

How To Achieve Cost Savings From Supply Chain Management: Techniques That Work

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Abstract. This paper identifies and demonstrates proven techniques that achieve real cost savings from supply chain management, and provides information on how to apply these techniques in various business situations. Most supply chain professionals have knowledge of supply chain management, but many find serious challenges in achieving actual cost savings from the concept. This paper provides information on how to achieve cost savings from supply chain management.

Achieving Supply Chain Optimization

Supply Chain Management. A number of definitions have been proposed for supply chain management. Perhaps the best is simply, "an integrative approach to managing supply and distribution networks." The key word is "integrative," making the chain work better and at lower cost than would be possible by managing each segment of the chain independently. Another way of defining supply chain management is to state that it is the management of physical materials, services, information, money, and time across and between organizations in a business relationship in a manner that achieves the objectives of all the organizations at the least total cost.

Objectives of Supply Chain Management. Some common goals of supply chain management include: Reduce waste and non-value-added activities (i.e. cost reduction) including excess inventory, increase customer service/responsiveness, improve supply chain communication (speed/timeliness, accuracy of information, information sharing), reduce cycle time (e.g. new product development, supply leadtime), and improve coordination of efforts (continuous improvement, understanding of goals) (Ellram 1994).

Results of Applying Supply Chain Management. *The most-sought and most common result of applying supply chain management is reduced costs in the supply chain.* A cost that exists throughout most supply chains and therefore is often the target of supply chain management is the cost of inventory, managing it and carrying it. Many supply chain management efforts are aimed at reducing inventory costs. Other results of supply chain management include improved quality, more dependable quality, more reliable supplier performance, e.g. in order fulfillment and delivery, improved transportation service, reduced packaging costs, elimination or combination of steps in the supply chain, faster cycle times, and more satisfied customers. It is by nature an integrative approach, as much entrepreneurial as logistical, and results come from the following:

- Having knowledge of a variety of methods, processes, techniques, and systems that can be used to manage supply chains
- Studying particular supply chains to identify areas of potential improvement
- Applying and implementing methods, processes, techniques, and systems as appropriate to improve supply chain performance
- Evaluating changes, revising as needed, and practicing of continuous improvement through periodic performance reviews and value analysis.

Cost-Savings Approaches and Techniques. A total cost of ownership (TCO) savings model must include training of business units, buying organization's purchasing group, and top management personnel.

Identification of Types of Costs and Savings.

Cost Reduction: Cost saving resulting from a situation where something is currently purchased and the cost of obtaining it is reduced. A cost reduction can be per unit or overall. Examples include: pay less, use less, eliminate the use of, use a substitute item at lower cost, decrease a part of the acquisition and use cost (total cost of ownership) other than price, e.g. transportation cost, inventory cost, handling cost, quality control cost.

Cost Avoidance: Cost saving resulting from a situation where, without some action on the part of the buying organization, some form of increased cost would be incurred. Examples would include an announced price increase that is negotiated down, substitution of a lower-cost item for the one that was requisitioned, change to lower weight packaging material to offset a transportation cost increase (if the packaging material costs less than what is currently used then there would also be a cost decrease).

Whether a cost saving is a reduction or an avoidance, it also can be categorized as "hard" or "soft."

Hard cost saving: Less money goes out of the organization, now and/or in the future depending on whether the saving is a reduction or an avoidance. Must be actually or potentially measurable in budget or operations reports. Hard cost savings drive acceptance by management of total cost of ownership cost saving approaches.

Soft cost saving: Often results from situations where person-time is reduced but actual bodies are not. While not measurable in budget or operations reports, such savings should be reported and tracked because they can identify opportunities for job combinations or capacity for additional duties which, if implemented may result in hard savings or improve the product in some way. Use of non-alliance suppliers when alliance suppliers are available create opportunities for soft cost saving of the additional time required for bidding/evaluation needed to use the non-alliance supplier.

The Concept of Measurement Applied to Supply Chain Management. Measurement in supply chains normally is intended to: (1) Indicate how well goals are being met, (2) Identify where problems exist in order to direct corrective action, (3) Provide data for comparison with other supply chains and benchmarking analysis, and (4) Indicate the results of changes to supply chain processes. Specific areas where measurements can be applied in supply chain management include, but are not limited to, the following: supply cost modeling; strategic cost management initiatives; total cost of ownership analysis; customer satisfaction and customer service; total inventory in the supply chain over time; market basket analysis over time to compare supply alternatives; measure results of supply chain cost reduction, service, or quality initiatives.

