

## **3PLSPs in Pakistan: An Exploratory Study on MRO, Term of Service, Unique business Models, Fueling and Fee Charging Strategies, Adopted by MNCs and Domestic Firms**

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### **Abstract**

*An exploratory study that endeavors to bring out new dimensions related to 3PLPS through phenomenological approach. The study qualitatively highlights 'MRO' (maintenance repair operation), and 'term of service' as contributing propositions towards 'fee charging strategies'. During course of data collection and thematic analysis another proposition 'fueling strategy' is also highlighted. Data is collected through semi-structured interviews, conducted from four (4) 3PLSPs, Selected through 'purposive sampling' with an expert of the domain. Set of recommendations include 'policy recommendation' for the policy makers, and individual recommendations for all 3PLSPs working in Pakistan. Future research endeavors in the field of MRO, term of service, fueling, and fee charging strategies are also suggested. This study is a pioneering effort to explore and develop our understanding about these dimensions that directly or indirectly affect 3PLSPs.*

**Keywords:** 3PLSPs, MRO, term of service, fueling, and fee charging strategies.

### **1. Introduction**

Logistics has two major components: (1) warehousing, and (2) transportation management. Transportation is often managed through two ways; own fleet and third party logistics (hereafter; 3PL) providers. Management of own fleet has been advocated till late but due to complexity in its nature; like high recurring capital investment, maintenance technicalities, selection, training, development and retention of good drivers, higher turnover rate, fool proof and economic utilization of fuel, backhaul, lane imbalances, attaining economies of scale and absence of hard core skills, outsourcing is widely accepted and advocated by a considerable number of practitioners today. Local potential is always threatened till arrival of regional or international players and then on, a process of lean operations / logistics begins which benefits the local companies on one pretext or the other. MNCs and local major corporations are usually served by international or regional service providers (hereafter; SPs) but medium and small sized local corporations are willing to outsource but their business volumes are either not

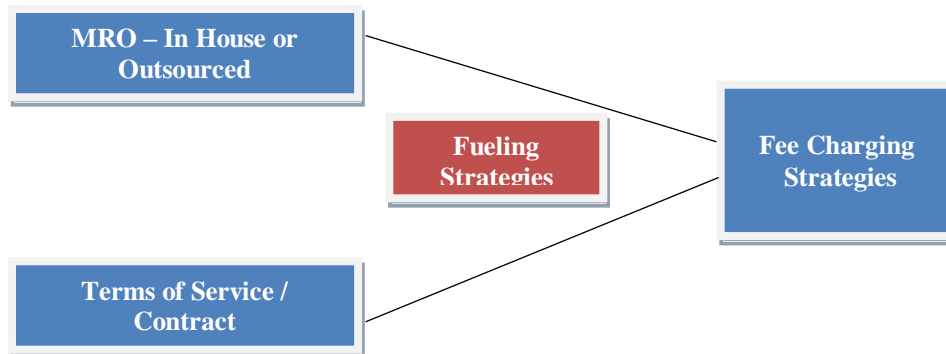
attractive or least attractive to international SPs, resultantly market gap generates which is rightly filled by local SPs who have already improved their operational efficiencies by competing with their international counterparts. Pakistan is a true example of local potential growth through the entry of internationally recognized SPs; like Agility and DHL, who paved the way ahead for PTN, TCS and BSL etc. A considerable work has been done in many related areas of 3PL and 3PLSPs, from hard core subjects like; appraisal and selection of 3PLSPs (Datta, Samantra, Mahapatra, Mondal and Majumdar, 2010), analytical modeling of third party service provider selection in lead logistics provider environments (Bhatti, Kumar and Kumar, 2010), value-added services (Soinio, Tanskanen and Finne, 2012), The effect of quality management on the service quality and business success of logistics service providers (Kersten and Koch, 2010), Role of Transport Flexibility in Logistics Provision (Naim, Potter, Mason and Bateman, 2006), collaborative logistics management and the role of 3PLSPs (Stefansson, 2006), Combining vertical and horizontal collaboration for transport optimization (Mason, Lalwani and Boughton, 2007), Successful management of a small logistics company (Gunasekaran and Ngai, 2003), to very related subjects like; the effects of transnational threats on the security of Persian Gulf maritime petroleum transportation (Modarress, Ansari and Thies, 2012), oil prices and transport sector returns (Nandha and Brooks, 2009), and loosely related subjects like; Taxing commercial motor fuel in the European Union - apportionment-based, destination-principle system (McLure, 2008).

