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Supply Base Rationalization as a Strategy to Maintain a Stable Supplier Base: A Case Study

Kratika Deshmukh¹, Ashok K. Pundir² and L. Ganapathy³

Abstract

Supply Base Rationalization is a strategy to determine appropriate number of suppliers that will enable the organization to achieve lower prices through leveraged volume, standardized service, and lower costs to manage transactions and the supply base. Rationalizing the supplier base means utilizing right suppliers in right numbers. The case study discusses how to apply concepts within Supply Base Rationalization in a manufacturing firm. It will consider the firm having plants at different locations. The Business unit wise firm model is considered to apply different rationalization strategies to different categories in different business units or entities of the manufacturing firm. The strategies were suggested after detailed Spend Analysis which were then implemented in the firm and resulted in large cost savings with better quality materials. This case study will help in understanding application of different supplier rationalization methods in different contexts.

Keywords: Cost Reduction, Supply Base Rationalization, Spend Analysis, Supplier Strategy.

Introduction

Supply Base Rationalization is generally defined as a conscientious effort to determine the right number of suppliers to do business with. The purpose is that right number of suppliers means that the organization will realize lower prices with leveraged volume, standardized service and reduced cost through lesser transactions. Transaction costs are directly proportional to the size of Supply Base. Management efforts on operational non value adding activities are drastically reduced by having appropriate size of Supply Base. Focussing on right suppliers will further help in concentrating on key suppliers who can add real value to the business. Focussed monitoring and upkeep of such suppliers will improve relationships nurturing integration, trust, value added services and innovation. This will help to capitalise on supply base capabilities, ultimately benefiting both the buying firm and the supplier.

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1. Post Graduate Diploma in Industrial Engineering, Class of 2012
National Institute of Industrial Engineering (NITIE), Mumbai, India
Mob: + 91 9769657726, Email: kratika.deshmukh@gmail.com
 2. Dean Students Affairs and Placement
National Institute of Industrial Engineering (NITIE), Mumbai, India
Mob: +91 9969002846, Email: pundir.ashok@gmail.com,
 3. Dean Research
National Institute of Industrial Engineering (NITIE), Mumbai, India
Email: lganapathy@nitie.edu, Mob: +91 9920435634

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Case study discusses the use of Supply Base Rationalization as a strategy to maintain a stable Supply Base in a manufacturing firm. This will consider plants at different geographical locations to illustrate the use the concept in a manufacturing firm with a number of entities in different locations. This paper suggests the way to kick-off of supply base rationalization process in a category here Packaging. The benefits also come in stages starting with cost savings, leading to value added services, continued improvement on performance metrics, product improvements, sharing and optimization of resources.

Literature Review

Ram N. (2001) addressed the issue of Supply Base Rationalization by proposing a methodology for effective supplier performance evaluation based on data envelopment analysis (DEA), a multi-factor productivity analysis technique. He suggested that apart from Cost, Quality and Delivery other parameters are also important in supplier evaluation such as the type and amount of input and output resources etc.

He suggested dividing the suppliers into four classes such as:

- HE: High Performance and Efficient
- HI: High Performance and Inefficient
- LE: Low Performance and Efficient
- LI: Low Performance and Inefficient

Such classification will help to identify HE suppliers who are the star performers. HI's who are potential long-term risk in that they are performing satisfactorily now, but most likely do not have a structure and organizational capabilities that can sustain performance in the future, LI suppliers who are candidates for "pruning" and LE suppliers who are candidates for further development. Also HE suppliers can be used as benchmarks for LE Suppliers.

ISM (2005)^[6] A survey by Institute for Supply Management and Staples says that 90 per cent of participants are involved in some sort of formal spend analysis initiative, 60 per cent respondents indicated that their companies spend analysis initiatives have been "somewhat Effective", Cost savings was the primary objective of the spend analysis initiative for 61 per cent of the respondents; 86 per cent are pursuing a supply base rationalization initiative, 76 per cent say that rationalization has not been pursued in all categories of spend. Of these, 23 percent have pursued rationalization in direct spend only, 8 per cent have pursued rationalization in indirect spend only, and 45 per cent have pursued rationalization in both Direct and indirect spend but not in all categories. Slightly less than one fourth of the respondents (24 per cent) have pursued supply base rationalization in all categories of spend.

