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Vendor upgradation Derives by Parent Company in an Automobile Industry in India: A Comparative Study

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Abstract: ***Innovations in core technology as well as information technology have put a great challenge for cost effective manufacturing. In an era of dynamic market in automobile industry, auto O.E.Ms and Tier-1 companies need to exit from traditional to strategic resourcing aiming at cost-reduction, quality& productivity enhancement which may lead to standardization of components, delivery time and levels of inventory. This can be made possible by taking supplier firm to become an integral part in addressing the problem jointly (customer-vendor) for total success. Subsequent to the liberalization in 1990, the automobile sector has been aptly described as the most potential sector for boosting the Indian economy by its tremendous growth after Automobile Industry was delicensed in July 1991. This study bridges the various gaps seen in vendor upgradation criteria from1999 to2013 for producing a quality automobile at most economical cost for customer delight. An immense work has been done by various customer companies over this period for making this change happened, sustained and retained for future growth. Most of the autos O.E.Ms are brand Owners having assembly lines for the components procured from their vendors. Such developments in vendor upgradation have been highly influenced by the support of various derives of parent Customer Companies which are continuously changing the approach towards vendor upgradation over a period of a decade and half for enhancing the quality of automobile, curtailing the cost, improving productivity by technological upgradation, reducing waste and fastened the deliveries of automobile, are getting success in making the automobile to reach to a common man at affordable cost. There is a need to pronounce vendors/suppliers as business partners, jointly working towards a common goal for sustaining competitiveness.***

Keywords: Vendor, parent company, vendor upgradation, globalization, SAP, SMEs, LAP, O.E.M, Tier-1 Company, Quality Rating, Supply Rating.

I. INTRODUCTION

Automotive Industry comprises of automobile and auto component sectors and is one of the key drivers of the national economy as it provides large-scale employment, having a strong multiplier effect. Being one of the largest industries in India, it has witnessed an impressive growth during the last two decades. It has been able to restructure itself, absorb newer technology, align itself to the global developments and realize its potential. This has significantly contributed to an increased share to overall industrial growth in the country. There has been a drive by the customer/parent automotive manufacturing companies to transform the Indian Automotive Industry from concentrating on the local market to manufacturing for the global market. Technological transfers for putting the technological innovation into fruitful use, and shifting technological innovation from R&D to a receptor organisation has been a burning issue for competitiveness. Depending upon the category/size of vendor,

O.E.M companies are adopting operation technology, development technology and improvement technology for upgradation of vendors. (Modi & Mabert [17]:44).

Furthermore, on the canvas of the Indian economy, automotive industry occupies a prominent place. Due to its deep forward and backward linkages with several key segments of the economy, automotive industry has a strong multiplier effect impacting the economic growth. Automobile manufacturing deals in a complex phenomena comprising of varied and multi-skilled manufacturing activities. All components, sub-assemblies and some assemblies are not produced within the compound of company. Thus, the final automobile which is a replica of component quality supplied by its vendors makes the parent company to put its best efforts on the up-gradation of such vendors strategically. It becomes very essentially significant to upgrade the vendors on all fronts for meeting the challenge.

Though India is getting advanced technology in different fields, but still there is a huge technology gap as compared to developed countries in automotive sector particularly. Automobile makers and their vendors in India had no challenge earlier to upgrade their technology. In 1984, Joint Venture of Suzuki Motors having with Maruti Udyog Ltd placed a sharp demand on new technology and bigger volumes. Situation changed very fast since 1991 with the arrival of multinationals companies. At present due to fierce competitive environment & presence of global players in Indian market, Indian companies are forced to go for technological collaborations, joint ventures and technology licensing etc. for developing capabilities in generating world class products for local and global market. In this context, for fast development, technology transfer from foreign players is of top importance to Indian auto sector companies. The process of technology transfer is a complex phenomenon, which includes various phases like technology need identification, technology selection, technology acquisition, technology adaptation and technology absorption. Richard Li-Hua (2010) suggested that Globalization affects each country in a different way; Technology transfer, which is must for vendor upgradation in a developing country like India, offers a win-win solution for both the transferor and the transferees. Thus, the developing countries can acquire advanced technology and knowledge by offering new market opportunities and providing human resources and raw material.

