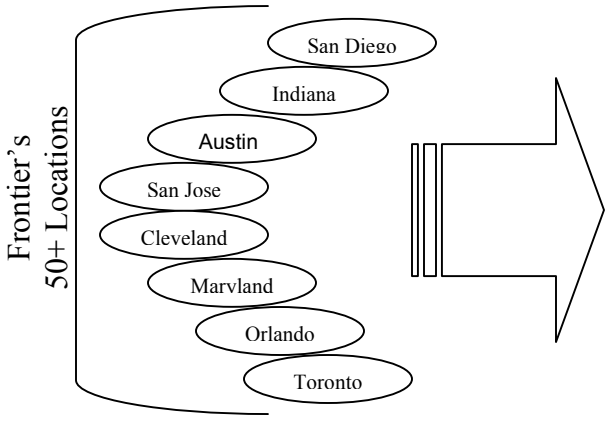
Profit-Focused Supply Chain Management

In 1998, **Clairmont Semiconductor** (actual name is disguised) decided to implement activity-based costing in order to evaluate the profitability of its customer base. What it soon learned was that many of its large distributor customers were extremely unprofitable, especially a distributor called **Frontier Electronics** (IED Division; actual name is disguised).

At the same time, Frontier was conducting its own study to analyze the profitability of its vendors. They soon learned that one of its largest vendors, Clairmont, was also unprofitable for Frontier.

Coincidentally, both firms hired the profit improvement firm, Acorn Systems, to model their business. Acorn was intrigued with the findings and was curious to understand the root cause of the simultaneous losses. Reviewing the details within the respective models was a logical next step. From Clairmont's vantage, Frontier was unprofitable as a result of high order processing, picking, packaging, and delivery costs. From Frontier's vantage, Clairmont was unprofitable as a result of high purchasing, receiving, inspection, and stocking costs. These findings make sense. Many of these activities are linked between the two firms. Inefficiency by one firm drives inefficiency at the next firm. It was not difficult to identify a potential source of inefficiency. Frontier was a sprawling, 50-facility company with decentralized purchasing and inside sales departments. As a result, Frontier had a fragmented sales and procurement cycle – different locations might be placing small orders simultaneously with Clairmont. Some of this autonomy was by design, due to the nature and usage of the product. Semiconductor chips have a short life span, and their usage can be very unique. For example, a customer of Frontier's may be working with Frontier engineers to design custom assemblies, and require specialty semiconductor chips from Clairmont. A centralized purchasing department may have difficulties communicating these instructions. Decentralization may have worked great for Frontier, but the repercussions upstream were very costly for Clairmont (see below).

Chart 2: Broken Supply Chain for Clairmont



More customer points
Increased # of orders
Decreased order size
Increased customization
Increased technical support
Expanded billing and AR
Increased # SKUs
Increased # shipments

More resources consumed, resulting in INCREASED COST, More room for error!!

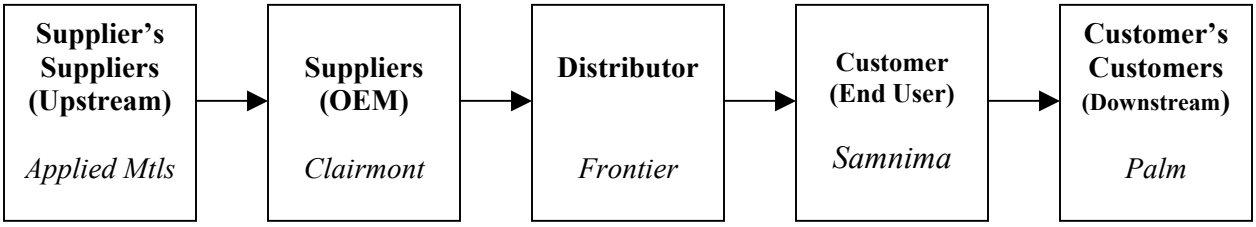
It is obvious that more orders from Frontier trigger a chain of costs throughout Clairmont. How widespread is the impact (e.g. what other processes are impacted)? What is the total cost? Where is it occurring? What can be done? Why doesn't Clairmont pick up the phone and call Frontier? Who would make that call? Who specifically would they call? What would they ask of their partner?

Never before had either company had so much rich detail about their supply chain relationships, information that could have facilitated win-wins from collaboration. However, for revenue-focused organizations like these two, proposing changes within the supply chain relationship of a large partner was considered taboo. The Net-Net: nothing was done, and both companies considered the other a "profit loser."

Why Are Supply Chains So Complex?

