

# **A SPECULATIVE STUDY ON SKILL GAPS IN LOGISTICS INDUSTRY – INDIAN PERSPECTIVE**

J.Joshuva Alexander<sup>1</sup>, Ashwin Kumar Goyal<sup>2</sup>, Ankit Dave<sup>3</sup>, Mudit Desai<sup>4</sup>, Vignesh P.B<sup>5</sup>  
Jindal Global Business School, Sonapat, Haryana

## **ABSTRACT**

The Indian logistics industry is developing rapidly, with the interplay of changing government policies, infrastructure, and change in technologies; this defines that Indian logistics industry can able to satisfy its customers apart from its various challenges with better coordination across various government and private agencies for multimodal transport in India. At firm level, there should be a strong human resource support and management to achieve or perform better outside the firm. To strengthen that, we came up with few challenges facing by Indian logistics sector and its possible remedies to overcome all the hurdles related to human resources in the logistics sector.

*Keywords: Logistics, Human Resources, Skills, Gap Analysis*

## **INTRODUCTION**

The logistics industries around the globe are valued about US\$3.5 trillion, out of which India's share is currently estimated at US\$ 90 billion (CII, 2012), which points to the fact that logistics costs form 10-20% of Indian GDP. Moreover this sector generated employment for 45 million in the country which is more than the IT and ITES sectors put together. It is expected to grow at a rate of 15% to 20% annually, and by 2015 industrial experts predicted that the market share of organized logistics players is expected to double and reach revenues of approximately US\$385 billion (Chopra, 2012).

Logistics as a sector will become the backbone of successful trade movement and infrastructure development in India. At present, Indian logistics sector is receiving special attention by the government and private sectors for growth and development. The term logistics refers to the movement of any good (e.g. Hardware, documents, etc.) from its origin to its destination. The logistics sector plays a major role in this and the connectivity and convenience in operations is the key for sustaining global trade growth, which has several challenges and opportunities for the Indian economy. In this sector, there exist several frameworks and models based on the critical needs of the Indian economy. Despite all this, Indian logistics sector is struggling to compete with the global players, due to lack of infrastructure, skills gap, inadequate skilled human resources and some financial reasons. Several researches are being conducted by industrial professionals, experts to find out ways to improve the logistics sector through different perspectives. Apart from factors mentioned earlier, an effective human resource is the key strength of an organization in facing the challenges of business. Human resource is a group of individuals working together towards a unique vision and mission to achieve a common goal for organizational growth. Better human resources practices will lead to quality betterment, higher productivity, thereby reducing problems and bringing success of an organization. According to industry professionals, because logistics function has been ignored over the years, it is a challenge to hire talent in logistics. In this paper, we present various challenges faced (in terms of human resource) and possible ways to overcome them.

## **INDIAN LOGISTICS SCENARIO**

Indian logistic industries have the potential for sustainable growth & global development. Logistics costs form 13% of GDP in India, which is higher than other countries like US (10%), Europe (11%) & Japan (10%) (The Hindu, 2012), (Business Line, 2012), (CII, 2012).

Big investments & technological advancements in logistics still resulted in ineffectual development and slow paced improvements in the existing industry. The change in corporate business strategy has resulted in outsourcing or 3PL/4PL logistics so that companies can concentrate on their core business. These 3PL/4PL logistics will play an important role in the years to come. Companies that use logistic practices don't include it as a separate entity of operation. The resources are not available for a smooth streamlined operation. Today logistic industries are facing several challenges in term of skill manpower, Quality people, Process driven systems, etc. The unorganized players directly compete with organized players because of lack in awareness of Human resources practices. These practices help industries to develop their departments in term of skill sets, training and education of employees, organization and utilization of resources.

In this white paper, we will briefly discuss about the gaps in logistics industries in term of human resources. As FDI norms are improved, Indian logistic companies would see new era of development and would require quality manpower. The logistic sector is considered to be a non-lucrative career and so it fails to draw skilled manpower. It is a highly unorganized sector, resulting in implementation difficulties of standard operating procedures with respect to Human Resources. This along with shortage for Quality manpower, poor education, high attrition and lack of skilled manpower has widened the gaps in logistics sector.

Any logistics job these days requires packaging and other skills, good education for success and satisfaction. Many employees do not meet industry need. Aspirants should invest time and resources in training and development to meet the requirements of logistics industry. A Hay Group white paper on pay trends in India's express logistics sector discloses that the sector is dropping its talent to the wider transportation and general industry sectors and that much more is required to attract good talent from the market. It also mentioned a

difference of 7-8% in attrition rates of logistics industries. Some of the basic job requirements of logistic industries are shown below.