Researchers have explored 3PL and the role of 3PLSPs as well as their country specific perspective for understanding of the subject; like, 3PL practices - an Indian perspective (Sahay and Mohan, 2006), 3PLSP scale for co-operative dairies in Indian context (Shah and Sharma, 2012), 3PLSPs in Spain (Carballosa and Tarres, 2011) and outsourcing logistics activities in Turkey (Aktas and Ulengin, 2005). There are other areas of research too, few of which are fee charging strategies and terms of service, are either unexplored or least researched, thus needs to be viewed for a better and comprehensive understanding of 3PL practices with a view to analyze multi-national 3PLSPs visa-viz local and regional players in general and Pakistan, in particular. The objective of this study is to further refine our current understanding of 3PL and 3PLSPs, in general and in the context of Pakistan, in particular, by understanding and comparing the business practices, adopted by multi-national, regional and domestic SPs, with a view to probe into, MRO (maintenance, repair operation), terms of services and fee charging strategies, whereas, secondary concern is to develop an understanding on their fueling strategies, term of and uniqueness of business model. MRO, terms of services, and fee charging strategies are less explored areas of 3PL and 3PLSPs, if understanding on these related issues is improved, it can benefit practitioners; for better negotiations of contract, as well as researchers; for studying deeper and clearer perspective of both SPs as well as customers.

## **2. Literature Review**

In the words of Scary (1999), *“Logistics is the corporate traffic cop, directing the flow of material from the source through production and distribution to the final customer”*. There are four (4) means of transportation, (1) road, (2) rail, (3) air, and (4) sea. However, another addition mean is of transportation is pipeline, through which (1)

water, (2) gas, (3) crude oil, (4) refined oil, and other fluid can flow. Pakistan, at present, is using all of them. Another mean is sweet waters transportation; very common in a number of countries in the world but is not used in Pakistan. Transport management has a few distinct elements like: (1) fleet procurement and weeding out of old vintage vehicles, (2) maintenance repair operations (MRO), (3) driver recruitment, management and retention, (4) fleet management, (5) asset visibility, (6) marketing and customer services, (7) outsourcing of certain transportation activities, (8) fuel, (9) oil, and (10) spare parts management.



**Figure 1: Conceptual Frame Work**

Initially intended two independent variables (MRO and Term of Service) increased to three, with fuelling strategies, during data collection (interviews and discussions with practitioners and expert) and analysis.

### 2.1 Perspectives of and Collaboration among 3PLSPs and User Enterprises

Naim, Potter, Mason and Bateman (2006) developed a framework that rationalizes transport flexibility into different types. In this way the role of the flexibility types in delivering specific strategic logistics outcomes can be determined. There is little research that addresses the issue of transport flexibility from a logistics perspective. Whether some of the new collaborative models for transport management are delivering better optimized solutions, is investigated by Mason, Lalwani and Boughton (2007) by using multi-dimensional methodological approach (including empirical, model building, opinion and archival evidence) and a series of quasi-delphi discussion sessions with logistics industry experts from three sectors, steel, grocery and construction and experienced academics in the fields of logistics and supply chain management. Rollins, Pekkarinen and Mehta<sup>la</sup> (2011) investigated inter-firm customer knowledge sharing between a buyer of a logistics service and the LSP. A survey study methodology was conducted on the data, collected from buyers of logistic services. Soinio, Tanskanen and Finne (2012) worked to combine the perspectives of LSPs and small and medium-sized enterprises (SME) in the development of value-added logistics services by using following design-science methodology and was carried out via semi-structured interviews within the case company (a large Finnish LSP), its customers, and experts from the area of logistics services.

## **2.2 Evaluation and Selection of 3PLSP**

Datta, Samantra, Mahapatra, Mondal and Majumdar (2010) worked to develop a decision-making procedural hierarchy for evaluation as well as selection of third-party reverse logistics provider (3PL) under fuzzy environment. Due to uncertainty, vagueness arising from decision-makers (DM) subjective judgment towards intangible (qualitative) selection criteria, fuzzy logic has been utilized to facilitate such a decision-making process for 3PL evaluation and selection. Bhatti, Kumar and Kumar (2010) made an endeavor to model the choice parameters for selection of 3PLSPs in global lead logistics provider (LLP) environments. Analytical hierarchy process (AHP) modeling has been carried out after questionnaire-based survey, results of which were moderated with inputs from experts from industry and academia. Determinants that affect the transportation outsourcing strategy of express delivery company in Taiwan were explored by Lee, Lin & Cheng (2013), by using case study methodology. Results proved that the situations; like, customer companies belonging to the high-tech industry, customers bringing higher freight revenue, customers having a better relationship with the company, and customers' company having a bigger scale, result in higher outsourcing probability.