Supply Chains are as old as business itself. The *physical trading* of goods between companies to support another company's manufacturing or services has always been around, as well as negotiations regarding *storage* of those goods. And understanding and *comparing costs* from different prospective partners was also commonplace. Comparing *different transport options* between ship, railroad, or mule was common since the 1800s, and is still common today in developing countries. A Supply Chain defines the network of relationships that exist between businesses to fulfill the needs of different customers. In the earlier example, Clairmont is just one of many vendors of electronic components that supply Frontier, who in turn supplies its customers. A common way of depicting these relationships is in Chart 3.

Chart 3. Simplified Electronics Supply Chain

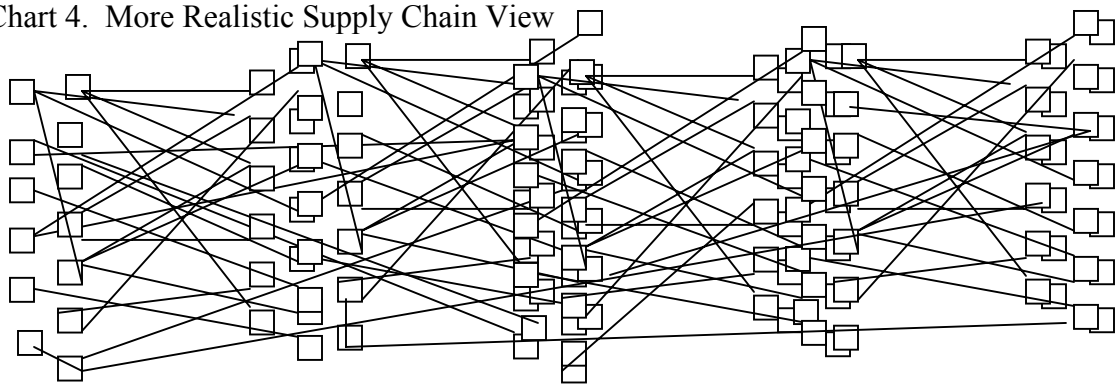


Of course, the real world is not as simple as this. In the case of Frontier, Clairmont is just one of 100 suppliers. Samnima is just one of 10,000 customers. Palm is just one of 1,000 customers of Samnima. And for Clairmont, Applied Materials is just one of 100 suppliers. In a perfectly linear, sequential supply chain, the # of relationships for the Frontier supply chain is a multiple of the number of options, or…
=(# supplier's suppliers) x (# suppliers) x (1 distributor) x (# Customers) x (Customer's customers)

=100 x 100 x 1 x 10,000 x 1000 = 100 billion relationships

And to complicate things a little, Frontier is just one of 100 distributors. Furthermore, each block has its own network where it sits. But wait, the supply chain is not that simple, Applied Materials is also selling direct to Samnima, Frontier, and Palm. The chain is hardly a chain anymore. It is a tangled web.

Chart 4. More Realistic Supply Chain View



The number of interweaving relationships is the total number of options at each level, or:
= [100+100+1000+10000+1000] ^5 = 2.7 quintillion

For more complexity, what about adding a layer for different facilities? As we discussed earlier, we should use 60 for Frontier in this calculation. Each of their partners has multiple shipping points as well. Forget 2.7quintillion; the network grew to a size virtually impossible to analyze.

Why has the supply chain become so complicated? First, transportation options are growing. For example, an expansion in air traffic over the years has led to a continued decline in shipping costs. Today a plethora of freight forwarders and logistics companies are transporting product all over the world on a timely basis. Second, additional suppliers enter the market. Suppliers for your new Asian market will now come from not just Asia, but from all over the world. Trade continues to open as economies democratize. Steel service centers no longer have to choose from a handful of domestic suppliers. Today, millions of tons of low cost Chinese, Russian, and South American steel are being imported. This is true of drug and entertainment product imports from Canada, wine from Australia and Chile, textiles from Southeast Asia, and oil from Nigeria. Third, the number of products has mushroomed, with companies truly embracing mass customization without understanding its impact on their bottom line. The net-net: the number of supply chain opportunities for companies is out of control!

As supply chain trade continued to increase as a % of the overall economic value, companies began scrutinizing their return from this arena. What could they do to boost profitability? The areas of focus often centered on the five most visible dimensions of the supply chain:

1) Procurement costs. Can we expand the network to identify lower cost substitutes? Can we create more competition between suppliers to solicit better deals? Goal: sustainable cost reduction of 1 to 5%.

2) Revenue: Can we change our pricing to maximize total revenue? Can we use "price discrimination" techniques to penetrate new markets? What additional channels can we employ? Goal: A sustainable revenue increase of 5 to 10%.