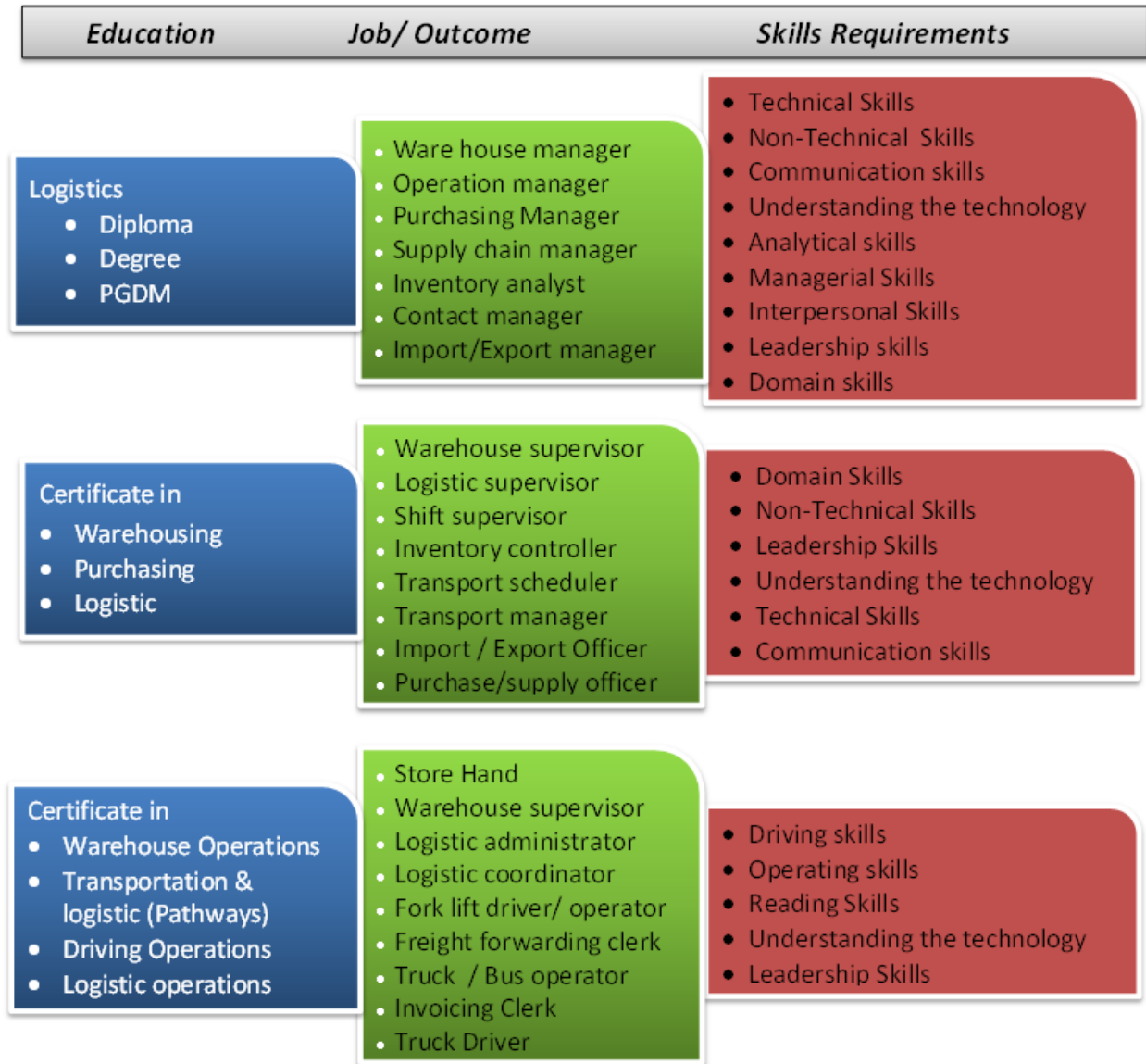


Figure1: Skills requirement as per educational criteria

## GAPS IN LOGISTICS IN TERMS OF HUMAN RESOURCES

When we compare the Indian Logistics sector with other developed countries' Logistics sector or any other sector for that matter, there are a lot of gaps in terms of human resources, infrastructure, technological, etc. In this paper we will focus on the gaps in terms of Human Resources only. We have classified these gaps into three categories viz., organizational, operational and education & training. The organizational gaps lead to poor HR policies, which in turn leads to higher attrition. Educational & Training gaps lead to insufficient and non-skilled manpower addition. Ultimately all the three categories make the sector very non-lucrative. Filling these gaps will make the sector lucrative to outsiders.