## **2.3 Transportation Cost and Oil Prices**

McLure (2008) worked on taxing commercial motor fuel in the European Union – the case for an apportionment-based, destination-principle system. The empirical study analysis the issues like; destination-based taxation on motor fuels, economic distortion due to incentives and questionable tax base inherent in purchase-based taxation, loss of fiscal sovereignty, technology to determine distance travelled in member states and legal and political obstacles in adoption of apportionment-base system. Nandha and Brooks (2009) worked on oil prices and transport sector returns – an international analysis. A sample of 38 countries across the world has been taken for analysis, period ranges from Apr 1983 to Jun 2006 for various countries as per availability of related data sensitivity analysis has been used. Results show noticeable differences in the results of different regions and countries, suggested reasoning of which has been; regulatory and structural differences among various countries, yet confirms significant impact of oil prices over transport sector returns. Modarress, Ansari and Thies (2012) analyzed the effects of transnational threats on the security of Persian Gulf maritime petroleum transportation. Results highlighted seven factors for epidemic increase (200%) in attacks by pirates in Somalian Coast, which include lack of military presence, massive increase in volume of maritime trade, constrained passages, flags of convenience, global poverty, human trafficking, and weapon smuggling. Impact of transportation costs in both, supplier selection and inventory management decisions in the enterprises was addressed simultaneously by developing a mixed integer nonlinear programming model to properly allocate order quantities to the selected set of suppliers while taking into account the purchasing, inventory, and transportation costs under suppliers' capacity and quality constraints were analyzed by Mendoza & Ventura (2013). In particular, focused on the usage of trucks as a means of transporting goods and the option of the full-truck-load versus less-than-truckload (LTL) was studied. Actual LTL transportation costs are neither differentiable nor convex, so are modeled with a piecewise linear function using binary variables.

## **2.4 3PLSPs in Different Countries of the World**

UK Public transport industry is considered to be one of the most competitive sectors with airlines, rail and bus, facing throat-cutting competition not only from direct rivals but from other modes of transportation and private transporters. The Response of customers to improvements in quality of service by bus operators is discussed and evaluated by Disney (1998). Work of Waters (1999) focuses on changes to road transport in Poland during a period of economic transition, from centrally planned to free market economy. Achieving continuing economic growth without appropriate infrastructure is out of question thus the existing infrastructure is struggling to meet new demands. Gunasekaran and Ngai (2003) develop a case study conducted on a small 3PL company in Hong Kong. This company is interesting in that it has been designated as the “king” of Hong Kong’s 3PL (in-bound) logistics companies. The company has been successful in its overall business performance and in satisfying customers. Aktas and Ulengin (2005) determine the current situation of outsourcing logistics activities in Turkey, a country which has a great potential for logistics activities among the surrounding continents because of its geographical location. Stefansson (2006) derives a verified collaborative framework that specifies the role of different parties in contemporary logistics setups. To prepare this paper, a study of the logistics literature has been conducted together with several case studies.

A comprehensive survey on 3PL practices in India was carried out by Sahay and Mohan (2006) to establish the impact of usage of third party logistics services on business results. Study reveals that positive and significant impact on business performance though 3PL practices, in India, was found to be at a nascent stage and indicated a significant increase in outsourcing being planned across all activities of logistics in coming 2-5 years. Sohail, Bhatnagar and Sohal (2006) undertake a comparative analysis on the use of 3PL services by manufacturing firms in Singapore and Malaysia by using questionnaire survey, conducted in Singapore and Malaysia in 1998 and 2000, respectively, addresses key issues relating to the extent of usage of 3PL services, specific contract logistics services used, benefits for the user firms, obstacles encountered in implementing contract logistics relationships, impact of the use of contract logistics services on logistics costs, customer satisfaction, and employees of the user firms and the future plans of current users of contract logistics services. Relationship between the choice of integrated or functional LPs by Brazilian shippers and the type of their manufacturing process structure, and sophistication level of their logistics function, as well as the impact on choice of possible interactions between these two characteristics of the shippers, were studied by Wanke, Arkader&Hijjar (2007), by collecting in a comprehensive survey on the use of 3PLSPs in Brazil, using a sample size of 93 large Brazilian shippers. Using China’s burgeoning logistics industry as a backdrop, Tian, Yat, Lai and Daniel (2008) focused on how to build trust between logistics users and 3PL providers, and the antecedents and consequences of trust. A questionnaire-based mail survey was conducted in mainland China. The conceptual model was tested using structural equation modeling.

Kersten and Koch (2010) analyzed empirically the causal relationships between quality management, service quality and business success in German logistics companies.

The paper develops a measurement instrument of logistics service quality by combining conceptual approaches from service marketing with quality indicators from operations management. Juga, Juntunen and Grant (2010) investigated how perceived service quality influences both a shipper's satisfaction and subsequent loyalty in 3PL outsourcing relationships. Critical service dimensions are identified and their impact on satisfaction and loyalty are developed into a theoretical model, which in turn is examined empirically using structural equation modelling from a survey of 235 industrial companies in Finland. The results support the satisfaction-loyalty model in a logistics outsourcing context confirming that service perceptions influence loyalty through a shipper's overall satisfaction with the SP. Logistics outsourcing in Spain from the viewpoint of 3PL was analyzed by Carballosa and Tarres (2011). Case study methodology was used to study four 3PLSPs in Spain, chosen basing on market coverage and range of services offered. Main reasons to outsource logistics, were found to be: (1) kind of relationship built with SPs, and (2) involvement sought from providers in the management of supply chain.