3) Inventory: Can we consolidate inventory physically and set up supply virtually? Can we push inventory to our suppliers or customers? Goal: A reduction in inventory by 20%.

4) Logistics: Can we employ backhaul techniques to lower overall logistics? What are possible gains from optimizing routing? Goal: Reduction in delivery expense by 10%

5) Capacity / Resource Utilization: Are we picking the best/highest ROIC business for your capacity? Can we identify where excess capacity can be shifted? Goal: A sustainable increase in capacity utilization of 10%.

Problems with Traditional Supply Chain Solutions

True supply chain optimization requires understandable, timely and accurate measurements of performance. There needs to be a common language and common goals between partners. There also needs to be active involvement and support by these partners. This is where things began to fail.

BAD DATA. Getting good data on your internal operations is difficult, but achievable. But try to get purchasing and sales forecast data simultaneously from over 100 supply chain partners of **Walmart**. This is what **Atlas Commerce** tried to pull off. The larger suppliers were OK. But that was only a dozen of Walmart's 1000 suppliers. When it comes to supply chain integration, **progress is often governed by your slowest pupil**. But in this case, most of the class was failing. Mid-market suppliers, which comprised the majority of Walmart's partners, were not ready for this new paradigm. After spending over $30 million dollars and countless man-months of works, Walmart cancelled the project.

The data can also be inaccurate or misleading. Having measurements for standard supply chain processes (e.g. delivery, packaging, servicing) is critical to forging a healthy relationship. But if your measurements are wrong, the problems can grow exponentially. Clairmont discovered that its traditional costing systems greatly underestimated outbound freight. Because of the large number of customers who were being undercharged, this had grown to a $2.4 million oversight. By nature, supply chain problems become BIG problems.

INCOMPLETE PICTURE. When Clairmont contracted Talus to optimize its pricing, it was under the most noble of intentions. After all, semiconductor chips have short shelf-lives, and so determining prices that will get them off the shelf is a good thing. Talus fast tracked that process by using sophisticated demand forecasting algorithms to test the true elasticity in the marketplace. And it worked, as it had with other demand based pricing programs. One problem: many of the programs fail to reflect the true cost picture in its optimization engine. Often, the ideal prices are below the fully loaded cost of the product once selling, order processing, picking, assembly, packaging, delivery, and collections are factored in. So in reality, the company was really just accelerating its losses.

Findings are often too high level. At **J&B Wholesale**, COO Kurt Anderson long suspected that **Golden Plump** was one of the least profitable vendors. Running some preliminary vendor analysis confirmed his suspicions. But having high-level findings could not detail what changes were necessary. He was limited to asking for more rebate dollars. Having gone through a more thorough ABC analysis, he soon learned that the major drivers of cost were associated with re-packaging issues. It was not necessarily promotional allowances he needed but packaging that met his shipping requirements.

INTEGRATION MAYHEM. **Integrated Supply** was an elegant concept on paper, as many roll-ups were. Combine several synergistic, privately held industry leaders together and integrate their systems to provide one stop shopping for the industrial customers. From electrical goods, to pumps and motors, to valves and seals, everything could be sold simultaneously. Never mind that all 6 companies had different cultures, business policies, operating procedures and ERP systems. Just get them in a room together and show the meteoric rise of the stock price when the monstrosity is taken public. The reality is that actual integration extends well beyond the patience of management and public investors.

ADVERSARIAL HISTORY: In 1998, **Dresser Valve** was convinced that its distribution channel of Green Tag Centers and MARCs were generating most of the profit, and began contemplating moving downstream into this space. Acorn advised against this move, indicating this was not a good fit for Dresser – the margins were much lower than they suspected, and the cost structure was even lower. A large, sprawling organization like Dresser had too much overhead to be competitive. Unfortunately, Dresser ignored the information, and acquired the first distributor Elliott Valve. The experiment failed. Tensions grew in the distribution channel, no more distributors were acquired, and several top executives lost their jobs. Needless to say, the relationships between this supplier and its customers became more adversarial.

Process Based Supply Chains

With all of the data, systems, and organizational complexities associated with a massive supply chain, it is understandable why most supply chain analysis focuses at the level of the business entity, or in this case at the company level. And most decisions

appropriately focus on selecting the ideal node, based on simple revenue, cost or capacity. Should we buy from ABB or Siemens? Should we source from Cleveland or Detroit? Furthermore, most supply chains are within two levels (e.g. Supplier and Distributor). The analysis is simplistic (e.g. cost, price, volume, capacity).