Mohammed (2005) in his paper discussed the importance of e procurement in supply management. He discussed importance of Supplier Rationalization and two approaches to implement it. First approach involves identifying key suppliers based on their performance. Every business has unique characteristics, and well-designed performance metrics should reflect this; however, there are some basic items everyone needs to measure. Minimum standards for qualifying suppliers should be set, communicated and enforced.

The second approach in supplier rationalization is commodity contracting or aggregating your spending. The organization must ask if it really adds value to have more than one, or at most two, suppliers for things like office or janitorial supplies. However, a detailed spend analysis needs to be conducted, if outsourcing is the chosen way.

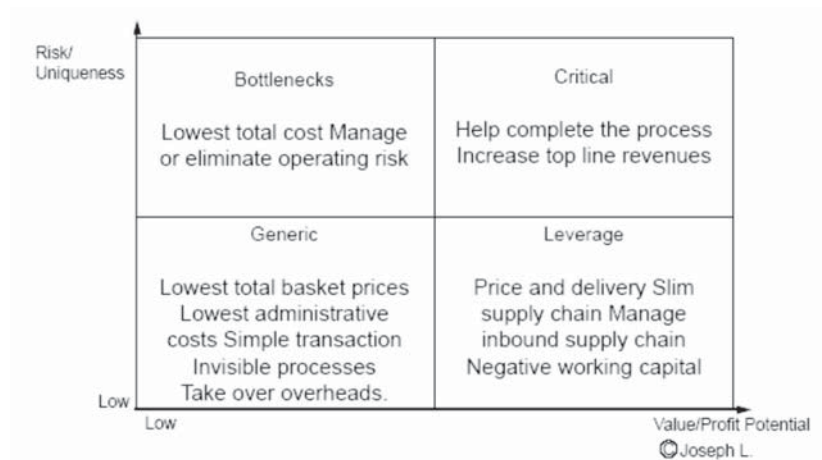


Figure 1: Value-add a Company wants from a Supplier

Strategies used under Supply Base rationalization includes:

Reduce It

Reducing the number of suppliers they do business with is a common procurement department goal. Supplier consolidation **works best when a company already have enough qualified suppliers** and is sure that no others can offer a cost, quality, or other advantage. Consolidation of spend with a subset of currently-used suppliers is done. With global sourcing, buyers can find top vendors across the planet.

Increase It

By blindly following the supplier reduction trend, one might award business in one category to a supplier who performs well in another category. This strategy is flawed when the supplier is not as competent in the second category. **In many cases, it is better to have two suppliers who can deliver great performance in two categories** than one supplier who performs well in one category but poorly in the other. While analysing the categorized spends, one must find suppliers who appear across categories. Ask if they are truly the best choice in each category and what measurable advantages do they have by using them across categories.

Maintain It

If one has the correct number of suppliers having satisfactory performance, it is better not to change the suppliers mix or the supplier count.

Keep the Size, Change the Mix

Many organizations set "number-of-suppliers goals" and measure success simply by the numbers. But the **quality of suppliers is more important than the quantity of suppliers**. Even if one has the right number of suppliers, one may need to replace the poor performers with good ones.

Expand Then Reduce

Sometimes, firms are under pressure to reduce the supply base. But the **suppliers they currently have are so inadequate** that they just can't imagine depending more heavily on any of them. So, they have to **introduce more suppliers to identify the best ones** in the market before they start ousting the poor performers. But they also need to make sure one is not trading one

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problem for another. New suppliers must prove themselves, so one should add them to the list to allow more choice for a future supplier reduction. There is nothing wrong with this plan. Just communicate it as a **two-step approach** to good supply base rationalization.

Case Study

Background

The project is executed in Indirect Purchasing department of a manufacturing firm which is centralized purchasing function for all indirect purchases across the entities of the firm, Packaging 'material and services' is one of the categories which fall under Indirect Purchase.