It has been recommended that SMEs(Small and Medium Enterprises),which constitute a big population of O.E.M vendors, also have an aptitude for innovation, creativity, and flexibility, enabling them to respond with more alacrity to structural changes and to adapt quickly to the dynamic demand patterns of consumers and customers.(Nimesh Chandra).Cousins et al., 2006; Krause et al., 2007; Lawson et al., (2008).emphasized that the social capital enhances the efficiency of buyer and supplier relationships resulting in the creation of opportunities that may not otherwise have been possible. Role played by vendors can never be overlooked whenever we talk of technology transfer in general and for automotive industry in particular. Vendors have with them a major share of technology and therefore technology transfer upgradation can never be achieved without involving the vendors. As per(Modi & Mabert [17]:42), to remain competitive, parent companies are increasingly implementing supplier development programmers to maintain a capable and high-performance base with collaborative inter-organizational communication, which has been identified as an important supporting factor in transforming a company for enhanced suppliers' performance.

This paper has been targeted to make a comparative study regarding the quantum of change in over a period of one and half decade by customer companies towards its derives on vendor upgradation nourishing the skill and capabilities of its vendors'. The author has studied already various aspects of vendor upgradation during her doctoral study research in 1999 pertaining to thesis submitted at Department of Business Management, GJU- Hisar and is further evaluating the quantum of this change in 2013.

II. Object of the Study

This main objective of the study is to investigate the improvements over a period (1999) to (2013) in specific parameters which a parent company considers for supporting its vendor company for vendor-upgradation in Indian automobile industry.

III. REVIEW OF LITERATURE

Soon after globalization in 1991, India was made open to the global village and was a preferred market, especially in automobile manufacture as well as auto component manufacturing. There exists a scope of new vendors for meeting the demand of new market. While deciding to produce global products, there is a strong need to consider the introduction of new quality requirements that are often associated with assistance in upgrading process technology of component manufacturers/vendors. This can be in the form of gradual improvements by replacing older tools, equipment, and machinery with more modern versions, or by substituting older process techniques with newer and more efficient ones. For meeting this multifarious challenge many technology transfers, collaborations and JV's took place which was capital intensive. This, alternatively, generated a huge scope of new vendor development for the economics of auto component manufacture.MNC's placed certain criteria for Vendor analysis, evaluation, selection and ranking is the process of finding the appropriate vendors who are able to provide the buyer with the right quality products and/or services at the right price, in the right quantities and at the right time, (Sarkis and Talluri 2002) Christian N. Madu (1990) reviews the technology transfer literature by integrating a set of process based models that would assist a team of LDC planners and MNC managers in making a decision within a strategic perspective. Ram Kumar and K. Momaya (2000) conducted a case study at Sona Koyo to study the flexibility in technology transfer at various levels, to make it more effective for technology receivers. The need for flexibility in technology transfer is supported by a case study using (SAP-LAP) situation.

Aggarwal (2000) brings out the fact that non equity based transfer of technology agreement, in spite of its pitfalls, is probably the most suitable form of alliance, specially where funds are in scarcity, risk is becoming difficult to measure, localness is preferred, customer is global in tastes, knowledge and product life cycles are becoming shorter and shorter.(Sirikrai & Tang [20]:72). Mutsiya et al ([18]:1265) highlighted five aspects that facilitate competitiveness: People, Process, Control, Structure and Technology. Supplier development initiatives help to drive continuous improvement through their supply base costs, improved quality and delivery, increased capacity, reduced lead times, and improved productivity (Modi & Mabert [17]:42-43).