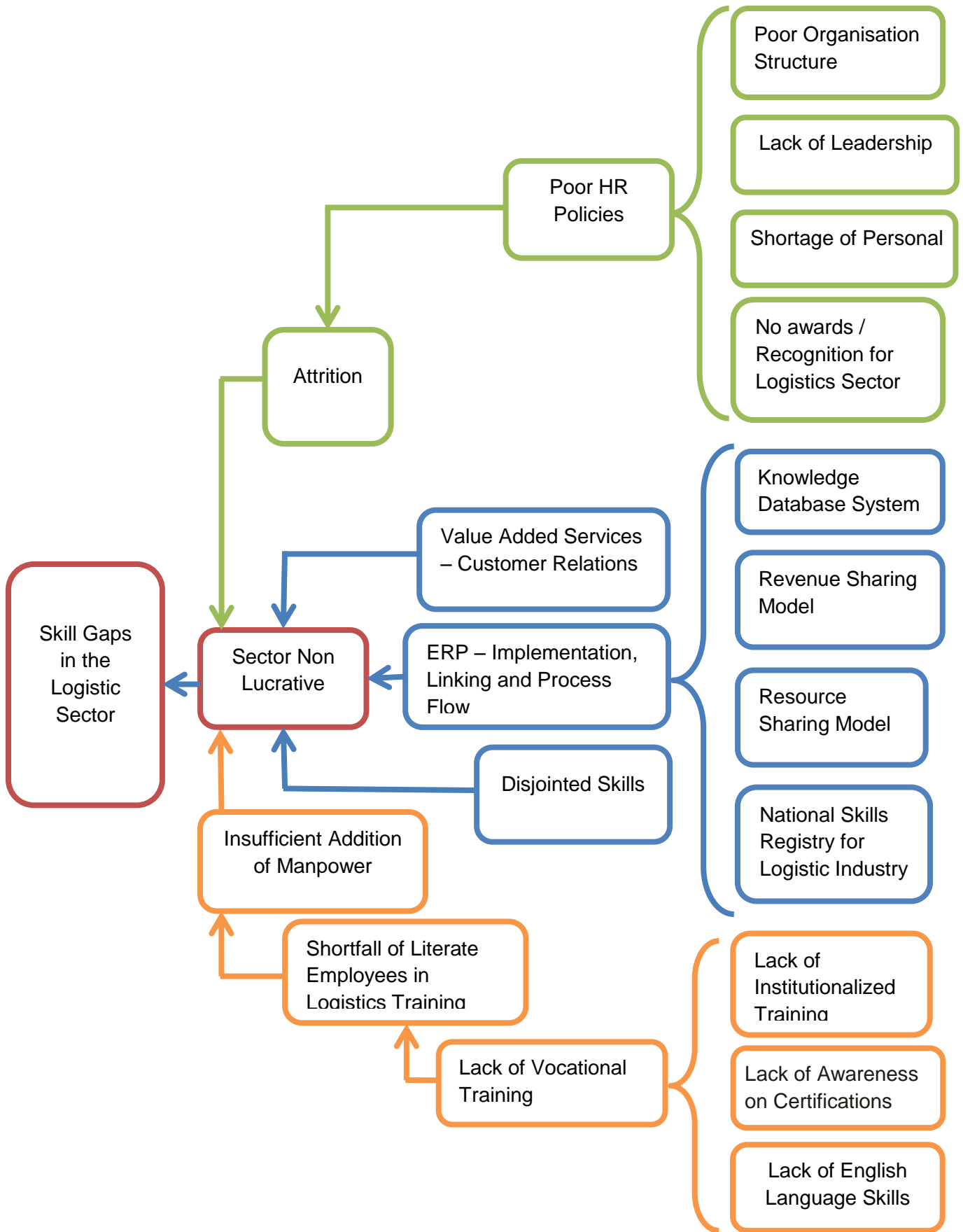


Figure2: Skills Gaps Chart in Indian logistic industry

## ORGANIZATION AND ITS PEOPLE (RESOURCES)

### Poor Organization Structure

In India, logistic sector is seen as most preferred and has become the area of priority. The issues in progression are inability to move to the next level of hierarchy compounded by poor organization structure. Organization structures are such that people are not self-motivated to move up in the hierarchy. For e.g. a truck driver who has an experience to 15 years of driving a multi-axel vehicle will drive truck for his entire carrier. If given a chance to get promoted to senior driver, he would be motivated to work for few more years.