### **3. Methodology**

An appropriate 'research approach' and adoption of a 'research method' is of panicle importance for attainment of research objectives, set by any researcher. Ary, Jacobs and Razavieh (2002) explained research approach into two broader categories: (1) the qualitative, and (2) the quantitative. A mix of both the approaches is called hybrid or mixed approach. Haque et al. (2010), defined qualitative approach of research, "*An inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting*". Qualitative studies are characterized by Yin (1994) as largely based on a researcher's description of a phenomenon, emotions as well as his reactions thereof. Approach of research, being adopted is qualitative in nature to explore further into the subject and qualitatively highlight the activities taking place at the back end of 3PL and 3PLSPs, which actually affect their services and related fee structure. The purpose of this research is exploratory where certain areas on the subject are explored for further refining our knowledge base about the subject, "3PLSP in Pakistan – a study on fee charging strategies, and MRO".

Phenomenology is the study of experiences from the perspective of an individual. In this study, initially intended two phenomenon (fee charging strategies, and MRO), and an incremental phenomenon (fuelling strategies), emerged during data collection (interviews, and discussions with practitioners and expert), are analyzed, being adopted by 3PLSPs of Pakistani origin as well as MNCs, to analyze existing practices to find out the best practices in the industry. Saunders et al. (2006) concluded that purposive and judgmental sampling technique helps researcher to exploit his judgment to select cases that best enable a researcher to answer his research questions and help in attaining the objectives, being set. Purposive sampling has been followed to absorb the best practices, followed / resorted to by MNCs, regional and domestic, commercial and public sector 3PLSPs, thus at least one organization from each group has been selected to represent all segments in the results of the study. Interviews have long been in use by the researchers as a mean to obtain detailed information on a specific topic of interest or a subject to a researcher (Wilkinson, 2003). The data used for the analysis is primary in nature and

obtained through interviews from senior management of 3PLSPs including MNCs, regional and domestic SPs. A combination of public and private sector SPs has been made to absorb both sectors' perspective. Sample size is four SPs: (1) a MNC 3PLSP, (2) a local 3PLSP, (3) an ATT SP, (4) a public sector SP, and (5) an expert in 3PLSP. Data has been collected, for analysis, through open-ended-interviews from professional managers from selected 3PLSPs. Interviews are recorded in their own environments to get a more true and candid opinion on the subject. Recorded interviews were then reduced to writing and shown to the 'respondents' to avoid any typos and misinterpretations.

#### **4. Data (Interview) Analysis**

Data analysis, deals with the realistic findings of interviews, combined comparison of findings and thematic analysis of audio recorded open-ended interviews. Following codes have been used, for absorbing repeated used in succeeding paras, being more representative of their respective firms: (1) Resp-1(domestic 3PLSP), (2) Resp-2 (domestic ATT 3PLSP), (3) Resp-3 (public sector 3PLSP - three executives), (4) Resp-4 (MNC 3PLSP), and (5) the expert.

##### **4.1 Fee Charging Strategies**

'Fee charging strategies', besides other factors, are also dependent on: (1) fleet induction decisions' (purpose and type of organization, financing model and pay-back period), (2) fueling strategies, (3) MRO, and (4) term of contract. There are two major components of cost: (1) fixed cost (includes pay of driver, depreciation expense, and pay of administrative staff), and (2) variable cost (includes hi speed diesel price, MRO, and toll paid en-route).

Resp-3 has developed its costing formula, over the years and fee charging is totally contract deed (CD) based; usually per ton per KM is fee charging contracted formula.

[R-3] *...our contracts are per ton per KM.*

When a vehicle has rendered the services, thereby meaning delivers the loaded commodity to the desired destination, a document, 'convoy note' is being cleared by 'the consignee' and the same becomes the authority for charging the contracted fee from the 'consigner'.

Resp-3 has organized contracting procedures, where rate are quoted and won. These rates are usually inclusive of all fuel increments, as rates are quoted after absorbing probable allowance for fuel fluctuation. However, in case of abnormal increase, when fluctuation can't be absorbed beyond a certain limit a comprehensive case for revision of rates is taken up, to avoid the chances of default.

[R-3] *...quotes rates after absorbing probable allowance for fuel fluctuation but it can absorb this fluctuation to a certain limit beyond which we takes up a case for revision of rates...*

Fluctuation in 'fuel prices' is too incremental and can become commercially infeasible in case where more increase in the fuel prices is experienced. Absorption of such abnormal increase through rate revision initiatives is commercially a 'bad practice' and thus demands introducing new and out of the box fee charging strategies to cater for abnormalities in such an uncertain environments, that of Pakistan. Therefore it is needed to conclude the contracts with fixed Cost costing base with floating fuel component to

absorb such fluctuations.

[R-3] *...this method of fee charging (fixed cost (per ton per Kilometer) and variable cost (fuel charges of the day, vehicle actually used) is commercially balanced...*

Resp-4 has different 'fee charging strategies' for different customers which includes: (1) trip based cost model, (2) turn round trip costing model, and (3) fixed and variable cost model.

[R-3] *It's different in nature for different customers: (1) trip based cost model usually one way journey for walk-in customers in liquid and dry cargo both, (2) turn round trip costing model (in crude transportation, turn round trip (filled; up country + Empty; down country), fixed (vehicle is allocated to a designated customers for the period of contract at a flat fee per month, as negotiated, even on 'no running' and variable (chargeable on per vehicle per Kilometers basis, in addition to the fixed cost) cost model.*

Costing formula (variable cost) encompasses: (1) oil, (2) fuel, (3) driver, (4) general maintenance, (5) tyres, and (6) trip's expenditure, etc. (less over head that are part of fixed cost).