M. Ndamase1 and J.L. Steyn1 (2011), suggested that information areas of improvement by suppliers need to be so that the vehicle manufacturer could understand better suppliers for improving towards self-reliance.(Huang et al [10]:750) highlighted that a manufacturing company and its suppliers must be integrated into the product development process in order to reduce the time to market and to produce better quality products.

(Ivarsson & Alvastam [11]:87) has spoken high of Toyota for supporting their suppliers in matters like innovation and product design, product specifications, development processes, labour training, factory layout, tooling, quality , inventory management, maintenance of machinery, inspection, and testing

Presently we are in an era of information technology which has not only eliminated the communication gaps but also helped a lot in the area of vendor upgradation and cost reduction by various ERP(Enterprise Resource Planning)softwares.Efforts are being made by parent companies to upgrade its suppliers on this front.

IV. RESEARCH METHODOLOGY

Research Strategy

The literature reviewed offers insight into various derives initiated by parent companies for upgrading its vendors in manufacturing process, human resource development, operation systems management, technological upgradations, improved communication methods, cost reduction and competitiveness especially in automobile sector. To obtain specific and relevant information, a survey was conducted with the goal of eliciting information that could be used to determine a view of the current state of the industry and its level of competitiveness, compared with the corresponding levels in 1999, as there exists a scope of

improvement all the times. A standard questionnaire was designed as the survey instrument. The survey was done via post and personal contact for the convenience of respondents and researcher, maintaining privacy and thus reducing any biasness.

Selection of the Sample

The sample for the purpose of this research was the companies in NCR-Faridabad, Gurgaon, which is an automobile hub, easily assessable and low cost involved in data collection.Reqisite help was sought from the husband of researcher had been involved in a number of projects and related

The following criteria were used to select the companies to be used for the survey:

- The Company should be engaged in the manufacturing of auto components.
- The Company should be suppliers of O.E.M or Tier-1 auto companies.
- They can also be manufacturers and suppliers of parts and accessories to after markets.
- The company need to be accredited to any version of international standard ISO:9000 OR ISO/TS:16949

A total of thirty suppliers in Faridabad-Gurgaon region were chosen as the sample population, representing the entire population. Of the out of thirty vendors who were sent questionnaires, 5 returned completed questionnaires; ten were interviewed, four were asked not to participate as their activities resembled with traders.; and eight did not respond at all and three denied to join this study.Table-1 represents the sectors of industry covered for this research.

TABLE-1: RESPONSES BY AUTO COMPONENT MANUFACTURING SECTORS

Sector	Sample Size	Responses Received	Responsiveness (%)
Auto Casting units	10	8	80
Auto Forging Units	8	6	75
Sheet Metal units	8	7	87
Auto Suspension units	4	2	50
Gear Manufacturers	2	1	50
Rubber Components	2	1	50

A questionnaire was developed, which included questions related with capabilities of the organizations for adapting Training Programs, supply rating, Quality Rating, Vendor Ranking, vendor capability, customer follow ups, technological skills, consistency in supplies, business ethics, expenses incurred on R&D and Loss of Business Opportunity detailed in Table-1. Questionnaire was administered through fifty six respondents on managerial hierarchy from 30vendor organizations. Primary data were analyzed, discussed and concluded for its findings. Further scope of study was assessed and bibliography has been cited at the end. Conclusions have been drawn based upon the data collected through questionnaire study.

V. DATA COLLECTION AND ANALYSIS

All the key parameters covered in 1999 study were included in questionnaire while other relevant new parameters (2013) which are highly relevant in present situation have also been added for consideration. The literature review was used as the basis for the questionnaire, and was covering the following main sections:

- People and structure.
- Parameters for vendor upgradation.
- Involvement between parent company and Vendors Company.

For improved responsiveness, enough space was given to respondents to cite their views apart from existing parameters. Essay type responses with extra comments were also welcomed. On receipt of comments from respondents of auto component manufacturing units, all relevant data were arranged for statistical investigation. Table-2 below throws light on the overall responses of various companies with regard to the drivers of criteria considered by parent company for taking vendor up-gradation programs with existing suppliers. This table also represents the responses received in 1999 as well as 2013.

