

Scenario of Collaborative Relationship in Indian Automotive Industry: Essential Ingredient in Supply Chain Automation

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Abstract: - Supply chain in automobile sector has four step. First from tier3 to tier 2, tier 2 to tier 1, tier 1 to original equipment manufacturer and similarly demand generated from original equipment manufacturer to tier 1 supplier, tier 1 supplier to tier 2 suppliers, tier 2 suppliers to tier 3 suppliers and so on. Automation helps to minimize risk market demand fluctuation by fast communication to supplier, free from human error in material schedule planning and quick decision. Automation of complete supply from OE to tier3 cannot be implemented without collective approach called collaborative relationship. This paper focuses on scenario of collaborative relationship in Indian Industry. This research objective is to find out collaborative relationship existence and its evaluation level. This work carried out on supply chain of Gear manufacturing plant through questionnaire techniques. There are 52 suppliers as chain partner and all are included in research. Result of research work is that collaborative relationship exists at moderate level in tier 1 to original equipment manufacturer, but on other stages it is not existing even at preliminary level. Conclusion is that collaborative relationship is an essential ingredient in automation of supply chain. In this approach both (supplier to supplier or supplier to buyer) have common vision and can accomplish more together. Indian industry has to develop this concept of relationship so that loss of natural resources due to failure in supply chain can be avoided. This loss can be in form of energy loss, man hour loss, process loss during unproductive hours.

Key words—Tier 1(who supply directly to original equipment manufacturer, Tier 2(who supply to tier 1), OEM (Original equipment manufacturer), SCM (supply chain management)

I. INTRODUCTION

Supply chain in automotive companies mean integration of production planning control, supplier scheduling and follow up (procurement), stores and inventory management and dispatch. Production planning and control department is responsible for capacity analysis based on customer demand and convert monthly demand into day wise production plan. Material scheduling department is responsible for releasing demand to supplier and ensuring material availability. Store is responsible for proper handling and storage of material so that inventory norms can be following. Dispatch is responsible for timely deliveries to customer. Since supplier is first most important to vibrate supply chain by initiating material flow for production and Collaborative relationship means attaining success of supply chain with

common goal. Research puts more emphasis on supply chain performance as competition growing. Steven(1989) study importance of collaborative in supply chain and indicate positive impact on supply chain performance. Similarly automation of supply chain also lead to enhancement in performance on basis of quickness, improvement in inventory turnover ratio, identification of obsolete or excess inventory. Coordination between supplier and buyer's company in business improves relation and this change helps to minimize variability in information exchanged among supply chain partners and also reduce uncertainty in information sharing. Information sharing stops trimming in its asymmetry and chance of new opportunities happen at cost to other party.

II. LITERATURE REVIEW

Ford (1980) has defined five stages of collaborative relationship between buyer and seller. These stages are pre – relationship, early stage, development, long term and final stage. Stage one is of lack of confidence and uncertainty , distance between buyer and supplier in term of exchange of information is more, negotiation and cost saving projects are on lower side and just sample based. In development stage commitment level increase between both the parties, distance in term of communication is also reduced, a formal contract get signed with terms and condition regarding delivery, price and quality, larger order and adaption (formal) became part of relationship. In long term relationship all above factors takes place as institution. In last stage which is called final stage extensive institutionalization. Eisenhardt in 1989 in his study found that mostly supply chain literature consider buyer as principal whereas supplier in seen as agent, with more stress on resources utilization to satisfy exceeding expectation of customer.

Collaborative relationship with long term perspective is more important now a days and evidence are growing in support that traditional adversarial approach is no more beneficial to be competitive in market (Kalwani&Narayandas)1995. Another study conducted in 2000 by Shin state that by increasing involvement of supplier in long term relationship, in product development, supplier reduction programmed and in quality improvement,

it is beneficial for both. Li in (2006) conclude in his paper that organization adopting long term and collaborative relationship achieve high level of performance. Firms should understand their channel partners completely in all respect including disputes so that comprehensive resources power and its imbalance can be directed towards achieving supply chain performance and its member’s satisfaction.

III. DATA COLLECTION

This study carried out on supply chain of an automotive industry manufacturing gear box for two- wheeler and four-wheeler. This supply chain consists of 52 companies as partners of supply chain. These suppliers are spread out in and around Northern capital region which include Gurgaon, Faridabad, Bhiwadi, Delhi. Bawal, Alwar. A questionnaire to test collaborative scenario is prepared. This is based on factors as formal contract between supplier and buyer, buyer supplier common vision, climate of trust and respect between buyer and supplier, common goal and employee awareness on collaborative relationship of both parties. Questionnaire is based on 4 point scale from nil to strongly agree. Questionnaires circulated to all whole sample population through email and also fill up in some cases face to face interaction. Responses obtain from supplier has been classified based on factors in tabulated form (as shown in table 1).