As one explores the interactions between these entities, one finds that the entities themselves are not the sources of cost, revenue or capacity. The fact that there are potential customers down the road from your plant does not mean your revenue increases. Transactions with a customer drive revenue. Analyzing these transactions illuminate a myriad of hidden costs, costs that are often forgotten in traditional supply chain studies.

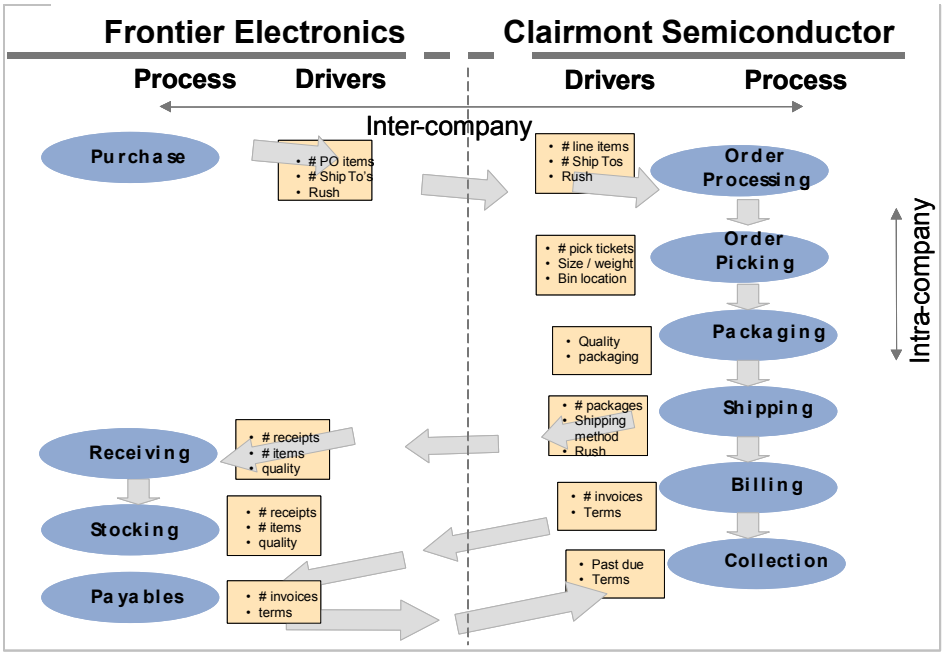
Table 1: Sample Activities Associated with Serving Client

Selling	Quoting	Order Processing
Order Picking	Order Assembly	Quality Control
Packaging	Shipping	Delivery
Installation	Customer Service	Billing
Collections		

As you can see in Table 1, this is not an insignificant level of activity. This standard level of support can represent anywhere from 10 to 40% of a company's revenue. Therefore, in order to analyze and optimize the supply chain, you must get down to the process and transaction level. Actual transaction costs can vary significantly from customer to customer. Ignoring this can greatly sway results.

In reality, **supply chains are much more granular**. The actual interactions are not from company to company, but rather facility to facility; department to department; and even person to person. Let's revisit the Frontier / Clairmont example. The supply chain representation in Chart 3 was too high level to identify problems. And if it were to identify pricing or cost advantages between two vendors, it ignores the true cost of procurement. A process map like Chart 5 can highlight where actual activity is occurring. The individual processes, including their action steps, are what consume resources (time and money). For example, when an inside sales representative from Clairmont processes an order from Frontier, he goes through a series of steps, each of which takes time. Extrapolate this across all orders from Frontier, and we get a whole bunch of time spent on order processing. But, we can also see how this triggers other processes at both firms creating more time and cost. Chart 5 illustrates the triggering effect along the supply chain.

Chart 5. Frontier / Clairmont Supply Chain Link



The good news is that the data drivers for this process are tracked in the ERP system. The linkage of these processes creates the supply chain. Fortunately for the modeler, most of these processes are attached sequentially to one other process. We call this a link pairing. We can characterize links as being Direct or Indirect. A Direct link is where one process leads directly to another process. An Indirect link is one where the process distantly affects another process. Indirect links can also be called Passive links. One final characterization worth noting is whether the link is Positive or Negative. A Positive link is where the more of process x leads to more of process y. Negative links are the opposite. For example, if company X decides to do the kitting before it ships to Company Y, then Company Y does less kitting. Another way of describing a Negative Link is "zero sum." There is a set amount of work to be done between the two partners. If Company X does more, then Company Y can do less. See Table 2 for sample links.

