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## A study on the competitive advantage of 5PL logistics based on case study and literature review

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### ABSTRACT

*The rapid implementation of RFID and related innovations in the SCM sector pushed the supply chain system into a new level of upgradation in a short span of time. Even Though the RFID technology ages back to the second World War era, the potential of this technology came into the mainstream of supply chain management just a decade ago. Our study mainly focuses on how and why 5PL logistics emerged to its current situation and what makes it stand out from the other four systems. In this study, we have reviewed three Articles for literature review and a real-life case study of a 5PL logistics providing company which is ' 5PL logistics solutions ' based on Abu Dhabi, UAE. The literature review talks about the different applications of 5PL logistics and the recent surge created on the supply chain and logistics system by the entry of 5PL logistics. The case study, on the other hand, describes how 5PL logistics are carried out practically in a 5PL company and what precautions, regulations, and parameters need to be followed is included. The rapid innovation happening in technology-aided with highly open economies with a forward view of global integration is firing up the manufacturing and service sectors, thus creating huge opportunities and responsibilities for logistics and supply chain industry.*

**Keywords**— 1PL, 2PL, 3PL, 4PL, 5PL, Logistics, Supply chain, Technology, RFID, GPS, 5PL Logistics solutions

### 1. INTRODUCTION

Logistics and supply chain industry faced rigorous phases of transformation in the way they function. From the beginning of Industrialization to the end of the second world war period the European continent went through rapid industrialization and this aided economies which were under the colonized rule of British empire with modern manufacturing technology and industrialization. This was the phase when the South African, Asian and Chinese economies stepped their foot into the manufacturing and exports. The continuous wars created huge demand for leather and jute products which are required for war supplies, thus resulted in popping up of numerous manufacturing units of textiles, bags, leather goods and so on in Indian and Chinese continent. Post to the world war's many economies were opened up and many were closed down for their own personal interests. But economies based on European and American continents were already in their move to the saturation point from the expansion stage. Whereas Indian economy remained close till 1991 which in turn created negative as well as positive outcomes to our primary, secondary and tertiary sector. The early signs of industrialization were visible since 1840's in India and that includes the industrial investments made by the TATA family too. Indian industries enjoyed high amount of market domination because of zero international competition and this actually turned out to companies exploiting their customers in a very unfair manner.

The era has changed along with that logistics and supply chain solutions have emerged into a new phase in the 21st century. The expansive opening up of economies and increasing trade agreements and collaboration among countries and MNCs have opened up huge amount of employment as well as business opportunities globally. The global trade happening through containers and cargo either through sea-borne or air-borne have witnessed steady growth till now and a lot of entrants have been reported for providing logistics and supply chain solutions in recent years. The introduction of breakthrough technologies like Artificial Intelligence, Block chain, Machine learning and so on enabled firms to cut down their costs and risk in a large manner. Previously logistics and supply chain operations were handled by specifically allocated departments in every companies and firms. It was part of the business operations and was a a very inevitable process which has to be managed with proper planning and execution. But today the entire situation has changed that many of the firms doesn't even have a department to handle their supply chain and logistics operations, whereas everything is managed by a 4PL or 5PL company. This can be one kind of an outsourcing method which companies can adopt to cut down their operations cost and raise the profits bar. The increased movement and density of containerized cargo trade

has created a huge opening for the existing logistics and container firms to upgrade themselves into a 4PL or 5PL logistics solutions provider. Companies like MAERSK, Bernard Schultz, FedEx, DHL etc. are opening up their 5PL services in a global range. As both the sea-borne and air-borne transportation facilities are available in a cheaper rate, container logistics through ocean and air happens in a rigorous amount today.