#### **Total Cost = Fixed Cost + Variable Cost**

Average variable cost per KM ranges between Rs. 33/- to 35/- approximately for typically 40 tons load carrier.

Resp-1's project is a unique business model where medium and small sized trucks are provided along with drivers and fueling is the responsibility of the user and not the SP.

[R-1] *Project regional offices (1, 2, 3, 4 and new connection) are responsible for fuelling of allocated fleet of firm. Fuel accounting is managed and controlled by project and firm has no concern with this accounting.*

A Model of rent-a-car business at retail level has similar service offering but corporate clients are offered services on trip or mileage basis because a turnkey solution is expected. Resp-1 has a unique offering and project is a unique customer, and since objective of any business is to satisfy customer needs, a unique customer is well served with a unique offering. Resp-1 has a clean business with fleet provision, maintenance, repair and recovery only.

[R-1] *Firm is responsible for the fleet provided to project for: (1) availability of vehicle for required duration, on as, when and where basis, (2) provision of drivers to all allocated vehicles, (3) all fixed cost elements, (4) all variable costs including replacement of vehicles on expiry of useful life, and (5) accidents, etc.*

[R-1] *...we provide transportation turnkey solution to project in its complete area of responsibility which serves 18 million people in the economic and trade hub of Pakistan (Karachi).*

Resp-2 has unprecedented 'fee charging strategies' that are somehow similar to their competitors in the industry but their explicit elaboration on this formula to the clients is unprecedented. Formula is:-

[R-2] *We tell our clients clearly, what is to be paid to the transporters and what we charge for other services, thereby meaning our charging formula is known to client(s) i.e. **Transportation Charges** (as per market rate) + **Turnkey Solution***

### **Charges**

Opening of rates, in the market, on daily basis is another reason for this costing formula.

[R-2] *No doubt, rate certainty is an important component of any service offering but not in this sector because daily rate opening is an industrial practice.*

### **4.2 Fueling Strategy**

Fuel is a major component of variable costing model, thus all 3PLSPs do all out efforts to be efficient and effective both, by doing the following: (1) fuelling is controlled by managers and not by the drivers, (2) KMPL of vehicles is always updated and reassessed, (3) filling stations are selected all over the routes and vehicles are fuelled there, payments are made directly by SP, and (4) spot checks on 'contracted filling stations' and the drivers are checked regularly for quality and quantity and to guard against pilferage and theft respectively, etc.

Resp-4 pays for fuel to the selected suppliers (filling stations of OMCs) all along the routes, all over the country.

[R-4] *Firm pays no money for fuel to the drivers but fueling is done through selected suppliers (filling stations) all over the routes, in the whole country. Firm has selected suppliers (filling stations) from OMCs, (in the order of priority): (1) Shell, (2) Chevron-Caltex, and (3) PSO Ltd.*

As far as payment for fuel is concerned, resp-4 pays to the filling stations on fortnightly basis whereas, drivers are checked for quality and quantity through sport checks on regular basis.

[R-4] *Agility pays them on fortnightly basis. Drivers are responsible for quality and quantity in the first place, whereas sport checks are regular feature as per policy.*

Resp-3 has its trans-freight service / station (TFS) all along the routes throughout the country from managing fueling, accounting, and auditing.

[R-3] *NLC has its own TFS all over the route and fuel is provide from there, accounted and audited as a whole through drivers.*

Resp-1's project is a unique business model where medium and small sized trucks are provided along with drivers and fueling is the responsibility of the user and not the SP.

[R-1] *Project regional offices (1, 2, 3, 4 and new connection) are responsible for fuelling of allocated fleet of firm. Fuel accounting is managed and controlled by project and firm has no concern with this accounting.*

A model of rent-a-car business at retail level has similar service offering but corporate clients are offered services on trip or millage basis because a turnkey solution is expected. Resp-1 has a unique offering and project is a unique customer, and since objective of any business is to satisfy customer needs, a unique customer is well served with a unique offering. Resp-1 has a clean business with fleet provision, maintenance, repair and recovery only.

[R-1] *...we provide transportation turnkey solution to project in its complete area of responsibility which serves 18 million people in the economic and trade hub of Pakistan (Karachi).*

A considerable hassle of petroleum procurement, storage, availability on site, accounting, documentation and rigger of constant monitoring and evaluation for avoidance of leakages / theft / under or over invoicing, etc. has been set aside.