TABLE-2:CRITERIA FOR VENDOR UPGRADATION			
S.No	CRITERIA	INDIAN COMPANIES	
		Year-1999	Year-2013
1	Supply Rating	10	15
2	Quality Rating	12	15
3	Evaluating Training Program	2	11
4	Vendor Ranking	12	12
5	Vendor Capability	4	13
6	Customer Follow Ups	12	10
7	Technological Skills	not covered	12
8	Consistency in Supplies	not covered	13
9	Business Ethics	not covered	12
10	Transfer of Technology	not covered	9
11	Expense on R&D	not covered	6
12	Business opportunity	not covered	15

Below Table-3 represents the views of working managers on the deriving parameters considered by parent company for considering Vendor Company for vendor upgradation.

TABLE-3: MANAGERS' VIEWS ON VENDOR-UPGRADATION IN RESPONDANT COMPANIES					
DRIVING PARAMETER	***Strongly Agree***	***Agree***	***Disagree***	***Neutral***	***Strongly Disagree***
Supply Rating	48	6	0	1	01
Quality Rating	53	3	0	0	0
Training Program	38	10	8	0	0
Vendor Ranking	45	5	2	2	2
Vendor Capability	56	0	0	0	0
Customer Follow Ups	28	12	8	2	6
Technological Skills	48	4	0	2	2
Consistency in Supplies	56	0	0	0	0
Business Ethics	46	6	1	1	2
Technology Skills	43	9	2	1	1
R&D Efforts	38	10	3	2	0
Business opportunity	56	0	0	0	0

VI. DATA ANALYSIS AND INTERPRETATION

All qualified data have been recorded, summerised analyzed and compared with the research thesis "Quality Management in Automobile Industry in India" to study the quantum of impact over a period of one and half decade. Quanlified data collected through questionnaire was further used as input for cluster analysis. Statistical tools like mean, percentage, chi square test values, f-test values and standard deviations has been used wherever required.

Data in Table-2 was analyzed for shift of various parameters over the assigned period. Percent improvement in various derivers of criteria from Year-1999 data has been summarized below in Table-3.

TABLE-3: VARIATION IN VENDOR UPGRADATION CRITERIA(1999-2013)

S.No	CRITERIA			
1	Supply Rating	10	15	+33
2	Quality Rating	12	15	+20
3	Evaluating Training Program	2	11	+67
4	Vendor Ranking	12	12	+20
5	Vendor Capability	4	13	+73
6	Customer Follow Ups	12	10	+20
7	Technical Skills	not covered(0)	12	+100
8	Consistency in Supplies	not covered(0)	13	+100
9	Business Ethics	not covered(0)	12	+80
10	Transfer of Technology	not covered(0)	9	+60
11	R&D Efforts	not covered(0)	6	+40
12	New business opportunity	not covered(0)	15	+100
	Average Improvement			+59

Table-3 exhibits that there is an increase in the effort and support of parent company to Vendor Company on various parameters by 59% from Year-1999 to Year-2013.Interestingly, parent company has identified certain new areas like technological upgradation, record of consistency in supplies of a vendor, business ethics, and technology transfer, R&D effort at vendor end and availability of new business.

Furthermore, for understanding the real impact, fifty six individual respondents' managers were tested against strongly agree, agree, disagree, neutral, strongly disagree for respective parameters. Such opinion has been compiled Table-4 which reflects the views sought by fifty six respondents' officers of fifteen companies on various derivers for vendor upgradation. This table has been analyzed for understand how the process owners of Vendor Company really opined on upgradation assignments supported by parent company.