The rising emphasis on cheap and skilled labor available in the Asian markets such as India, China, Bangladesh, Pakistan, Thailand, Singapore, Malaysia etc opened up huge manufacturing and production units in these economies. This growing economic conditions aided with cutting edge technology and facilities in Asian economies created a rapid logistic movement among the European - American continents to Asian continents and vice versa. This opening up of huge trade opportunities and demand for 4PL and 5PL logistics providers are driving up employment as well as huge investments in this sector. The transformation from 3PL logistic system into 5PL logistics made SCM a separate business entity in the market which eventually is developing its own market space, competitive advantage and market competition.

## **2. ANALYSIS AND DISCUSSIONS OF LITERATURE**

### **2.1 New trends for service industry**

With the impact of globalization, the relevance of customer service is accelerating. Logistics serves a leading role in customer service in any supply chain philosophy adopted by the organization. As logistics complexity increases in global trading, the organization needs truly innovative concepts like logistics from third party vendors. This article highlights the concepts of supply chain, logistics, the need for new logistics outsourcing patterns, the latest concepts like Fifth Party Logistics Providers (5PLP) and Seventh Party Logistics (7PL), benefits and barriers to 3PLP implementation. (Vinay, Kannan, & Sasikumar, 2009)

### **2.2 Determinants of fifth party logistics**

A networked Supply Chain Management (SCM) approach's theory and practice is used to trace the evolution of management logistics. Reforming influences on competitive forces had already deregulated, globalized, and innovated, fundamentally modifying SCM's conception and practice. Among other trends, there also seems to be increasing need for strong inter firm networks. Changed functions of procurement and customer service lead to innovative strategies of leadership, market environments and modes of transport. Radical developments in the management of supply chains are now commonly embraced by electronic commerce, particularly in transport and distribution. Managing logistics services therefore becomes fundamental to the competitiveness of companies. Increased confidence between companies and their SCM suppliers is encouraged by economic imperatives, technological innovations, market competition and organizational capacity to provide sophisticated logistics services. The outsourcing of Fourth Party Logistics (4PL) services is recognized by issues and future trends. Possible future ' 5PL ' services are meta-analytically stated, with suggestions based on novel ideas for future empirical research. (Peter, Balan, Albert, & Aleksandra, 2012)

### **2.3 Logistics in digital future**

This article seeks to analyze the prospective future of the 4PL idea based on specialist views with a particular focus on the impact of digitalization resulting in disruptive supply chain conversion. Current and future settings compare service agreements, supplier capacities and advantages arising from a 4PL relationship. The study follows an approach to exploratory combined techniques with semi-structured interviews accompanied by a panel of experts. This creates a foundation for an online survey questionnaire to inquire through a sample of participants from multinational companies on significant future elements of the 4PL idea. The findings indicate a clear trend away from merely organizing transport and logistics operations towards providing an IT platform as well as additional value-added service activities such as planning, analysis and tracking. In addition, IT capacities in the future seem to be a significant differentiator for 4PL suppliers. In addition, relationships between 4PL suppliers and their customers are becoming closer and more strategic, leading in a client not only valuing direct cost cuts, but also improvements arising from optimized activities through superior assessment and scheduling features. (Hans, Carolin, Michael, & Matthias, 2019)

## **3. CASE STUDY**

### **3.1 5PL Logistics solutions**

5PL Logistics SOLUTIONS was one of the leading supply chain companies which was formed under FoodCo Holdings PJSC, in 2015 in order to cater to bring an well-established supply chain network, which offers a full packed facilities and solutions to the companies which are interested in expanding the business activities into the emirates, and hence provides an integrated platform to the business. The innovative and smart technology approach to the particular sector offered them good customer base support as well as it helped them to gain competitive advantage over the current market scenario. This holistic approach helped them to ensure the growth and success in the market.

5PL Logistics Solutions is one of the most equipped company which offers best supply chain experience and also solutions to the business management, which has a high-tech temperature-controlled facility, a fleet of state of the art vehicle and digitalized delivery of information with full facilities of modern business center.