[R-1] *Project regional offices (1, 2, 3, 4 and new connection) are responsible for fuelling of allocated fleet of firm. Fuel accounting is managed and controlled by project and firm has no concern with this accounting.*

[R-1] *Charging is based on hours, vehicle is requisitioned to project and not basing on millage covered per day. We offer two packages: (1) 12 hours, and (2) 24 hours.*

[R-1] *Industrial standard is Rs. 7000/- (seven thousand) per vehicle per month, as fixed cost, and same is added in costing formula. All other variable costs are borne by firm (SP).*

#### **4.3 MRO – In-House or Outsourced**

MRO is an important component of ‘fee charging strategies’ because of the fact that the cost of MRO is added to overall costing model of any 3PLSP and thus the cost of MRO is transferred to the customer. Though MRO is an activity that was outsourced even before outsourcing of logistics function to 3PLSPs, and MRO with 3PLSPs is expected to be an outsourced activity. But in case of Pakistan, 3PLSPs are adopting to in-house MRO.

[R-5] *In-House is the Best but if and only if a 3PLSP can ensure: (1) zero leakages in workshop processes, (2) efficient and effective maintenance team, and (3) use of best available spares. But if these points can't be ensured, then outsourced model is much better.*

Different 3PLSPs in Pakistan are resorting to different models, like;

Resp-3 is still following the concept of in-house MRO, which was probably necessary at the time of its inception, being the sole operator of such a sophisticated fleet of imported vehicles but not now, when resp-3 has an old vintage fleet and state of the art MRO facilities are available outside, nearly in all big cities of the country. A limited outsourcing is compulsion, when vehicles are en-route.

[R-3] *Firm's fleet, for its maintenance, is dependent on own workshop, setup at Sultanabad, Karachi. However, TFS are located at eighteen (18) locations, all over the country, have limited capability and use the resources available outside. Thus a combination of both; in-house and outsourced maintenance is in use.*

Thirty eight (38) years old fleet is being maintained well but at a higher cost, thus resulting in drainage on profitability and revenue.

[R-3] *...firm is facing this (maintaining such a diverse and old vintage fleet is not cost heavy and drainage on profitability) drainage of profitability and hard earned revenue, badly.*

**Resp-3** has 743 vehicles at present with headquarters FS including both fleets; North and South. Resp-3 had, at one time, 1700 vehicles which have been reduced to present number. Further reduction is likely to bring it down to 500 vehicles. Resp-3 has most organized in-house MRO in Pakistan.

[R-5] *Resp-3 has the most elaborated system of in-house MRO with: (1) five base workshops, (2) maintenance facility every 100 KMs, (3) huge skilled*

*manpower, (4) availability of good spares, and (5) state of the art facilities.*

But why this most elaborated system fails to deliver assigned objectives in the case of resp-3, is highlighted by resp-5.

[R-5] *With a lot of leakages in the system, this most elaborated system is highly inefficient and ineffective.*

**Resp-4** being a MNC, was following a hybrid of both, till late but now it follows OEM maintenance model for outsourcing at outside in-house repair reach and most of the repair and fabrication is done in-house, after establishment of in-house repair facility.

[Resp-4] *We have developed tremendous capabilities in: (1) fabrication (outsourced previously, now in-house), (2) maintenance (hybrid of in-house and OEM repair but now mostly in-house). Our locations are all over Pakistan: (1) Super High Way (Karachi) is the biggest repair facility and the only fabrication facility, (2) Mehmood Kot (Multan), (3) Sahiwal, and (4) Sheikhpura (Lahore).*

As regards to the manpower at each repair facility RESP-4 has an efficient preposition to keep the repair cost low and ensure better maintenance. Moreover, mobile repair vans are also supporting the MRO.

[Resp-4] *Strength varies but generally it is around 23-34 personnel each, providing 24/7 services. Mobile service vans are held at each station to cater for farther reach for repair of vehicles en-route.*

Millage for engine overhaul is pre-determined and cost of this overhaul is paid out of fixed cost.

[R-4] *After 400,000 KMs running, firm gets an engine overhauled. This cost of overhaul is paid out of fixed cost (e.g. retention fee of vehicle), paid without physical usage of vehicles.*

**Resp-1** also, in this era of specialization, where focusing on core competence and outsourcing of less important functional activities, is a common practice, has set up two workshops with two mobile repair teams (MRTs).

[R-1] *AOR is divided into two regions, segregated by the penetrant (Shahrah-e-Faisal) with one workshop each at: (1) Korangi, and (2) Super Highway. At these facilities available MRO include: (1) field repairs, (2) component replacement and assembly replacements, (3) close liaison with professional workshops in their area of operation, (4) welding, denting and painting, and (5) ladder mounting modifications, etc.*

Probable reason for setting up of such a facility could be the availability of highly skilled management in running such set ups or over-spending observed in minor and field repair activities. Glaring advantages of in-house repair through workshops are highlighted by resp-1.

[R-1] *...are: (1) annual spending on repairs has reduced by 40% approx., (2) the first hand information by drivers has the backing of an expert technician's opinion which helps management to take repair decision without time loss, (3) accident recovery and damage payments have reduced considerably due to early response and professional handling of the case by the technicians, and (4) down time of a vehicle has reduced 50% approx.*

Whatever the reason were but in-house MRO in case of resp-1 seems to have a total

solution depending upon cost benefit analysis (CBA) that is an ongoing process for ensuring check and balance.