Table 2. Sample Link Pairings Between Supply Chain Partners

Vendor	Customer	Link Type
Selling	Listening	Positive, Passive
Quoting	**RFQ / Inquiry**	**Positive, Direct**
Order Processing	**Purchasing**	**Positive, Direct**
Picking	Purchasing	Positive, Indirect
Shipping	Purchasing	Positive, Indirect
Shipping	**Receiving**	**Positive, Direct**
Outbound Inspection	Inbound Inspection	Negative, Direct
Receiving Return	**Shipping Return**	**Positive, Direct**
Billing	**A/P**	**Positive, Direct**
Customer Service	**Complaints**	**Positive, Direct**
Collections	**Payment**	**Positive, Direct**

Not all links are equally important for supply chain analysis. Positive direct pairings offer greater opportunity for active involvement by both partners to identify win-wins. This is in sharp contrast to Negative and Indirect links. A Negative link would lead to more selfish behavior. Of course, if your supply chain partner is not willing to collaborate, these Negative links can be exploited to a company's advantage. Lewis Goetz realized that performing inbound inspection on Dayco products was costly because of the high defect rate. Lewis Goetz sought price concessions, but Dayco rejected it. As a compromise, Lewis Goetz was able to convince Dayco to perform an extra outbound inspection step to improve shipment adherence and product quality.

It also makes sense to focus on the high cost link pairings. For example, for food partners like Golden Plump and J&B Wholesale, focusing on Shipping-Receiving makes much more sense than Customer Service-Complaints.

For Clairmont-Frontier, one of the most costly Positive Direct Links is Purchasing / Order Processing, primarily because of the many Indirect Links that spawn from Purchasing. While Frontier may perceive that they benefit from decentralized purchasing, in the long run they may lose through more receiving, inspection, and stocking at remote locations ill-prepared to handle the volume. Let's analyze the cost ramifications of Frontier's ordering pattern along the Clairmont-Frontier supply chain. By employing Time Driven Activity Based Costing, we generate fully loaded cost of each process (**Cp**), estimated capacity time of each process (**Tp**), and time estimates for each process step (**Tpu**). This gives us the fully loaded cost per each process step (**Cpu**). Monthly results for the processes of Chart 5 can be found in Table 3.

Table 3: Calculation of Fully Loaded Cost of Process Steps

Process	Fully Loaded Process Cost		Capacity Time		Unit Time for Process		Cost per Process Unit
	Cp	**/**	**Tp**	**x**	**Tpu**	**=**	**Cpu**
Purchasing	$400,000		500,000		12.5 minutes		$10 per order
Order Process	$1,000,000		2,000,000		20 minutes		$10 per order
Picking	$5,000,000		4,000,000		1.67 minutes		$2 per unit
Packaging	$250,000		500,000		2 minutes		$1 per unit
Shipping	$2,400,000		600,000		5 minutes		$20 per order
Receiving	$1,200,000		400,000		5 minutes		$15 per order
Stocking	$2,000,000		2,000,000		2 minutes		$2 per item
Billing	$200,000		40,000		2 minute		$10 per order
Payables	$100,000		50,000		2.5 minutes		$5 per order
Collection	$50,000		50,000		20 minutes		$20 per order

In this case, let's assume that 50 locations of Frontier were ordering 5 times every week from Clairmont, or 13,000 orders per year were placed for 10 items on each order (or 130,000 items). An ideal state would be a centralized purchasing department ordering one larger order per week (2,500 items on order), whereby the product would be shipped to one central Frontier warehouse. See Tables 4a and 4b to view the savings by moving to a more ideal order pattern.

Table 4a. Frontier Process Chart

Process	Current #	Current Process Cost	Total Cost	Ideal #	New Process Cost	Total Cost
Purchasing	13,000 orders	$10 per order	130,000	52	100 per order	5,200
Receiving	13,000 orders	15 per order	195,000	52	100 per order	5,200
Quality In	*130,000 units*	*1 per unit*	*130,000*	*130,000*	*0.5 per unit*	*65,000*
Stocking	130,000 units	2 per unit	260,000	130,000	1 per unit	130,000
Payment	13,000 orders	5 per order	65,000	52	50 per order	2,600
			$780 K			**$208 K**

Table 4b. Clairmont Process Chart

Process	Current #	Current Process Cost	Total Cost	Ideal #	New Process Cost	Total Cost
Processing	13,000 order	10 per order	130,000	52	100 per order	5,200
Picking	130,000 units	2 per unit	260,000	130,000	1 per unit	130,000
Packaging	130,000 units	1 per unit	130,000	130,000	0.5 per unit	65,000
Delivery	13,000	20 per order	260,000	52	100 per order	5,200
Billing	13,000	10 per order	130,000	52	50 per order	2,600
Collections	13,000	10 per order	130,000	52	50 per order	2,600
			$1,040 K			**$211 K**

How does this compare if either Frontier or Clairmont would have employed more traditional supply chain methods? Let's first look at the numbers that Frontier was viewing on the profitability of Clairmont (see Table 5).