## **4. HOW DOES THE 5PL LOGISTICS SOLUTIONS USES 5PL TECHNIQUE**

### **4.1 End-to-end multi-model**

5PL Logistics Solutions is one of recognized company not only reaching the customer destinations with different modes of transportation but also provides professional assistance through planning, management and execution of complex, geographically distributed projects, most especially in the Middle East and Africa. Due to a wide range of experience in the field helped them in recognizing the possibilities in the particular sector and the differentiated process of conducting business helped them to stand out from their competitors.

#### **4.2 Customs brokerage**

With the transparency in the business activity they perform and their vast experience in the field helped them in understanding the proper geographical conditions in the Middle East and Africa region, they aim to provide their customers with customs brokerage solutions. No matter whether you export or import, their ultimate goal is to provide you with the assistance that help you achieving your end result by considering your best interest.

#### **4.3 Global forwarding**

With the help of their strategic techniques and agreements, they are able to provide you the most value for money movement for your goods, be it by any mode of transportation. While you load the goods to the container, they will provide a wide range of solutions for the freight forwarding. Being a regional company they are well aware about the regulatory standards in the Middle East and Africa and adhere to full compliance and demand compliance from the suppliers too.

#### **4.4 Warehousing and distribution**

One of the main facilities that 5pl solutions tried to offer to its customers is that well advanced warehousing facility to its customers. Which had the latest technology which controls the inventory and record of all the inflow and outflow of the materials. As taking into consideration the climate condition of Middle East and Africa, they constructed a 11,000m<sup>2</sup> of temperature-controlled storage ranging from -18°C to 23°C and also they offer customized warehousing solutions to its customers.

#### **4.5 Contract logistics**

Be it any function in supply chain, 5pl solutions will be the logistics partner to manage the entire supply chain obstacle and make it more simple and easy in doing the business. Their main focus is not just providing you with assistance but also plays as a partner in doing the transactions which will drive your business to an effective and efficient stock management and thorough supply chain optimization.

#### **4.6 Importer on record/exporter on record**

If a company doesn't want to expose to any UAE market or not directly linked with the UAE-based free zone companies, 5pl solutions will play as a middle agent who act as an importer and exporter, warehousing and distribution of goods and services. And also they will take necessary actions in order to sustain in the market for a long term goal.

### **5. 5PL SOLUTIONS UPGRADED TECHNIQUES**

#### **5.1 Return to service/recovery time objective**

One of the main factors of every company is to how effectively they reach out to their customers and supply chain plays a vital role in the time sensitive products. They analyze the market conditions and provide end-to-end services to its customers. The facility of real-time monitoring of the status, the customers were able to understand their progress in the market. And they ensured that the company meets the needs and wants of the customer and reduces the project related heavy penalties.

#### **5.2 Active Security (AS)**

Transparency in the process helped the customer to manage their transactions. The real-time information system will give you an end-to-end visibility of the entire supply chain activities. They use GPS tracking, cameras with G-force sensors and RFID-based temperature sensor, and they use real time sharing of information related to risk associated in order to enhance the supply chain activities, while they offer a customized dashboard facilities for operational, financial and marketing information help them in effective decision-making. 5pl solutions will make you active participants in the transaction process in order to the security of your equipment or products as they are handled across the globe.

#### **5.3 Precise Product Integrity (PPI)**

The most important promise that every logistics company should offer to its customers that the protection of the products during shipment from the warehouse to the final destination. And it is difficult to check at the destination about the status of the product so 5plsolutions provides its end-to-end product safety through the real time information about the container details such as temperature inside the container and the vibration on container which can harm the products. They ensure full safety of the product as well as timely delivery of goods at destination.

#### **5.4 Cold Chain Integrity Live Management (CCLM)**

This is the technique mainly adopted for the safety of the products such as foods, pharmaceuticals and some of the chemical products. By using the GPS device and G-force cameras the truck can monitor and track the temperature level and give alert to any deviations in the fixed criteria. The most advanced technology used by the 5pl solutions help to actively manage the cold chain.

#### **5.5 Reverse logistics**

The function of supply chain doesn't stop by only delivering the products but also considering the needs of the customers. It includes the provision for repair and refurbishment. 5pl solutions provides state of the art infrastructure for servicing and repairing the products, which results in massive time and cost savings.