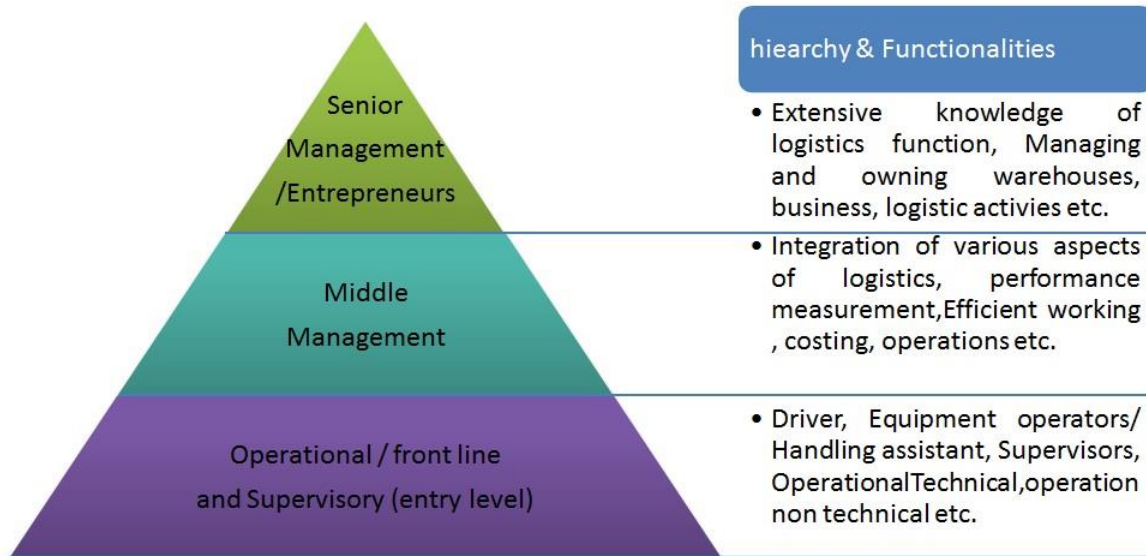


Figure3: Organization hierarchy and functionalities

Source: (Planning Commission of India, 2012)

The problem of growth in the organization is at the entry level where both skilled and unskilled staff and labour are in huge numbers for various operational activities. A clear hierarchy level or a career growth path is not present in the current organization structure of many companies. Due to this, people are not mentally prepared for long term commitments to stay in the organization. An experience of five years is at the same level as a fifteen year experience. There is no motivation for people to put extra efforts or to innovate. This results in higher attrition. People switch jobs frequently because there is no suitable designation for all kind of people with different experience levels.

**Recommendation:** Increase and clearly set the hierarchy to motivate people in positive way. Attach increment with hierarchy to attract people to work more and be loyal with the work.

### Lack of Leadership

Leadership and management are necessary components of any organization. Managers can produce better productivity and growth prospects by combining leadership skills with management traits. But the line between leader and manager is poorly defined. Current logistics sector is fragmented and needs to be integrated for better efficiency and functionality. But for this a better leader with a vision is needed. The lack of leadership will make the system inefficient and potential growth would not be achieved resulting in lack of motivation for employees. There would be no one to take responsibility to change the current organization structure, and take a calculated risk because the profile is not lucrative and there is no motivation to grow in the organization. A manager should be given responsibilities where he can show his charismatic leadership qualities.

**Recommendation:** Motivate people to lead the team, give challenges and task to work for the welfare of the logistic sector, give projects and make project leads to work in the development of the logistics sector.

### **Shortage of Personnel**

Poor HR policies are a major concern in logistics sector. Most of the recruitment is for entry level work only, where employees are majorly on contract and have no job safety. Moreover for the welfare of these employees there are no “labour management” managers who talk to them to discuss their problems and work for their betterment. Most bosses seldom engage with their staff (even with the top talent) about that they want in their careers. Its results are unskilled labour remain unskilled, no solution of their problem, no welfare program for labours, no quality in work. The reason is that management does not consider labour as their main resource. So there is no proper development in the area of labour personnel. Most employees don’t know what they’ll be doing after years. Another reason is the lack of accountability and proper training.

**Recommendation:** Appoint a labour manager who will work for the welfare of entry level employees and labours. Create a department, which keeps the detailed record of the type of work done by the employees, new skills learned during the employment period, if they do not attend such trainings then it could be found out from such records. These trainings could be linked to their promotion. They need to be taught how to do task if they are not aware of it.

### **Non Lucrative Sector**

The basic portrayal of logistics has been transportation and warehousing only which is considered as a driver or a store keeper job. So people are not motivated to work in logistics. Highly educated people do not find the potential for career growth. Though it is a priority sector, due to its unorganized and highly fragmented nature people do not consider it as a career. There is scarcity of skilled labours. There is no further development in logistics and it would remain as a secondary industry for the customers. Lack of investments will lead to lack technological advancement. The reasons include improper job descriptions, no proper degree courses to enhance the skills of a person and non-awareness of opportunities.