[R-1] *A CBA was carried out and resultantly these workshops were raised to enhance operational efficiency. A constant analysis of pre and post creation is a routine practice.*

However, resp-1 has not gone for a total in-house solution for MRO as few activities considered more complex are still outsourced.

[R-1] *...repair of fuel injection pump is completely outsourced activity.*

**Resp-2**, invariably, puts the responsibility of maintaining the load carriers on the owners and if a vehicle is out of order for 1-3 days (owing to legal complications), it will be allowed to be repaired by the owner while being loaded. However, in case of a longer breakdown, it is a compulsion to shift the load to another load carrier.

[R-2] *'...in case of a longer breakdown, it is a compulsion to shift the load to another load carrier but legally this is not possible. Thus a make shift arrangement is made to absorb such occurrences and Customs official do help in extreme cases. Primarily, this is the responsibility of the agent or adda operator to get the load carrier repaired and / or replace it if duration is prolonged. A breakdown of 2-3 days is carried out without shifting of loads.*

#### **4.4 Policy Recommendations for the Government**

There are two policy recommendations made for the Government:-

##### **4.4.1 Transport Regulatory Authority**

Government has left this so important and vital service without any regulatory. All over the EU and US have strong regulators to manage and arrange a directional development in this field. Development, so far, is totally directionless and wild in nature, yet in the absence of any regulatory, development has been commendable and follows an ongoing trend of the market.

[R-5] *A strong Regulatory immediately be established to work as Pakistan transportation regulatory authority (PTRA) to fill this existing vacuum.*

##### **4.4.2 Revival of Railways**

Past 10-15 years have experienced positive growth and development in the road transportation and road networks but there has been devastation of Railways, especially in last few years.

[R-5] *Rail is the cheapest mean after sea but it is deteriorating rapidly, which is a national loss to Pakistan. Government must focus on this precious asset to not only sustain, maintain and retain but to develop and enhance too the higher levels.*

## **5. Conclusions and Recommendations**

### **5.1 Conclusions**

Major conclusions of the study are:-

#### **5.1.1 MRO**

MRO has always been a serious cost factor and revenue reducing element for any 3PLSP. A unique finding has been, invariably, the endeavor of 3PLSPs in Pakistan, both; Domestic and MNCs, to resort to in-house MRO approach. Though it seems to be not in line with international practices yet in-house MRO is gaining strength in 3PLSPs working

in Pakistan due to three possible reasons: (1) the non-availability or total absence of MNCs in MRO industry in Pakistan, (2) the non-availability or absence of domestic nationwide MRO firm, and (3) economies of scale and scope both are not found in any MRO firm in the business, thus cost is naturally increased for MRO, if resorted to, for outsourced model. Future business avenue in Pakistan is, 3<sup>rd</sup> party MRO facility provider for huge fleets of 3PLSPs, DHA (defense housing authority) Karachi, Lahore and Islamabad, Bahriatown Islamabad, Lahore and Karachi, PSOs, government departments, autonomous bodies like; PCSIR (Pakistan Council of Scientific and Industrial Research), education and higher education institutions, corporations like; PIAC (Pakistan international airline corporation), CAA (civil aviation authority), Pakistan railways, Pakistan steel mills, Faujigroup, etc.

### 5.1.2 Fee Charging Strategies

Fee charging strategies are the revenue collection strategies and thus are pivotal to 3PLSPs. Usually fee charging is KMs running based but there are other bases, like; per trip (usually dry cargo) or one-way journey, per turn round trip (crude transportation and ATT), per hours (Resp-1's project) usually an eight hourly charging plus additional hours. At Resp-4, average variable cost per KM ranges between rupees thirty three (33) to thirty five (35) for typically 40 tons' load carrier, with the costing formula; *Fixed Cost + Variable Cost = Total Cost*. At Resp-3, costing is based on per ton-per KM inclusive of fuel. At Resp-2, the formula is entirely different; *Transportation Charges*(as per market rate) + *Turnkey Solution Charges*, with floating rates, directly dependent on the market rates (opening of rates, in the market, on daily basis is the reason for this costing formula). At Resp-1's project, costing formula is 'fixed costing' due to reason that costing is less fuel but in case of other projects of dry and liquid cargo, fee charging is similar to other industrial standards. There is a 'fixed fee charging' strategy in the industry, known as 'vehicle allocation fee / charges; where a vehicle is allocated to a customer, for the duration of contract, irrespective of running or usage wherein 'variable cost' covers all running, charged on per KM basis, both; Resp-4 and Resp-1 are following it.

### 5.1.3 Fueling Strategy

Fueling strategy is yet another important consideration for 3PLSPs and has been managed differently by different SPs. It varies from own fueling (through freight-trans stations, spread all over the country, as in case of Resp-3) to contracted fueling (as in case of Resp-4, having contracted with Shell, Chevron and PSO Ltd filling stations with monthly payment terms), drivers' own (as followed by Resp-2; driver of the load carrier himself gets the fuel en-route on the way to Afghanistan and back) and 'user fueling' (just like rent-a-car model, where project, being a user of Resp-1's services, fuels Resp-1's fleet, as per own requirements).