IV. FORMAL CONTRACT BETWEEN SUPPLIER AND BUYER

Logically buyer release purchase order based on mutual agreed price and supplier has to supply based on pre decided terms and conditions. Purchase order generally stress on price and quantity whereas actual delivery of material includes some other risk which lead to failure in delivery or dissatisfaction to buyer due to some unpredictable reasons which all can be covered in purchase order. So there are chances of disputes and difference of opinion may arise when all possible reasons not documented. It leads to make a dent of collaborative relation which may be to the extent of breakage of relationship. So companies having formal contract are safer to sustain their collaborative relationships.

V. BUYER SUPPLIER COMMON VISION

Buyer and supplier are equally important and have common objective of earning profit, increasing customer satisfaction and future growth. When both partners existence is based on above three things, they have common vision and path to attain their goal. Suppose buyer company future vision is to achieve a sales target of 2000 crore which is currently 500 crore in next ten year, then supplier also match with same vision in term of enhancing his capacity or any new technology investment or any diversification in product required. Supplier has to work on it to remain with buyer in long term otherwise buyer will start to find new channel partners.

VI. CLIMATE OF TRUST AND RESPECT BETWEEN BOTH THE PARTIES

Supply chain success largely depends on flow of information and its frequency to tackle with hips of market demand. Suppose a buyer given schedule of 1000 no. to be supply in a particular month and after passage of a week, buyer need 1500 no. In such condition, some- time supplier start analysis of demand themselves and do not pay attention. This attitude create climate of non- trust among both parties. Similarly supplier is not able to send material due to some machine breakdown and giving information to buyer that he will supply as per schedule. This also create an environment of non –trust and disrespect in both parties. This environment is very harmful to sustain collaborative relationship and also a hurdle in implementation of automation of supply chain because buyer can trust on input data given by supplier which is needed as basic information to make master data.

VII. BUYER AND SUPPLIER SHARED GOAL

Buyer and supplier both have goal of customer satisfaction and timely delivery. Since both buyer and supplier belong to different companies and every company has its own merits and demerits, opportunities and threats, therefore not only buyer and supplier but as a company also they have to make goal and shared their path to attain these goal.

VII. EMPLOYEE AWARENESS ON COLLABORATIVE RELATIONSHIP

When- ever a company wants to make success of collaborative relationship, it is not only system and formal contract play a role, at the same time relation between buyer and supplier as an individual is also important. This relationship can be maintained and sustain only when employees of both parties well aware about their role and responsibility as a carrier of relationship.

All above factors structured in questionnaire form in this survey to find out scenario of collaborative relationship in automotive industries of northern capital region.

	Nil	1	2	3	4	Strongly Agree
Collabrative Relationship Factor						
Formal contract between supplier and Buyer		8	10	16	18	
Buyer supplier common vision		4	6	24	18	
climate of trust and respect between buyer & supplier		2	2	4	44	
Buyer and supplier have shared goal		2	4	24	22	
employee awareness on collaborative relationship		2	6	16	28	

Table 1 . Respondent data in tabulation form

Null Hypothesis---Automotive Industry in supply chain does have consistent trend in collaborative relationship

Alternate Hypothesis—Automotive Industry supply chain does not have consistent trend in collaborative relationship

Factors	Nil	1	2	3	4	Strongly Agree
Formal contract between supplier and Buyer		15%	19%	31%	35%	
Buyer supplier common vision		8%	11%	46%	35%	
climat of trust and respect between buyer & supplier		4%	4%	7%	85%	
Buyer and supplier have shared goel		4%	8%	46%	42%	
employee awareness on collobrative relationship		4%	11%	31%	54%	

Table 2. Respondent data analysis as in percentage

VIII. HYPOTHESIS TESTING

Since data is simple random sampling and population is 10 times larger than sample. Likert scale test to be conducted to find out scenario of collaborative relationship. Median and quartile value analyzed to find out significance.

RESULT

Out of 52 companies respondent, 18 are having formal contract, which is 35% of total respondent and strongly agree (Med=3, IQR=2) that it is necessary for success of collaborative relationship. On factor ' Buyer supplier common vision' 46% are having common vision and somewhat agree (med=3, IQR=1). With IQR=1 it indicate that having common vision factor is of less important for collaborative relationship. Most respondent agreed that climate of trust and respect is must for collaborative relationship (med=4, IQR=0, n= 85%). Buyer and supplier have shared goal , 46% respondent put it in category of some- what agree. Its med=3 and IQR=1 proves its consensus as some -what agree. Employee should have awareness on collaborative relationship ,54% of respondents are strongly agree. Med=4 and IQR=1 proves its consensus. Finally Null hypothesis is accepted.

CONCLUSION

Automotive industries established in northern capital region having positive scenario on front of collaborative relationship. This study indicates it is not established as formal procedure. Definitely there is a culture of confidence and respect between buyer and supplier.

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