**Recommendation:** Proper marketing and awareness is needed to attract proper work force. Organizing the sector is very important. Growth potential should be highlighted in seminars, award functions and through company or project specific videos.

### **No Awards/Recognitions for logistics Sector**

There should be annual awards for every category right from senior managers to drivers who work hard to achieve the goals of the company. Employees should be motivated to work beyond their capabilities. Most of the good work is done by the bottom level employees. They should be awarded for their excellence, so that their hard work is noted. The impact of awards is so good that people will work more and report their work regularly. This would reveal the difficulties, issues and potential of the job profile. They will do this to get awarded. The joy and sense of achievement would enhance the employee confidence and morale. The reason for no awards is lack of awareness about the data and skill of the people and lack of centralized database of the employees in different companies.

**Recommendation:** A National Skills Academy award for logistics can be given where each employee would be evaluated based on data of their skills, training and type of work done by them. This data base can be used for lateral recruitment, where a person whose skills are matching the requirement is hired. For example, a truck is stuck on the highway and there is no way to move the truck due to heavily loaded goods and the structure of road. Then a very skilled driver is needed to move the truck from that place. Such work should be noted and awarded.

## **OPERATIONAL SKILLS**

### **Revenue sharing Model**

In a revenue sharing model, the company actually shares its revenue with other companies. Many times situations occur where there is only a part load or a half load of truck. Sending a truck with this much load is a loss for the logistics company. The company might have to reject the partial load because of no more bookings

for that particular destination. This happens because companies are either unaware of other companies that cater on the same route and sometimes they fear that the other company who is filling the remaining load on the truck will poach the client in the future.

**Benefits:** The benefits of a revenue sharing model are that companies can carry on their business as usual even with part loads. They can provide delivery on time and thus client satisfaction despite having only part loads. A better atmosphere of co-operation is created. Even the same company could get a call from its competitors in the future for such a shared revenue consignment. (Wu, 2012).

### **Resource sharing Model**

In a resource sharing model, companies share each other's resources such as trucks, cranes, other equipment and even human resources such as drivers. Without such a model in place, every company has to either buy or lease resources and equipment for their own use. They have to even hire people with special skills like crane operation, high altitude driving skills. Logistics sector in India is highly fragmented. A lot of regional players with their own advantages and disadvantages are spread all around the country. The mentality among these small companies of possessing these resources is that they have these resources as their USP. So sharing these might lead them to loss of prospective revenue.

**Benefits:** The benefit of a resource sharing model is that all the companies don't have to invest in equipment and other special purpose resources for just few consignments. Also, they could serve their regular client's special need of a particular type of consignment which is not a part of the daily business of a company. The resource providing company could charge a usage fee on the requesting company and earn additional revenue from it. For example, requesting for a heavy lift crane for a special consignment. And, requesting a driver for a consignment to a hilly area like Himachal, where the company does not do regular business. This way the company could still serve its clients without having to own special resources. (Jing, Kai, Yuejie, & Jingna, 2009).

## **TECHNOLOGICAL SKILLS**

### **ERP – implementation, linking and process flow**

Every company cannot invest huge money for implementation of SAP-ERP and other such sophisticated software. Also, many do not realize the potential benefits of such systems. Even who have such software, do not know all its functionality. If a company does not have an ERP, then a lot of additional cost is incurred which could have been saved with such system in place. Also, it leads to lack of informed decision making and just in time solutions. The reason for not using an ERP is the high cost. Also, lot of training and skilled staff is required to use and filter the useful information from such software. The talent to read the charts, graphs and other MIS reports and convert it into a potential opportunity is limited. The smaller and cheaper software that are available do not provide such details and do not inter connect with clients and other company systems.

**Benefits:** The benefits of the system are providing "Just in Time" solution to clients and making informed decisions. For example, if you could know that your client has 300 tons of material in work-in-progress stage and that it might be converted into finished product in 2 days of time, then the company could arrange for resources such as trucks, drivers and free up the warehouses for the client on time and use its resources optimally (SAP).

### **Knowledge database system (Documentation of own processes)**

Very minimal documentation occurs in logistics sector. The benefits of documentation are not known to the staff. There is no knowledge of proper methods or guides as to what is to be documented. But not documenting the process does not affect the company in any financial terms. But in the long term, potential benefits are lost. The benefits are not monetary but operational. Companies consider documentation as an additional burden, because it involves hiring a separate person who would continuously do documentation which does not add any value. Also, the managers or other staff might have to spend extra efforts on this activity.