Table 5: ABC P&L for Clairmont

	Amount	% of Revenue	Company Avg
Revenue	9,684,000	100%	100%
Direct Cost	7,620,000	78.69	82.98%
Gross Profit	2,063,172	21.31%	16.74%
ABC Indirect Costs	2,672,316	27.60%	14.86%
Profit	- 609,144	-6.29%	+1.87%
Outside Sales	420,000	4.33%	2.20%
Inside Sales	300,000	3.10%	1.20%
Accrued Interest	245,808	2.54%	0.78%
Inbound Freight	169,272	1.75%	0.80%
Picking	77,472	0.80%	0.17%
Packaging	43,578	0.45%	0.06%

These numbers corroborate our findings from Tables 4a and 4b. As we analyze the results, we notice a tremendous amount of decentralized effort regarding Clairmont. In Frontier's case, both inside and outside sales at the branches are getting involved in purchasing / ordering product from Clairmont. That explains a cost that is double other vendors. Meanwhile, accrued interest is significantly higher as Clairmont products sit as inventory in all of the remote branches. That explains all of the inbound freight as

Clairmont is shipping thousands of small shipments to all of these branches. Picking and Packaging will be higher as well as every branch is doing a little bit of it. This decentralized model is far less efficient than a central warehouse performing this operation. So what should Frontier do?

First, was Frontier even aware that it had a problem with Clairmont? Most ERP systems are incapable of analyzing vendor expenses below the gross profit line. Frontier looked at Clairmont as a big winner, generating $10 MM in revenue and over $2 MM on gross profits (higher than most other vendors). Pre-ABC, they would have had no idea of the true cost of selling Clairmont products. But let's assume that they were aware. Traditionally, Frontier would turn to two tactics: Reduce purchase cost, or raise pricing.

Procurement Tactic: With gross profits significantly higher on Clairmont products, it is unlikely that asking for lower prices from Clairmont would work. But let's assume that Clairmont would concede a 1% drop in their prices, the resulting impact for Frontier: $76 K. A similar sized loss for Clairmont.

Revenue Tactic: If Frontier could raise prices by 2%, the resulting impact would by $182 K. A little bit better, but still far off the savings created by consolidating purchases. No gain for Clairmont.

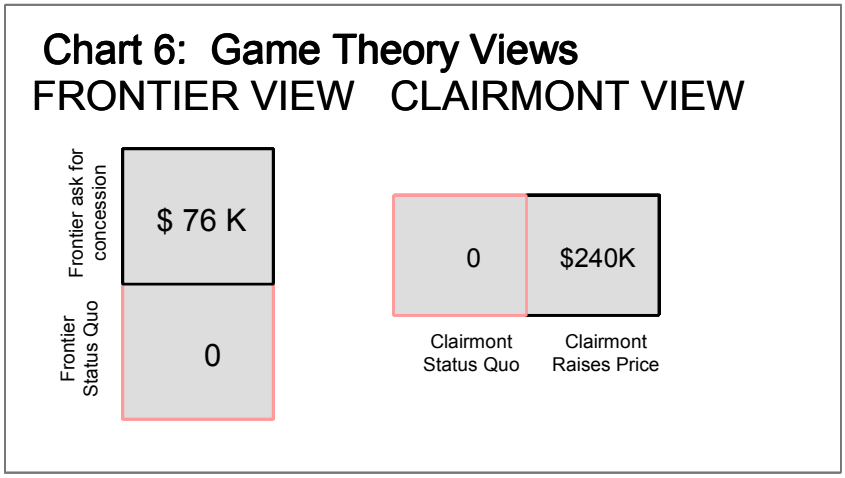
Again, let's contrast this to the PFSCM approach and the gains expressed in Tables 4A and 4B. Frontier saves $572 K per year, while Clairmont saves $829 K per year. ***So for collaborating to improve just one link in the supply chain, close to $1.4 million is saved! Think about the total supply chain opportunities if this is rolled out to Clairmont's 10 largest customers, or alternatively Frontier's 10 largest vendors.***

So why isn't Frontier on the phone with Clairmont? First, Frontier has no way of knowing Clairmont's findings. Less than 1% of Fortune 1000 companies have implemented an enterprise-wide profit analytics solution that is granular and accurate enough to support this approach. Why? While over 20% of Fortune 1000 companies have implemented ABC in some form, most of these did so using the traditional approach that made it difficult to scale[1] and so granular analysis was inaccurate. Business process complexity was almost impossible to model. Therefore, most could not generate a holistic, fully loaded cost view of one specific customer. It would have been rare for one of their vendors to have performed this same analysis. In addition, while most of the Fortune 1000 companies have some sort of profit analysis taking place in their organizations, the accuracy and granularity required to support the PFSCM approach is severely lacking. The norm is for high levels of "averaging" to take place which "hides" the real opportunities for cost/profit enhancement.