Packaging Material for all the entities can be broadly divided into four types-

- Corrugated boxes
- Wooden boxes and pallets
- Metallic skids
- Packaging supplies(VCI and Non VCI items)

Data Collection

It is critical to have support from all the parties involved which includes executive management, internal customers or users, other business units and suppliers.

In many cases infrastructure needs to be developed which comes from the approval of executive management. To get the overall Purchased and Delivered data the total participation from users is must. This involves a culture change as it is very necessary as it involves greater involvement of users with suppliers. It is more than just comparing prices. The concept of Total Cost of Ownership should be understood and followed instead of just prices to reduce overall enterprise costs, to save money in users budgets and to achieve greater integration and performance from suppliers.

The project requires clear understanding of Supplier distribution as well as their share of business. For this objective data templates were designed and floated to all entities.

Ground realities are always difficult and thus the data collection is not an easy part. Due to unavailability of data with some entities, a data collection strategy was followed which involved collection of data from following sources:

- Representative from respective entities(users)
- Suppliers
- ARIBA to obtain data about total items ordered
- Oracle to obtain data about total items received

Data from Oracle was found to be most relevant and thus used for the analysis.

Spend Analysis

Data collected was analysed in terms of various spend categories. Depending on the category of spend, the strategy about how many suppliers, which suppliers and what type of relationship to have with those suppliers will differ.

Decision making points for Supply base rationalization:

- Basic approaches to start optimizing (reducing) the amount of suppliers is to draw a line after 10 or 50 suppliers depending on the size of list in the category.

- Another common approach is to analyse spend of suppliers contributing 80% of the total spend by value or volume.

These can be the kick-off points which can be critically analysed to include or exclude suppliers. In order to maintain the confidentiality of the firm, its name, suppliers name, exact figures etc are not displayed. Pseudo names will be used wherever needed.

Ways to do spend analysis:

- ✓ *Category wise Spend:* Analyse share of entities in a particular category that is major buyer entity for the category of goods and services.
- ✓ *Entity wise Spend:* Spend is analysed for every entity and Pareto principle is applied to find out spend distribution of categories inside the entity.
- ✓ *Supplier wise Spend:* Share of business among suppliers for every category is analysed.

Spend analysis showed that category 'metallic skids' have major spend (around 60 %) according to value.

Category wise spend of each entity was analysed. Major consumer of the particular category was found out.

Table 1: Category wise Spend in INR

Category	Spend	Percentage Spend	Cumulative percentage
Metallic boxes and skids	10,25,08,942	60.89	60.89
Corrugated boxes	2,62,29,847	15.58	76.47
Wooden boxes and pallets	2,24,43,914	13.33	89.81
Packaging supplies	1,71,58,448	10.19	100.00
Total	16,83,41,150	100	

Table 2: Category wise Major Consumer Entity

Corrugated Boxes	Entity1	Entity2	Entity3	Entity4
Wooden boxes and pallets	✓			
Metallic Skids		✓	✓	
VCI and Non VCI Items		✓		

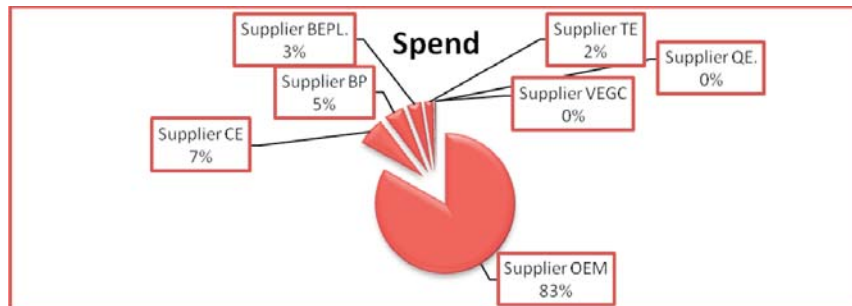


Figure 2: Supplier Distribution for Metallic Skids

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Spend analysis in **Figure 2** (above) shows that Supplier OEM has majority of the share. This shows over dependence on a single supplier. Thus Rationalization strategy used is to expand the supply base to mitigate risk.