#### **5.6 Supply chain risk management**

Optimization and improving efficiency of supply chain management are associated with certain risk. When the company implements integrated technology for the better performance of the companies but in the initial stages these advancement faces a lot of problems. By the optimized and upgraded technologies they are able to identify the different risk associated with the supply chain and able them in solving them. They have introduced latest technology in order to understand different market scenario and this made them in forecasting the future of the business.

When we analyze the entire working of 5PL logistics Solutions we can conclude that, the 5PL technique is basically used for the betterment of the logistics function of an organization by planning and organizing the entire process of supply chain. Every company is influenced by the latest trends in the market. In order to attract the customer each and every company will make sure that customer satisfaction is attained by the efficiency of facilities and products that they offer. Adopting the latest technology in the market and synchronizing with those up gradations will drive the company into a success factor in the market.

## **6. FINDINGS AND CONCLUSION**

The purpose of the study was to find the marginal benefits of 5 PL based on the case study and literature review. It was found out that the need for new logistics outsourcing patterns, the latest concepts like Fifth Party Logistics Providers (5PLP) and Seventh Party Logistics (7PL), benefits the organization based on finance and time management. Changed functions of procurement and customer service lead to innovative strategies of leadership, market environments and modes of transport. Radical developments in the management of supply chains are now commonly embraced by electronic commerce, particularly in transport and distribution. Managing logistics services therefore becomes fundamental to the competitiveness of companies. Increased confidence between companies and their SCM suppliers is encouraged by economic imperatives, technological innovations, market competition and organizational capacity to provide sophisticated logistics services. The outsourcing of Fifth Party Logistics (5PL) services is recognized by issues and future trends. 5 PL needs latest technology and manpower to implement it.

5 PL Logistics Solutions is able to manage their business because of their innovative techniques and technologies adopted for managing and implementing the logistics. The company focuses on every aspects and requirements of the consumer which makes them unique. The strategies adopted by the company for on-time logistics ensure customer satisfaction to a great extent. 5 PL helps in making the process of logistics much easier and reduce the complexities which were present earlier in the transportation of goods.

This paper focused on how global logistics and supply chain industry went through a transformation phase after the developments happened in 3PL, 4PL segments which lead to the rise of 5PL logistics. This transformation for sure created high potential opportunities for existing logistics providers to expand themselves into a global 5PL provider. The technological advancements are one of the main reasons for the rapid digitalization in logistics and supply chain industry. This digitalization in a rapid pace lead to the transition of logistics from 1PL to 5PL logistics that made this industry an inevitable part of global and domestic economies. "It appears that 4PL's main activities in practice today are quite similar to the service portfolio of 3PLs. This may stem from the fact that large logistics groups (c1) are the main 4PLP known to the interviewees. Whereas direct cost savings are an important aspect, they also focused on operational improvements a 4PLP can achieve. Consequently, there is potential for the 4PLP to extend its current offerings into more value-added service and IT driven areas".

As it is mentioned above in the case study of 5PL logistics solutions, the company is highly technology driven with specified and pointed implementation of tech's like RFID, temperature and road dynamics sensors, GPS and live Cloud based recording and tracking of the whole supply chain process. But at the same time a question arises that will the company be able to maintain the implemented technologies during the long run. Thus the 5PL providers should be aware and updated about the technical aspects of the whole system to avoid overlapping of activities or ambiguities in each transactions. 5PL providing companies in the market must thus develop competitive advantage over competitors, especially on the technical aspect of logistics. While we conclude its important to notice the fact that the quick transition happened from 3PL to 4PL to 5PL in logistics and supply chain industry caused a numerous changes and ambiguities in the service's portfolio of this particular industry. Above mentioned observations are referred from available articles still may include subjective expressions of the authors. The ongoing R&D progress happening in the global technology as well as industry specific technology will definitely simplify the functioning and operations of logistics and supply chain industry thus aiding 5PL providers to develop competitive advantage over competitors and market. Whereas at the same time this tech driven advancement happening in the industry also puts huge pressure on companies to stay alert and updated about market conditions and expectations to survive the market war.