Second, there is the matter of trust, as mentioned earlier. Given the adversarial relationships that have built up over years of often one-sided negotiating, how and why should companies change their approach now? It's a given that when companies

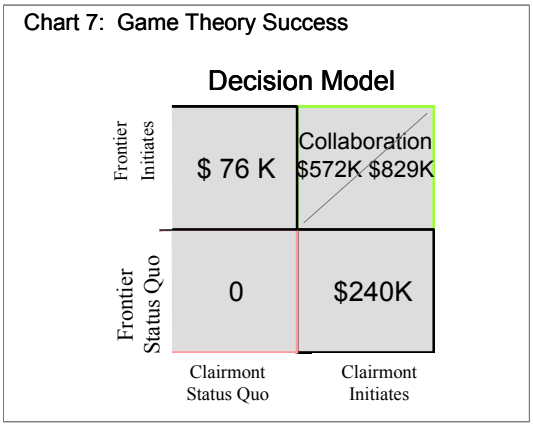
[1] See *Time-Driven Activity-Based Costing*, Robert S. Kaplan and Steven R. Anderson. Harvard Business Review, November 2004.

negotiate, they rarely look for win-win opportunities and are usually negotiating with their own best interests in mind. This is where Game Theory comes in. Chart 6 displays the different views from the perspective of each.



The perspective by both is one-sided. The assumption is that the other party lacks this information, and therefore "he who has it on paper wins." But are the opportunities for each large enough to jeopardize the relationship with such a large supply chain partner? Knowing what we do about each (that they both have equally damning information), is there any chance of success of either? Frontier wants a lower purchase price while Clairmont needs a higher price. These are contradictory. So when Frontier asks for the 1% concession, Clairmont is of course going to reject it. And when Clairmont counters with a 3% increase in the sale price of its semiconductors, Frontier will have to push back or begin looking for alternative sources of DRAM chips. We are witnessing a classic stalemate.

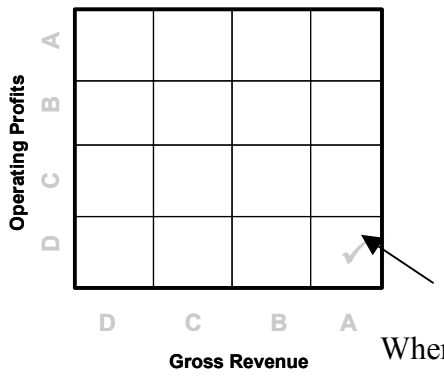
Profit-Focused Supply Chain Management expands greatly the opportunity for a win-win and an optimal solution. By sharing supply process cost and profitability information through a trusted third party, the effort can steer the partners away from overly simplistic pricing panaceas and towards more substantive changes in the processes. Frontier and Clairmont can identify very methodically specific changes that can be made and quantify the impact of these changes. Leveraging the results gathered in Tables 5a and 5b, we can construct a new Game Theory Matrix (see Chart 7). As we can see, this collaboration can result in enormous and sustainable returns for both parties.



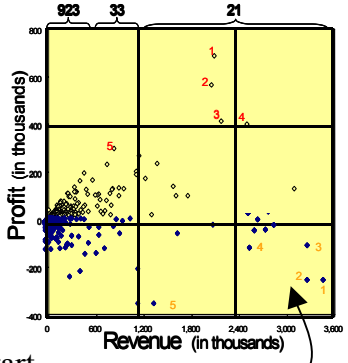
Implementing the Profit Focused Supply Chain

To avoid being lost in the minutia of your complex supply chain, the authors prescribe a methodology that has enjoyed great success. The philosophy adheres to several truths. First, **size matters**. The best place to start is with your Biggest Losers (see Chart 8). They are customers or vendors that are associated with high revenue (X axis), but low profitability (Y axis). Given the high volume, it is likely the relationship is long (in years), wide (in product categories), and deep (in relationship). Furthermore, these partners are more likely to be larger companies that are more professionally managed. Having a profit-focused discussion with these companies will be easier. Finally, there are not many of them. This is what **American Beverage** realized. By analyzing why some of their largest accounts were unprofitable, they realized that their delivery policies needed adjustment. By instituting several new supply chain policies (e.g. requiring a minimum of 7 pallets for delivery), they were able to improve profits significantly.