## 5.2 Recommendations

There are a few recommendations for the government / policy makers, specific to SPs and specific to 3PLSP Industry both long and short term:

### 5.2.1 Policy Recommendations for the Government are;

- a. Firstly establishment of Pakistan Transport Regulatory Authority (PTRA), as so important and vital service has so far been left out without any regulatory. All over the EU and US have strong regulators to manage and arrange a

directional development in the field of transportation. Development, so far, is totally directionless and wild in nature, yet in the absence of any regulatory, development has been commendable and follows an ongoing trend of the market.

- b. Secondly, the revival of Railways, as past 10-15 years have experienced positive growth and development in the road transportation and road networks but there has been devastation of railways, especially in last five (5) years. Rail is the cheapest mean after sea but it is deteriorating rapidly, which is a national loss to Pakistan. Government must focus on this precious asset to not only sustain, maintain and retain but to develop and enhance too the higher levels. Beside, new projects of bullet train and alternative fuel consuming trains systems may be developed.

### 5.2.2 Organization Related Recommendations

- a. **Resp-1.** Resp-1 has to look into the avenues to absorb its fleet, employed at Project and declared redundant after use of five (5) years life to reduce losses occurred due to non-recovery of cost of induction.
- b. **Resp-2.** Resp-2 has made best use of regulatory requirements to its benefit but in 3<sup>rd</sup> world economies regulatory requirements are an ever changing phenomenon and merits due attention by Resp-2 to guard against any policy shift in ATT regulations, by devising varied contingencies for all probable and likely changes, occurred in the event of policy shift to avoid being surprised.
- c. **Resp-3**
  - (1) Outdated business model needs radical changes, thus pushing Resp-3's FS to resort to *BPR* to remove all un-necessary fats from its operations and develop muscles to compete with domestic as well as MNCs working in Pakistan in 3PLSPs industry. MRO at Resp-3's FS is very costly and has to be reduced to minimum for increased profitability. Options for Outsourced MRO, is required to be studied in detail to suggest better and workable solutions.
  - (2) Over staffing, a serious problem at FS and a huge burden on revenue generation and net profitability, even after right sizing from 3000-2200 employees, needs more right sizing to fit into the needs but it should be done through *BPR*.
  - (3) Over Centralization creates the feeling of lack of ownership at execution level and be avoided through de-centralization at Fleet Headquarters' level and let both of them function as an SBU.
  - (4) Non utilization of NHA Regime to its optimum allowable limits is another cause of increased losses due to reduced revenue and increased expenditures, thus a board be constituted to get into the details and recommend remedial measures to accrue maximum benefit out of regulatory.

- (5) Fee charging strategies are not in line with commercial practices and needs to be re-visited and deliberated upon for more commercial orientation and economic viability.
  - (6) ERP Solution; OTM (Oracle Transport Management) module is in use in FS since 2005, but other related modules should also be implemented for better resource allocation and desired yield.
  - (7) Upcoming efforts includes re-entry in ATT through a small fleet of owned carriers in on the way but it should be reviewed for getting it done through outsourced fleet as followed by Resp-2 and Resp-4. This will avoid many ills, hidden beneath if owned fleet is inducted in Afghanistan.
- d. **Resp-4**
- (1) De-induction of 1<sup>st</sup> fleet in Pakistan by Resp-4 is likely to be due in very near future. This will answer many queries ahead. Re-furbishing of old vehicles, as done by domestic SPs is more pragmatic and cost reducing. At present fleet condition is well due to more spending on preventive maintenance, which paves the way for reduced ‘operating cost’.
  - (2) In-house MRO is resorted to by Resp-4 for 24/7 services but it should constantly and regularly be reviewed for outsourcing to another MNC or domestic 3P MRO-SP to avoid replicating the model of Resp-3’s FS.

### 5.3 Future Research

Being a relatively least researched area, there are a few recommended research avenues: (1) ‘MRO’ is a new domain that merits exploratory studies in specific areas like SMA (supply market analysis) for 3<sup>rd</sup> Party MRO service provider (3P MRO SPs) in Pakistan with a focus on organizations, (2) ‘fee charging strategies’ can be viewed differently, like; vehicle allocation Costing strategies as component of fixed cost, and (3) ‘ATT’ itself is least researched and merits detailed work from economic, business and regulatory perspectives, etc.

### 5.4 Conclusion

3PLSPs in Pakistan have established themselves in-line with MNCs, working in Pakistan. A considerable maturity is visible in the domestic 3PLSPs’ approach towards the business due to arrival of MNCs in it, like; Resp-4. MNCs have also benefited from the experiences and expertise of domestic SPs, like outsourced fleet utilization for ATT and in-house MRO, etc. In-house MRO has invariably found to be a unique feature of 3PLSPs in Pakistan (may it be an MNC or a domestic SP from public or private sector), in contrast with the developed world, where MRO is outsourced to specialist MRO firms. Future studies, in the identified areas, will help researchers and practitioners to further crystallize existing knowledge and develop the understanding about less researched and explored areas of knowledge on 3PLSPs in the world, in general and 3PLSPs in Pakistan, in particular.

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