## **7. REFERENCES**

- [1] The Age of Industrialisation - ncert. Retrieved August 30, 2019, from <http://www.ncert.nic.in/ncerts/l/jess305.pdf>
- [2] The Early Entrepreneurs History - Knowledge Universe Online. Retrieved August 30, 2019, from <http://www.knowledgeuniverseonline.com/ntse/History/early-entrepreneurs.php>
- [3] Global 5PL Solutions Market 2019-2023 | Penetration ... - Business Wire." 22 May. 2019, <https://www.businesswire.com/news/home/20190522005279/en/Global-5PL-Solutions-Market-2019-2023-Penetration-Blockchain>. Accessed 30 Aug. 2019.
- [4] Global 5PL Solutions Market 2019-2023 | Penetration ... - Business Wire." 22 May. 2019, <https://www.businesswire.com/news/home/20190522005279/en/Global-5PL-Solutions-Market-2019-2023-Penetration-Blockchain>. Accessed 30 Aug. 2019.
- [5] "(PDF) Conceptual study on 3PL/4PL/ new trends for service industry." 25 May. 2016, [https://www.researchgate.net/publication/220399092\\_Conceptual\\_study\\_on\\_3PL4PL\\_new\\_trends\\_for\\_service\\_industry](https://www.researchgate.net/publication/220399092_Conceptual_study_on_3PL4PL_new_trends_for_service_industry). Accessed 30 Aug. 2019.
- [6] "(PDF) Determinants of fifth party logistics (5PL): Service providers for ...." [https://www.researchgate.net/publication/264438495\\_Determinants\\_of\\_fifth\\_party\\_logistics\\_5PL\\_Service\\_providers\\_for\\_supply\\_chain\\_management](https://www.researchgate.net/publication/264438495_Determinants_of_fifth_party_logistics_5PL_Service_providers_for_supply_chain_management). Accessed 30 Aug. 2019.
- [7] <sup>1</sup> "Current Advancements of and Future Developments for Fourth Party ...." 11 Feb. 2019, <https://www.mdpi.com/2305-6290/3/1/7>. Accessed 30 Aug. 2019.
- [8] 5pl Solutions." <https://5plsolutions.com/>. Accessed 1 Sep. 2019.
- [9] 5pl Solutions." <https://5plsolutions.com/>. Accessed 1 Sep. 2019.

- [10] 5pl Solutions." <https://5plsolutions.com/>. Accessed 1 Sep. 2019.
- [11] 5pl Solutions." <https://5plsolutions.com/>. Accessed 31 Aug. 2019.
- [12] 5pl Solutions." <https://5plsolutions.com/>. Accessed 31 Aug. 2019.
- [13] 5pl Solutions." <https://5plsolutions.com/>. Accessed 31 Aug. 2019.
- [14] 5pl Solutions." <https://5plsolutions.com/>. Accessed 31 Aug. 2019.
- [15] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [16] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [17] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [18] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [19] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [20] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [21] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [22] 5pl Solutions." <https://5plsolutions.com/>. Accessed 1 Sep. 2019.
- [23] 5pl Solutions." <https://5plsolutions.com/>. Accessed 30 Aug. 2019.
- [24] "Current Advancements of and Future Developments for Fourth Party ...." 4 Feb. 2019,  
[https://www.researchgate.net/publication/331038591\\_Current\\_Advancements\\_of\\_and\\_Future\\_Developments\\_for\\_Fourth\\_Party\\_Logistics\\_in\\_a\\_Digital\\_Future](https://www.researchgate.net/publication/331038591_Current_Advancements_of_and_Future_Developments_for_Fourth_Party_Logistics_in_a_Digital_Future). Accessed 1 Sep. 2019.