Category wise Strategy

Corrugated Boxes

Corrugated boxes are used in entities based in West as well as Central Region so the objective is to have sufficient reliable suppliers with proper share of business among them in both the regions.

Table 3: Current and Proposed Supply Base Distribution

Current Share of Business			Proposed Strategy	
Region	Supplier	Share of Business	Supplier	Share of Business
Central	Supplier GCPL	86%	Supplier GCPL	86 - X
	Supplier NE	14%	Supplier NE	14+(X/2)
			New Supplier 1	10+(X/2)
	total	100%	total	100%
West	Supplier IP and RP	44%	Supplier IP and RP	44-A
	Supplier NE	42%	Supplier NE	42-B
	Supplier CS	13%	Supplier CS	Removed due to performance constraints
	Supplier GCPL	1%	Supplier GCPL	1+A
			New Supplier 2	B
	Total	100%	total	100%

Findings:

- Overdependence on Suppler GCPL in Indore region
- Supplier NE and Supplier GCPL have presence in both regions
- Supplier IP and Supplier RP belongs to same owner
- Entities will be discontinuing Supplier CS
- Supplier NE being big supplier can possibly handle more business in Central Region

Strategy proposed for Central region:

- Reduce Suppler GCPL's share of business by X to reduce overdependence on him
- Value of X is entity's call and is proposed to be between 15 and 20 %
- Increase Supplier NE's share of business by half (proposed) of the share reduced for Suppler GCPL until a new reliable supplier is completely established
- New Supplier needs to be developed for the other half spend
- If Supplier NE is not complying with delivery and quality standards , the new supplier developed above can be used to deliver his items

Strategy proposed for Western region:

- Keep Supplier NE and Supplier RP as major suppliers as they have been delivering with consistently good performance

➤ New supplier needs to be developed to reduced overdependence on two major suppliers

Wooden boxes and pallets

Wooden pallet

Table 4: Current Supply Base of Wooden pallet

Wooden Pallet Supplier's	Spend	Percentage Spend	Cumulative
Supplier SP	9,63,036	21.9	21.9
Supplier NIPL	7,75,124	17.7	39.6
Supplier MC	6,59,000	15	54.6
Supplier MEPL	6,33,628	14.4	69
Supplier BP	4,22,394	9.6	78.6
Supplier TE	4,13,319	9.4	88
Supplier KDP	2,07,200	4.7	92.7
Supplier CE	1,30,000	3	95.7
Supplier SSW	54,900	1.3	97
Supplier SE	51,205	1.2	98.2
Supplier SUP	49,500	1.1	99.3
Supplier GCPL	16,525	0.4	99.7
Supplier NA	14,160	0.3	100

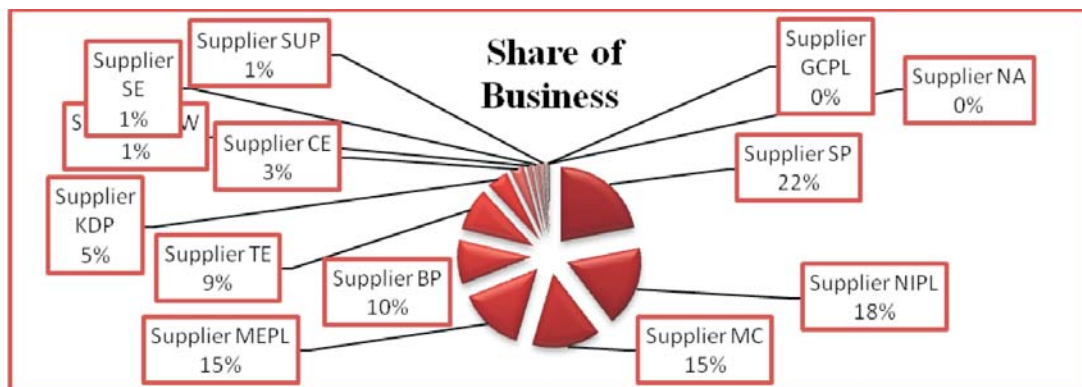


Figure 3: Supply Base Distribution of Wooden Pallet

Current share of business shows that there is a **scope of supplier consolidation** and this category needs a redistribution of share of business among suppliers so Supply Base Rationalization strategy used is **reducing the Supply Base**.