The Concept of Economic Value Creation. The ultimate goal of every business organization is to create economic value for customers. If this is not done, nothing will be sold or traded. This fact must be kept firmly in mind when analyzing supply chains for potential sources of savings. To the extent that the same customer satisfaction can be achieved at lower total cost, additional economic value is created. The additional value may go to the customer in the form of lower price, it may go to the seller in the form of higher profits, or it may be shared by both entities. In the process of increasing economic value, supply chain management is most often looking to lower costs in the supply chain. To accomplish this, a proven approach consists of:

- Identify cost drivers
- Identify total cost categories
- Develop cost reduction activities/programs, e.g. continuous improvement
- Measure costs over time

- Quantify service activities using a team to form or build a cost model
- Ask: Does economic value added apply? Are there opportunities to increase economic value by improving the product/service instead of or in addition to reducing costs?

Comparison of Actual Results Measures With Goals and Targets. There is no point to making improvements in the supply chain without measurement of the results of the improvement. Comparison of results measures with goals and targets will indicate whether or not the desired objectives are being attained, and if objectives are not being met, where changes need to be made to improve the process so objectives can be met.

Some Particular Cost Saving Techniques.

- Establish baseline price and costs over time
- Utilize market baskets of high spend materials or activities
- Identify cost drivers for your company and supply chain members. Do not simply try to cost-shift within the supply chain
- Over a 12-month period, how were prices and total system costs imputed?
- Build a total systems cost model with pricing as a key component

Two Examples: Market Basket Review and Alliance Savings Model

Market Basket Review

Identify major high spend items for each significant category of materials and services. This may be organized by alliance agreement, or business unit, or geography, or domestic vs. foreign and then combined into an overall market basket to determine who the best supplier is overall, but segmented by business unit/geography to determine who is the best supplier for a particular market. This approach can also be used to evaluate an alliance with a supplier to determine if their pricing is competitive with the market and/or to identify sub-categories of materials/services that the alliance supplier is weak in. Hence, areas of the supplier's supply chain (i.e. key manufacturers) can be evaluated. The alliance supplier can find more competitive manufacturers or risk losing the business or that segment of business. Rule of thumb: Include items that represent about 15% of current total spend for current supplier(s).

Bid to best-in-class suppliers for that market including the incumbent suppliers. Request pricing and associate with manufacturer names and country of origin. Seek a uniform currency and units of measure that are standard. Ask for out-or-stock ("run and maintain") pricing and also for long-lead time or project pricing that optimizes shipping quantities and lead times. Have an additional column in the market basket analysis for "dollar quantity discounts."

Market baskets should go out for update/review once per year, preferably when prices tend to be more stable (mid-year in some markets). Market baskets become part, albeit a salient element, of the total cost systems evaluation.

Market-Basket Model **Individual Supplier Data**

High Spend Items	Unit of Measure	Price	Out of Stock	Manufacturer	Price	Project Manufacturer	
Descriptions			\$	Mfr. name		\$	Mfr. name
"	each,		\$	"		\$	"
"	e.g.		\$	"		\$	"
"	"		\$	"		\$	"
"	"		\$	"		\$	"

Out-of-Stock Review Across Suppliers

	Supplier A (e.g. Incumbent Supplier- Alliance Partner)	Supplier B	Supplier C
Market Basket \$			
Total Price	\$1,000,000	\$950,000	\$975,000
<u>Plus Cost Issues</u>			
a. Logistics, FOB	0	+60,000	0
b. Late deliveries	+10,000	0	0
c. Approved mfr.?	0	0	+50,000
d. etc.			
<u>Minus Alliance Savings</u>	-120,000	0	0
TCO per Supplier	\$ 890,000	\$1,010,000	\$1,025,000

Alliance Savings Model

Potential Sources of Alliance Partner Savings:

1. Materials Management

- a. Reduction in inventory/carrying costs
- b. Inventory buyback
- c. Return of project surplus material
- d. Use of available surplus materials

2. Transactions Process Management

- a. Consolidate purchases
- b. EDI, E-commerce – savings vs. previous method
- c. Reduction in business unit/project transactions
- d. Consolidated invoicing savings

3. Managed Services/Manpower Redeployment

- a. Reduced manpower/manhours
- b. Contractor procurement – manhour savings/project
- c. Integrated services savings
- d. JIT II – Managed open stores savings

4. Product/Commodity Cost Management

- a. Standardization
- b. Material substitutions – improvements in supply chain
- c. Price increase cost avoidance
- d. Leveraged purchasing power (price reductions negotiated due to leveraged spend, volume discounts, order size discounts, etc.