**Benefits:** The profits of a knowledge database are operational rather than monetary. The company could document the process used in a particular consignment, resources used, equipment, environment, client, method, payment, difficulties, duration of the consignment, etc. This might come handy in the future when similar consignments are handled. When new staff is hired, they could be trained based on these reports. Also, these documents can form the source of case studies for business school. Overall, this results in the betterment of the company and the industry as a whole. (Chow, Lee, & Chan, 2005).

## **NON – TECHNOLOGICAL SKILLS**

### **Value Added Services – Customer Relations**

Value added services are a new buzz in every industry. They aim at customer satisfaction in turn leading into “customer delight” leading to repeat business. Companies want to use them, but the frontline employees are not properly trained. There is no negative impact of not using value added services, but there are a lot of positive effects of using them. Value added services result in brand recognition through word of mouth by the customer among its peers. The reasons for using of value added services are that logistics sector is very competitive with many companies fighting for the same clients. So the only way for a company to differentiate itself from others is through “Value Added Services”. For example, getting constant feedback on the consignments and improving on that, packaging, labeling, tracking, serving with smile and right attitude, rewarding and recognizing the top clients. (Mitra, 2010).

**Benefits:** Benefits of this model include repeat business with client, spread of company name and its culture among clients through word of mouth. Trust winning can provide opportunity for backward integration with the client.

### **National Skills Registry for logistic industry**

There is a shortage of skilled employees in logistics sector. The shortage is in terms of people, who can handle special equipment, drivers who can drive on high altitude roads, special consignments, etc. There is a lot of time and money involved in training people for such needs. Also, there is a fear of attrition which might result in loss of revenue and time invested in training. There is no database of people registered with such skills for logistics sector. The effects of not registering skills include intense background verification for the same employee when hired in another firm after he/she quits previous firm. This leads to wasting of time and money. Also, there is no proper track of where the person has worked, what were his/her skills, etc. The reason is that there is lack of support from the industry as well as the government for this initiative. But this model already exists in the IT industry in the name of NSDL.

**Benefits:** If a skills registry database is in place, then lateral employee background verification is a very easy and seamless process. It just involves entering the name and ID of a person into the database and the database returns a report of the employee. Also, this could encourage new talent into the industry as companies can hire talent from this database when they require. People with special skills and special equipment handlers can highlight their skills and thus can come into the eye of needy companies. (Waema, et al., 2009).

### **Disjointed Skills**

There exists a lot of logistics staff that have various skills, which were acquired as a result of some short consignments, job hopping, etc. But these skills were not imbibed as a part of training. So there is no connection between various skills. Some people on the floor, i.e., the ones who deal with the operational part of logistics cannot readily link up their various skills with each other to come up with an efficient solution. This leads to waste of time and resources. The reasons for this are a lack of proper training with hands on sessions. (Kaur, 2011), (Asthana, 2012).



## TRAINING AND EDUCATION

According to a report by (KPMG, 2008), from a survey done on 80 logistics company it was found that the manpower costs forms 8-10% of overall sales in the sector (In case of road logistics it is 4%). This roughly translates to about 500 billion spent on logistics manpower annually. Of this only 13-14% are spent on non-salary expenses such as manpower development items like welfare, training etc. This share is less compared to global logistics countries which spend more than 20% on non-salary items.

### Lack of Institutionalized Training

We will broadly discuss about this in three categories – for Drivers, loading supervisors, Managers/Senior level Managers

Truck drivers come into a profile with the most critical skill gaps in the road freight segment. The profession attracts largely illiterate people with no formal training for the job. There are around 3 million truck drivers (KPMG, 2008). This is likely to swell to nearly 5 million by 2015. This means around 0.15 million new truck drivers are required and if we assume 50% of it has to be trained then almost 100 institutes are required at the scale of “*Namakkaal*”. There are around 0.3 million loading supervisors currently and this figure is expected to go up to 0.5 million by 2015. However there exists no formal training mechanism for loading supervisors. Very few organizations offer training modules for the new recruits, who are absorbed. There are very few logistics industry education and logistics certifications in logistics industry. Thus due to lack of proper training and institutions, making recruits available in the market becomes tough. Further without proper and skilled manpower the efficiency in the operation will not increase and benchmarks won't be created. Logistics industry should promote institutions for drivers because there are lacunas in the licensing test conducted by Government. Training modules have to be prepared for loading supervisors and incentives should be offered to motivate them. Similarly, an institution should be set up to train and educate managers to lead the organization. This can be offered as a degree with respect to the industry. So they can match the industry requirement with the candidate skills. With growing demand for global logistics they can train them for future challenges.