TABLE-4: RESPONDENT MANAGERS VIEW ON VENDOR UPGRADATION

DRIVING PARAMETER	*Strongly Agree*	*Agree*	*Disagree*	*Neutral*	*Strongly Disagree*	*TOTAL*	*Agree &Strongly Agree (%)*	*Value of Chy2 test at γ=55*
Supply Rating	48(26.88)	6(3.36)	0(0)	01(0.56)	01(0.56)	56	96	0.072,
Quality Rating	53(29.68)	3(1.68)	0(0)	0(0)	0(0)	56	100	0.037
Training Program	38(21.28)	10(5.6)	8(4.48)	0(0)	0(0)	56	86	0.02
Vendor Ranking	45(25.20)	5(2.80)	2(1.12)	2(1.12)	2(1.12)	56	89	0.054
Vendor Capability	56(31.36)	0(0)	0(0)	0(0)	0(0)	56	100	0.004
Customer Follow Ups	28(15.68)	12(6.72)	8(4.48)	2(1.12)	6(3.36)	56	71	0.057
Technological Skills	48(26.88)	4(2.24)	0(0)	2(1.12)	2(1.12)	56	93	.0526
Consistency in Supplies	56(31.36)	0(0)	0(0)	0(0)	0(0)	56	100	0.004

Business Ethics	46(25.76)	6(3.36)	1(0.56)	1(0.56)	2(1.12)	56	93	0.043
Technology Skills	43(24.08)	9(5.04)	2(1.12)	1(0.56)	1(0.56)	56	93	0.014
R&D Efforts	38(21.28)	10(5.6)	03(1.68)	2(1.12)	0(0)	56	86	0.0105
Business opportunity	56(31.36)	0(0)	0(0)	0(0)	0(0)	56	100	0.004
TOTAL (672)	555	65	24	14	14	**672**	μ=72	Σ=0.37
CONTRIBUTION (%)	82	10	4	2	2			
RANK	1	2	3	4	4			

Table-4 exhibits that Quality Rating, Vendor Capability, consistencyand consistency in supplies are highest rated parameters for picking vendor companies for vendor upgradation by parent companies, followed by possession of technological skills, technological skills and business ethics. Status of scores in Vendor Ranking, implementation of training programs and putting R&D Efforts for innovations by vendors are also highly considered for vendor development.

Summerisingly, most of the suppliers agreed almost on all aspects by the derives of parent company for its vendor development. Among all, 82% of respondents believe strongly on the derives considered for vendor development, 10% agree to it moderately. From rest of the world 4% disagree and another 4% disagree strongly. The overall impact of agreement is 72 percent and thus the respondents have confirmed the parent companies are supporting the vendor companies on vendor-upgradation by 72% more in Year-2013 compared to Year-1999.

The responses of respondents were in Table-4 were tested using Chi square test. The table value of the test (0.37), at □= 0.05% confidence level, was found less than the upper tail critical value that is 68.79 and lower-tail critical value 42.06.As the value observed value is less than the table value. Hence, there is no significant difference in saying that the parent companies have really taken improved steps for considering a vendor company for upgradation.

VII. Conclusion

The purpose of this study was to evaluate whether efforts of parent companies in upgrading its vendors have improved over a period of one and half decade has been achieved, or whether there is more to be done, and on how actual impact corresponds to vendors about the steps taken by parent company. It revealed that not only the parameters which were being adopted in (1999), has improved but also new parameters have also been worked upon and, overall, there is an increase in efforts by 67%.Survey of literature has shown that the existing quantum of efforts by parent companies in (1999), were not sufficient for vendor upgradation and many more were required at vendor end for meeting the challenge on cost reduction and qualitative improvements and being sustaining in competitiveness. Then vendors needed to be upgraded on targeted parameters so as work efficiently, effectively, improving continuously and remain competitive which has been witnessed after 14-years in (2013). Gaps in thought process of vendor employees have been on support of parent companies, which have been rated ‘neutral’ or ‘disagree’ to a much greater extent than other parameters. This gives a call for O.E.Ms and new researcher for an opportunity to study further on this topic in Indian automobile industry.

Keeping the constraints of this study in mind, many more scope of investigation like, employees , availability of finance/funds in R and D, etc are left for future researchers and changes in strategies in information technology for increased competitiveness have been left open for future research.

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