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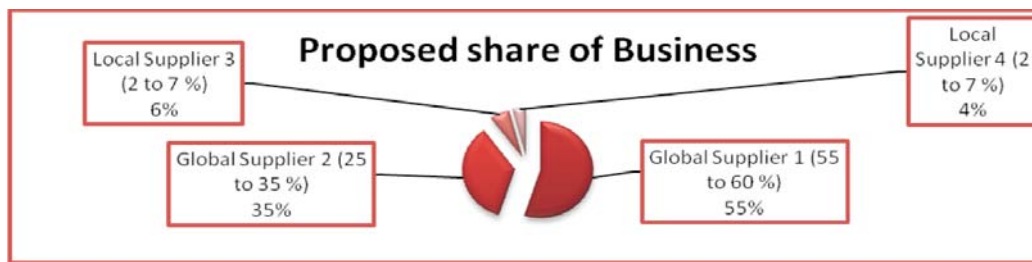


Figure 4: Proposed Generic Model for Share of Business across Regions

- **Global supplier:** has presence in both the regions and can deliver to both places with same quality and rate given by local suppliers also they can be easily introduced to other entities available in those regions.
- **Local suppliers-** deliver with competitive price, lead time to deliver, more easily traceable, will help in risk mitigation when urgent supply of goods is needed in short notice of time.

Wooden Boxes and Pallets

If wooden boxes and pallets are considered together, over dependence is observed on Supplier NIPL (56%) and no other supplier has more than 8 % share.

The reason is Supplier NIPL's customized packaging solutions and quality which is still not provided by other suppliers.

In this case **Rationalization Strategy** used will be **Expand Then Reduce** as we cannot directly consolidate with the existing suppliers because unavailability of customized quality service level.

Here Supply Base rationalization will help a manager to take actions which will help in choosing right supplier as well which can provide products/services at right quality at right price and within time.

It is a four-step process which includes-

1. Increase supplier base with suppliers who provide customized packaging solutions with desired quality level.
2. Subcategorizing: Divide the commodities into parts requiring customized solutions or not.
3. Select suppliers for divisions based on quality, cost, delivery time, capacity etc and send them RFQ.
4. Compare quotations and decide the suppliers, **prefer same suppliers across the entities** in that region which will give scope of order consolidation orders and prevent price difference in an item consumed in different entities.

Metallic Skids

Figure 2 shows over dependence on Supplier OEM which is a risk factor.

Price of per unit metal skid is very high so small difference in price can lead to huge price difference for whole order.

Strategy Recommended

- Metal skids being a high spend category should have reasonable amount of reliable suppliers with price per skid almost equivalent to target price of the skid
- Use e- sourcing to choose most cost effective supplier

- Entity should have own technical resource to make and release the drawing. This will have following benefits-
 - ❖ Setting of most appropriate target price according to accurate material requirement
 - ❖ Reduction of cost incurred for sample skid
 - ❖ Simplify supplier comparison

To set a model event, a rapid source was executed for Engine Skids demonstrating the use of e-sourcing tool for the purchase of Engine Skids for the first time.

Outline

- Requirement finalized by Entity X
- Sample skid purchased from Supplier N who charged INR 8586 for single sample skid
- Entity X finalized drawing
- Drawing floated to suppliers for quotation (RFQ)
- Negotiated with suppliers having outlier quotation
- Executed a test event to demonstrate e-bidding (Rapid Source) to participating suppliers (Rapid source was Reverse Auction and rank Based)

Table 5: Reverse Auction Summary

Supplier Name	Initial Quote	Prebid Price	Final price
Supplier O	15,250	11,605	6,004.04
Supplier B	7,022	10,000	6,844.38
Supplier N	8,586	12,000	5,473.89
Supplier R	8,286	11,000	6,712.52
Supplier S	12,630	12,500	5,473.89
Supplier M	-	10,000	5,456.53