**Benefits:** With proper training the skill level of drivers will be enhanced. The number of accidents involving truck drivers in India is alarmingly high, with fatality rates about ten times than developed economies. Apart from loss of life, the annual economic loss from accidents has been estimated to exceed INR 550 billion. These trainings will reduce the fatal accidents and the associated losses. With efficiency of loading supervisors the total efficiency will increase in the operating arena. Candidates already trained in an institutionalized set up, need not go through a gestation period in the organization, the company can benefit from the candidate as soon as he is hired.

### Lack of Awareness on Certification

Though there are various Global certifications, very few people are aware of them. Most of the Indian logistics firms do not emphasis this for recruitment or during appraisals. (CII, 2009). These certifications usually discuss the best practices and standard operating procedures. Global recruiters validate candidates using these certifications for recruitment and promotion of their managers. This has led to the failure of Indian logistics and their lagging in sophistication and efficiency compared to logistics firms in developed countries. Certifications will enhance an employee skill level. Certifications offer the employee an opportunity to enhance his career and it keeps him motivated to try and implement newer techniques and global best practices. These come handy when he gets an opportunity to work on off shore logistics

**Benefits:** By creating awareness and sponsoring the employees to take these certifications, their skill levels can be enhanced. Employees see it as an opportunity to enhance both domain knowledge and career prospects. Certifications have to be linked with performance appraisal to effectively motivate them to moving forward.

### Shortfall of Literate Employees in Logistics

Many Indian states demand the minimum requirement of Truck drivers to be X standard. Around 50% of the drivers are less than X standard. The loading staffs in most firms are semi-literate (KPMG, 2008). The impact is that in the case of Truck drivers with lack of education it is going to increase the demand for drivers as most of them won't meet the statutory requirements set by the government. With already a shortage for skilled drivers it is going to be a huge challenge for the logistics industry in the coming years. Having employees with literacy is not only the need for the statutory requirements but also the need of the company. The loading staff should also be literate so that they can adapt and learn fast in a working environment.

**Benefits:** With firms expanding global operations, it's the need of the hour to ensure that they have literate resources. This will help in quick transformation to the challenges and the need of the industry. With literate employees it will be help in building an effective organizational culture. The training benefits will also be reaped faster with literate employees

### Vocational Training

The vocational training framework in India is largely driven by the ITIs (Industrial Training Institutes) and ITCs (Industrial Training Centers), covering skills ranging from electrician, welder, mason, carpentry, painting, and catering, etc. However, logistics skills have not found their place in the current setup because of its quasi-technical nature. Vocational training for Drivers in particular has to be conducted for special operation like High altitude driving, liquid tanker driving, driving in snow, hazardous material transport and double trailer operations. There has been a lack in internal promotion of these training in the Logistics firms. (logisticstimes.net). Usually the availability of these special operation drivers are scarce and are compensated heavily for the nature and risk involved in the work. This increased the cost of operation is transferred to the customer. The reason is that development of special skills is imperative for most logistics firms. With increasing variability in the operating cost due to fuel hikes, cost reduction programs are required. The vocational Training will also act as a career development for truck drivers.

**Benefits:** Creating a pool of skilled manpower in the firm will lead to profitability and timely service of the customers. This will enhance the overall skill level of the industry. Vocational training will also attract other people in pursuing their career as drivers.

### Lack of English Language Skills

With the logistics firms going global the industry has to impart and develop English speaking skills to communicate with their global peers. With multilingual states and instructions on road banners increasingly displayed in state language and English language, basic knowledge of the language is required. With increasing globalization the managers and supervisors need to effectively communicate in a common language to understand the customer requirements and building long term rappsorts. English being a universal language, and logistics being a field of cutting across different nations, it is a mandatory skill. This should be imparted by training or by recruiting people with soft skills.

**Benefits:** This would benefit the company in long run; it develops a culture and imparts them with soft skills. Though it is an intangible benefit it is most required for the industry as a whole (KPMG, 2008).

**Table 1: A Framework of Estimation of Training Needs**

LOGISTIC ACTIVITIES	MANAGEMENT LEVEL	PRIMARY TRAINING	SECONDARY TRAINING
Transportation	Driver	Driving Skills, Material Handling Techniques, Turn Around Time (TAT)	Fire Fighting, First-Aid, Tracking System, Ethics, Basic Sanitation And Hygiene, AIDS Awareness