5. Quality/Process Savings

- a. Reduction in inspection, testing, downtime
- b. Improvements in transportation, expediting, and logistics costs
- c. Improvements in cycle times
- d. Reduction in rework

6. Miscellaneous Savings

- a. Project savings

Alliance Savings Model

Example: Alliance Supplier A in Market Basket Model

Alliance Savings

No.	Savings Item	Savings \$
1	Materials management	\$200,000
2	Transaction process management	150,000
3	Managed services/manpower	150,000
4	Product cost management	175,000
5	Quality/process savings	100,000
6	Miscellaneous savings	<u>25,000</u>

Alliance total annual savings \$800,000

If the market-basket analysis includes 15% of the items from which the savings are generated, then 15% of the savings, or \$120,000 must be subtracted from the current alliance supplier's market-basket cost. This was done in the market-basket spread sheet model example.

Other Techniques for Savings. Total Cost of Ownership: Must be accepted at the top. Acceptance then cascades down throughout the organization; Learning curve issues must be quantified; Value analysis is a useful technique; Quantity discount analysis to determine attractiveness of quantity discounts when analyzed with inventory, ordering, and transportation costs; Process mapping for cost reduction activities; Break-even analysis with suppliers; Activity Based Costing applications; Total Cost System must be built; Negotiations.

Building Business Cases That Will Gain Support of Management. Most important: Use terms and language that management understands and can relate to. Summarize key metrics and measurements and show bottom-line impact. Explain cost savings (i.e. reduction, avoidance, hard, soft). Identify business unit goals and corporate goals and show how the case presented helps to reach those goals. Present the case in the context of industry trends.

Steps in Business Case Analysis: (1) Define the scope of the situation; (2) Identify the opportunity presented (cost reduction, quality improvement, service improvement, customer satisfaction improvement, etc.). Show how the opportunity helps achieve business unit and corporate objectives. (3) Select suppliers and other supply chain members who can service the scope and meet the opportunity presented; (4) Standardize data so combinations and comparisons can be made "apples to apples"; (5) Develop different scenarios to illustrate the range of possible outcomes from implementation of the case situation; (6) Link the case to measurements and strategy.

Identifying Potential Savings Opportunities. Examine your supply chains. Look for four "keys" to supply chain cost reduction opportunities:

- Large amounts of money flowing or sitting; large movements or storage of physical material; Large elements of time in obtaining, processing, and delivering materials, services, and products; information on what is happening in your supply chain.

Other ways to look at your supply chain:

- Which items or processes are most critical to the success of your product/firm? What is most important to the suppliers in your supply chain? What is most important to the customers in your supply chain? What is most important to third parties in your supply chain? What can be eliminated from the supply chain without reducing the economic value to ultimate customers? What products or customers are currently unprofitable? What elements of your supply chain have been the subject of the most complaints from customers or employees or others?

Implementing Changes That Will Bring Cost Savings. Risk and reward sharing; business units want their share of credit; teams should achieve savings, not individuals; who gets the credit is a big issue; suppliers must share in savings and have incentives to achieve savings (set goals).

A Best Practices Framework for Achieving Cost Savings.

First: Use a team approach in any supply chain improvement effort. Involve all departments, functions, suppliers, customers, and third parties who could be affected by an effort to reduce cost in the supply chain.

Second: Learn and/or train the team in current concepts, methods, processes, and systems that can be used or applied to improve supply chain cost performance. An alternate approach is to use a consultant or a combination of your team plus a consultant, or a consultant as a trainer.

Third: Study your supply chain or the portion of it in question to determine how it operates, what and where are the costs and cost drivers, what has to be done to reduce current costs.

Fourth: Select areas for improvement, determine improvement methods, measurement metrics, develop a plan for implementation and evaluation.

Fifth: Implement improvements.

Sixth: Measure results, evaluate, adjust implementation as needed.

Seventh: Practice continuous improvement.

REFERENCES

Ellram, Lisa M., "The 'What' of Supply Chain Management," NAPMInsights, March 1994, pp. 26-27.