* Price in INR per Skid

- Average Skid Prebid Price is INR 11,184.17.
- Lowest price obtained after rapid source is INR 5,456.53
- Average saving per skid is INR 5727.64
- For 400 Skids as required by Entity X total **savings was approximately INR 23 Lakhs**
- Reduced the final price by 51.21% per skid

VCI and Non VCI

In this case supplier base is near to ideal supplier distribution (almost right size with right distribution) hence the next step is to check whether we have right suppliers or not as Supply Base Rationalization talks about both, right size of Supply Base and right suppliers who will provide best quality products at best price and within required time.

Basic approach if Supply Base has right numbers but not right suppliers:

- locate supplier with highest Spend

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- objective is to find out whether the supplier is providing items at
 - best quality
 - best price
 - within required time (lead time)
 - Capacity (in case of increase in demand)

In this category analysis started with ensuring right quality. Supplier with highest Spend was chosen to test against parameters specified above.

Ensuring Right Quality: Process started with discussion with buyers and users. After comparing the Quality specifications required for the product and quality of items given by Supplier SS, the results conclude that quality matched perfectly with requirements.

Ensuring Right Cost Comparison of cost of the items provided by Supplier SS with Other Suppliers (Parallel Quotations) clearly shows that other suppliers can provide same quality items at lower costs. This is how supply base rationalization helps a manager in identifying right suppliers.

In this case we have replaced poor performing supplier (Supplier SS).

Supplier SS is having 68% share of business with Entity E so analysis of its rates is done.

- Decide which suppliers to be included in the process
- Evaluate new suppliers (if any) and check if they are qualified to participate in process
- Disqualify suppliers if they were not capable (capacity constraint)
- Decide specifications to check quality of items
- Obtain parallel quotes from remaining suppliers for above defined specifications
- Compare quotes and decide on final suppliers to be considered
- Define compulsory tests to ensure the supplier quality and frequency in which they will submit the test reports (monthly, biannually etc)

Tests defined at during this process were made compulsory for the first time in firm for supplier qualification; it has been implemented in Entity E and recommended for replication in other business units as well.

Result: Total savings for VCI and Non VCI items is approximately INR 15 and 17 Lakhs for year 2010 and 2011 respectively.

Analysis of this category shows that there are opportunities to replace suppliers who are present from a long time; initially quality provided by them was satisfactory so price rise was easily provided but now other suppliers present in market can give same quality items at competitive prices. Thus Supply Base Rationalization will help managers find right Suppliers for right products.

Conclusion

This paper illustrates the use of Supply Base Rationalization in a manufacturing firm to realise cost savings with subsequent benefits from strong relationship between supplier and the buyer. The supplier then work closely with the firm to improve performance metrics, to improve products and in sharing and optimization of resources.

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About the Authors

Kratika Deshmukh has done her Post Graduation from National Institute of Industrial Engineering (NITIE), Mumbai. Her major interests are in area of Supply chain management and operations. She can be reached at kratika.deshmukh@gmail.com

Ashok K. Pundir is Professor of Operations Management and Dean (Students Affairs & Placement) at National Institute of Industrial Engineering (NITIE), Mumbai, India. He has over sixteen years of industrial experience in the area of Industrial Engineering and Project Management at The Premier Automobiles Ltd., Mumbai. He has over twelve years of teaching experience and his major interests are in the areas of project management and work systems design. He is a Fellow of Indian Institution of Industrial Engineering and Institution of Engineers (India). He can be reached at ashokpundir@nitie.edu, alternatively at pundir.ashok@gmail.com

L. Ganapathy is a Professor of Operations Management and Dean (Academic) at National Institute of Industrial Engineering (NITIE), Mumbai, India. He has over twenty four years of teaching experience and his major interests are in the areas of project management and operations research. He is a member of IEEE, IIIE, ORSI. He can be reached at ganapathy1@gmail.com