	Equipment Handling / Operational Assistant	Mechanical Maintenance	IT, Safety Measures
	Middle Management	Documentation, IT, Logistic Certification, Operations Management, Economics	Performance Measurement Tools And Techniques, HRM
	Senior Management	Extensive Knowledge Of Transportation, Transportation Management Systems (TMS)	Marketing, Finance, Operation, HRM, Etc.
<b>Production &amp; Packaging</b>	Equipment Handling / Operational Assistant	Basic Scales, measurements, Check Packages For Number Of Items, Consolidate Or Deconsolidate	IT, Safety Measures
	Middle Management	Documentation, IT, Stock Keeping, Inventory Management, Operations Management, Economics	Performance Measurement Tools And Techniques, HRM
	Senior Management	Extensive Knowledge Of Product and Packaging	Marketing, Finance, Operation, HRM, Etc.
<b>Inventory &amp; Warehousing</b>	Operation Assistant / Equipment Handler	Stocking, Packing And Handling, Material Handling Equipment	It, Safety Measures, Cleanliness, Space Utilisation, Fire Fighting
	Middle Management	Inventory Management, Costing, Operations, Negotiation With Clients	Performance Measurement Tools And Techniques, HRM
	Senior Management	Managing And Owning Warehouses, Warehouse Management System (WMS)	Finance, Operation, HRM, Etc.

## CONCLUSION

The growth of the logistic sector is highly dependent on three factors 1) Organization and it's People (Resources) 2) Operational Skills and 3) Training and Education. We need to increase hierarchy positions at the bottom of the organization, so that employees get motivated to work more. Effective development of the leaders will result in a proper channel and understanding the problems of employees and the working environment. Logistic based awards to the deserving employees (based on specific skills, education, and level) would result in boosting morale and thus productivity. These awards would also help to make logistic sector more lucrative as 70-80% of the employment is at the bottom level. Suitable training and enhancement of stated skills of current employees would enable development of logistic industry. Increase in literacy ratio can improve the technology part, as understanding the technology is a necessity of the future. Another aspect of this technological enhancement can also be used in operational models .i.e. the revenue sharing and resource sharing models which can also be used to motivate companies to work together; monetary benefit can be attached to use the skills and talent of the people of other companies. A national level skill database should be created, about the skills and certifications of the industry professionals so that people of different companies can use the same resources for the similar kind profile needs. A knowledge database of own process documentation can aid in training of employees, and as a case study in universities. This will benefit the employees and the company in many ways including monetary benefits and growth.

## BIBLIOGRAPHY

1. Business Line. (2012, June 13). *India slips to 46th rank in logistics performance index*. Chennai, Tamil Nadu, India: Business Line.
2. CII. (2012). Retrieved December 2012, from CII Institute of Logistics: <http://www.ciilogistics.com/newsroom.htm>
3. The Hindu. (2012, June 13). *Revised guidelines soon for use of excess land in major ports*. Chennai, Tamil Nadu, India: The Hindu.
4. Asthana, S. (2012). Human Resource And Skill Gaps In Logistics Services Industry In India. *International Journal of Research in IT & Management*, 2(2).
5. Chopra, D. P. (2012). *The Indian Logistics Industry - An Overview*. Dewan P.N. Chopra Consultants Private Limited.
6. Chow, H. K., Lee, W., & Chan, F. T. (2005). Design of a knowledge-based logistics strategy system. *Expert Systems with Applications*, 29, 272–290.
7. CII. (2009, May 22). World Class Logistics Parks for India. *Knowledge Bank, Interactive Seminar on Logistics Parks*. New Delhi, India: CII.
8. Jing, Z., Kai, K., Yuejie, Z., & Jingna, S. (2009). Research on Logistics Resource Sharing Grid Based on SOA and Its Security. *International Conference on Information Management, Innovation Management and Industrial Engineering (iciii)*, 2, pp. 474 - 477.
9. Kaur, J. (2011, July). Talent Crunch: Right Education is the Panacea. *Cargo Connect, Special Feature*, 14-21.
10. KPMG. (2008). Skill gaps in the Indian Logistics. *INDUSTRIAL MARKETS*, 1. India.
11. [logisticstimes.net](http://logisticstimes.net). (n.d.). *logisticstimes.net*. India: [logisticstimes.net](http://logisticstimes.net).
12. Mitra, S. (2010). Logistics Industry: Global and Indian Perspectives. *European Business and Technology Centre (EBTC)*.
13. Planning Commission of India. (2012). *Report of the working group on logistics*. Transport Division. New Delhi: Government of India.
14. SAP. (n.d.). *ERP Procurement and Logistics Execution*. (SAP) Retrieved December 2012, from SAP: <http://www54.sap.com/solutions/bp/erp/software/procurement-logistics-execution/index.html>
15. Waema, T. M., Adeya-Weya, C. N., Odera, G., Masinde, E. M., Chepken, C., Kariuki, E., et al. (2009). Development of a Business Process Outsourcing Industry in Kenya: Critical Success Factors. *IRDC*.
16. Wu, Q. (2012). Outsourcing logistics channel coordination with revenue-sharing contracts for low value perishable product. *Service Systems and Service Management (ICSSSM)*. Shanghai.