Utilising Local Expertise In Supply Chain Management-Focus Factors For An Indian Aero Space (Civil Aviation) Manufacturing Company

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Abstract. Local Expertise is very valuable in gaining competitive advantage. It has its own advantages. Low cost, easy integrability in to manufactures’ supply chain are some of its advantages. Now a day’s companies like HAL are using formula ‘Global Competitiveness with local expertise’. Once synergetic relation between the manufacturer and the supplier gets established it continues forever and brings success. The role of manufacturer and the supplier should be proactive in joint planning and utilizing the latest technologies. Certain points are necessary for gaining global advantage.

1. Introduction

A supply chain is basically the combined set of people, resources, knowledge, and activities which help in transporting the products from one place to the other. It encompasses activities related to conversion of raw materials

There are many ways of managing supply chain in the global context i.e. maintaining a global supply chain. Strong IT Support and co-ordinating team is required. Volume of business is to be very high, global level planning is required. The company needs global presence which is suitable for giant companies.

But on the contrary even a small company can be globally competitive by using local expertise. It can cater to global market needs though it has its presence in a particular region or area. Multi advantages of minimal co-ordination effort put by manufacturer, ease of training the vendor, ease of logistics management, ease of joint planning, enthusiastic supplier participation resulting in high productivity are observed.
2. Aerospace Supply Chain Challenges

Production processes became disruptive and hence supply chains became vulnerable. The producers are aiming to reduce the time in releasing their products to the market particularly in the case of new generation aircrafts like dream liner. Also the producers want to share the higher costs of development with their suppliers. Airbus and Boeing outsourced more work to suppliers that they have selected. Also, the introduction of innovations (composite, low fuel consumption engines, avionics, electrical systems, etc.) and in some cases transformation of the former factories into independent companies has further amplified the complexity of the production chain. Despite the positive effects, this new approach has generated more problems in the production process.

Indian Aero space industry noticed a commendable growth over the last decade. Middle class market so far untapped is the main focus of many international companies whose presence is a result of privatization policy of the Indian Government. India stands in the ninth place in the world civil aviation market and would become the third largest by 2020. All airlines are increasing their capacities as there is increase in passenger traffic.

The rapid growth of civil aviation over the last few years is exerting pressure on civil aviation industry to change all its infra structure.

Thus, there is enormous potential for collaboration and creation of joint ventures in this sector for establishing maintenance, repair, overhaul facilities for civil and military aircraft, overhaul and maintenance of aero engines and production of avionics, components and accessories, both in civil and military aviation sectors. India is also fast emerging as a centre for engineering and design services in this sector.

At present there are about 20 major aviation enterprises in India. Of these, the top 10 are: (1) Hindustan Aeronautics Ltd (HAL); (2) Brahmos Aerospace Pvt. Ltd; (3) Bharat Electronics Ltd.; (4) Electronic Corporation of India Ltd.; (5) Boeing International Corporation India Pvt. Ltd.; (6) Raytheon; (7) Lokheed Martin; (8) Honeywell Aerospace; (9) BAE Systems; and (10) GE Aviation.

2.1. Risks of Civil Aviation Industry in India

All aviation enterprises suffered a loss because of the losses incurred by the national aviation carrier- Air India.

Access to modern technology remains a challenge for Indian Aviation Companies. More and more global private companies are expected to partner with Indian companies.

A number of private companies are working towards arranging manufacturing facilities.

2.2. Lack of domestic manufacturing

India lacks Aviation based manufacturing over the years. India desperately needs to build up its aviation manufacturing base without losing further time. In fact, with the past government policies, even maintenance, repair and overhaul services have not been adequately developed and often, our airlines are required to send their aircrafts abroad for servicing.

Other problems are Indian Government sector organizations failed to be up to the mark. Though the private organizations entered late, they showed a remarkable progress.
On the other hand China has made a remarkable progress. It has three commercial air crafts for sale. India has not even one. Technology absorption of India is not at par with tha of China.

2.2.1. Private sector Entry

Since 1990 private companies have entered and steadily grown. Some of the prominent companies are Tata Advance Systems, Mahindra Aero Space, Bharat Forge, Reliance defense Limited.

2.2.2. Special Economic Zones

Special Economic Zones are set up in Karnataka and recently in Adilabad in Telangana. The SEZ in Karnataka provides an ecosystem for original equipment manufacturers, their suppliers and ancillaries with a thrust on precision manufacturing. It has 150 numerically controlled machines. Airbus group is its key customer.

In Hyderabad SEZ the Tata Advanced Systems Ltd will set up a Manufacturing facility. Tata Group will manufacture fuselages and wings for Dornier 228 aircraft produced by Swiss-based Ruag AG here.

3. Literature Survey

Airline Supply Chain Simchi levi et al (2000) notes that the convectional objective of an airline supply chain is to get the right material to the right place at the right time. The secondary objective has been to manage the parts procurement and supply chain function as efficiently as possible.

Beamon (1999) adds that in today's highly competitive airline market and increasingly in the future- Efficiency in supply chain operations has reached a new and more critical dimension. This has been emerging over the years with the customers’ requirements and how the need to be addressed. Airlines breaks down its service into seven areas: Parts trading, distribution, surplus remarketing, initial provisioning and sourcing, inventory leasing, repair management, warehouse and logistics. With the integrated supply chain concept, instead of providing these functions on an individual or piecemeal basis, it is offering a support option that embraces the entire spectrum of its various services.

Simchi levi at al (2000)argues that the airline supply chain can only be possible with integrating both the internal and external suppliers the factors to put into consideration include but are not limited to: partnership emphasis, total aircraft support, pool access and component maintenance in one fully integrated programme, daily support, consignment stocking and integrated consumable management.

4. Objectives of Research

1. To understand the usefulness of local expertise in gaining Global competitive advantage in the context of opportunities and challenges of aviation industry in India.

2. To gain an insight of the requisites for a manufacturer and supplier to manage the supply chain for global advantage in the context of using local expertise.
5. Research Methodology
Secondary data and information is collected from books, websites about the local expertise scenario. Observation of opinions of various authors, organizing the information and analyzing the information logically leading to conclusions.

6. Focus Issues
In the context of using local expertise the manufacturer and supplier should be keen about the following points.

6.1. Integrated Materials management by Manufacturer and vendor
Both should manage material issues like inventory and strive to meet market demand together. A thorough vendor training and development mechanism should exist with the manufacturer. The manufacturer should have an expert and committed team for this.

6.2. Use of latest technology:
Most important tying factor between manufacturer and supplier is technology which should be latest. IT enabled technology should be used for coordination, planning, logistics management. The basic purpose is to obtain an integrated manufacturer-supplier model.

6.3. Total Quality Management
Manufacturer should be committed practitioner of Total Quality Management. He should communicate this philosophy and culture to all his employees, suppliers. He should make the customer involve in quality management from the beginning. All processes should comply to international standards.

6.4. Testing and inspection procedures
These procedures should be very reliable and latest technologies and instruments and tools are to be used.

7. Conclusions
In the context of using local expertise for global competitive advantage, the following points are noteworthy.

1. Integrated Materials management which includes vendor training and development.
2. Use of latest technology even at the suppliers’ end.
3. Total Quality Management with special focus on Inspection and testing with cutting edge technologies, Adherence to international standards.

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