Chart 8. Profit Performance Matrix



Actual Client



Where you start

Second, **details matter**. Arriving on the scene with high level figures or averages is not sufficient to isolate the root cause and suggest changes. This is what **Fisher Scientific** discovered when they attempted to engage in supply chain discussions with key partners. At the time, their profitability system could only generate results at the category level. Their 350,000 customers were aggregated into 800 groups. Their 100,000 SKUs faced a similar fate. Imagine attempting to renegotiate a critical contract with Abbott Labs on delivery of their product to Fisher's warehouses. The success of this particular negotiation rests on showing that Fisher is probably losing money on Abbott because the category of suppliers that Abbott is among is probably losing money as a result of possibly high stocking costs for the category of products, some of which Abbott sells. Sounds like Fisher's success was a definite possible maybe. Fortunately, Fisher now has a new performance measurement system that tracks cost and profitability by customer, by order, and by SKU. This is greatly helping it forge profitable supply chain relationships.

Third, **fix <u>your</u> problems first**. If you identify high cost or inefficiency within one of your process steps, it would be unwise to expect your supply chain partners will fix them for you. For example, Frontier would be wise to begin centralizing its purchasing. Another example is **Metalwest**. They were initially convinced that many of their customers were not paying enough for its slitting work. However, upon review of the

details of their profitability model, they soon learned that their Colorado and Kansas locations cost structure was unreasonably high. The cost of slitting was much higher than the other locations, and much higher than other steel service centers. By performing what-ifs with the model, they realize that if they managed to get their cost structure to an industry average, many of these customers would be profitable.

Fourth, **be prepared**. Document your analysis. Isolate the opportunity areas and target partners. Have P&L details to back up your claim. Run what-if scenarios to estimate the size of the impact. Don't forget the proven maxim, "he who has it on paper wins."

The PFSCM Roadmap

The specific steps of Profit Focused Supply Chain Management that the authors recommend are as follows:

STEP 1: Assess where you are today on the PFSCM journey; identify where you intend to go

STEP 2: Implement TDABC. This will get you to the details and be prepared for the discussions.

STEP 3: Seek Trusted Third Party (e.g. McKinsey) who can preserve your confidentiality while promoting collaboration with your trading partners

STEP 4: Create a Process Link Chart (see Chart 5) to document combined supply chain process steps, their links, their costs, and drivers

STEP 5: Prioritize links to target on basis of cost, capacity, and controllability. Remember, size matters

STEP 6: For internal links, engage department personnel to brainstorm opportunities to improve. Run what-ifs through model. Fix your problems first .

STEP 7: For external links, engage with trusted third party and target supply chain partners. Run what-ifs through model.

STEP 8: Document impact, and communicate through core departments

STEP 9: Roll-out across other core supply chain relationships.

All of the above are meant to institutionalize the profit-focused supply chain, and become a sustained approach to continuous performance measurement and improvement in your supply chain.

Conclusion

Supply chain analysis has been a popular destination for many organizations seeking to increase their profitability. The space has grown so large and complex that it is easy to fantasize dramatic cost reduction or revenue enhancement. Unfortunately, this tangled web of complexity can hide the real efficiency enhancement opportunities. Traditional costing, measurements, and supply chain solutions were not helping. In fact, they may be accelerating problems. If you accept the complexity of the "supply web" as outlined above and the intricacies of optimizing the "web," you would likely agree that optimization solely by COST would lead to a sub-optimal solution.

Through innovations in technology and process modeling, it is now possible for companies to gain visibility into their cost, capacity utilization, revenue drivers, and profit at any level of granularity. They also have contextual analysis capability that enables root cause determination to simplify efficiency improvements. Therefore companies today have the information that can facilitate meaningful dialogue with their core supply chain partners. Opportunities are both isolated (for analysis) and expanded (for value capture). The goal of optimizing a supply chain "web" should be to pick the case that optimizes overall profit. There is only one way to do this and that is to agree to a measurement system and then merge the data and optimize it across the entire web with the help of a trusted advisor. The results are dramatic. The size of the opportunity is a multiple of what would have been achieved through traditional approaches. Through the approach described in this white paper, companies can begin to create profit focused supply chains.

About the authors…

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