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Challenges of Project Logistics in Turkey

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Abstract:

Containerization in logistics enables the products to be transported quickly within the standard conditions; however, heavy cargoes with non-standard size are still a big problem in shipment processes. This problem examines within the scope of project logistics. Project logistics are defined as the realization of the transportation of non-standard bulky and heavy materials, which cannot be transported by the standard container, in specific time period and without any damage. According to objectives of 2023, Turkey Government has committed to improve logistics infrastructure, regulations and operations in parallel with global business supply chain. Project logistics are high value-added operations in logistic sector, due to one-time logistics operation with its unique tools and methods. Turkey's geographic advantages could be used to foster project logistics, but they are affected from external environmental factors and facing many problems as other countries. In this study, the challenges facing companies during their project logistics operations will be analyzed. In-depth interviews will be conducted with company's executives whom are operating on project logistics in Turkey. According to field study, the main problems of project logistics operations are subtitled as physical infrastructure, legal regulations, education and economic problems. Also, in order for the sector to work effectively, main four problems must be eliminated and state-private sector coordination must be ensured.

Key Words:

Project Logistics, Non-standardized loads and project cargo.

1. Introduction

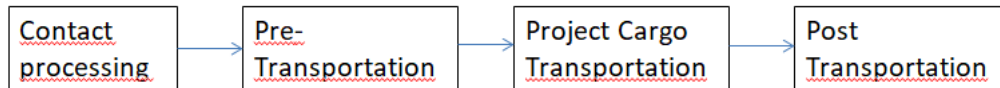
During our life, we can see many of logistics systems surrounded us like in supermarkets, stores, facilities, courier companies etc. Logistics is the process which includes effective forward and reverses flow of material from the source of raw materials to the point of end consumer along the supply chain (Lambert & Stock, 1993; Sunil & Chopra, 2013). An effective management contributes to improve many processes in order to gain competitive advantage for all over the value chain members (Kherbach & Mocan, 2016). The term of logistics continues to be enlarging its scope due to the expansion of the material flow in all over the world. Today, world is becoming a global village, thus companies have worldwide operations, facilities are relocated, larger loads and heavy industrial parts need to be transported across the countries. These complex operations need to create strategies to flow of bulky materials which cannot be in containerization. Project logistics are focusing the non-containerized special operations with its more extensive and challenging structures. In this study, problems of project logistics in Turkey will be analyzed. There are fifteen in-depth interviews and suggestions will be presented regarding to these findings.

2. Literature Survey

Project logistics is an emerging era in logistics operations, that require solutions to big project as heavy lift equipment, plant, machinery etc. These projects are mainly on energy, infrastructure, power generation to water treatment, construction, oil, mining, communication sectors and etc. Sometimes it is referred as project cargo or heavy lift, and the term used to *broadly describe planning and managing of all shipments' functions of large, heavy, high value or a critical (to the project they are intended for) pieces of equipment* (<http://www.wikipedia.org>). Project logistics requires a comprehensive plan and expertise according to the product to be transported or transportation mode (Pisz& Łapuńska, 2016). Project logistics, in connection with specific shipments, all customers request to find special solutions for their cargoes. Each shipment is unique because of features of goods, size, quantity and routes are different from each other. Cargoes operated by special equipments in both maritime and railway, trailers as lowbed for land transportation hence cargoes weight, volume, dimensions and property (Tseng et al., 2005) So, ports, capacity of terminal, tunnels, highways, bridge, crossroads, width of overpasses, lifting capacity, traffic density are points to take into consideration (Erdal et al., 2008). Logistics companies must have cared all details about cargo as mounted and dismounted process and contact both customer and expert if needed. Because

of special solution requirements, experienced staff, teamwork skills, innovation and technical know-how are very critical to manage operations effectively in project cargo management.

The project logistics provide different types of services as following: Transportation, scenario management, legislation support, warehouse and transfer solutions, order monitoring, lashing, packaging services, post-delivery, Insurance (commodity, crane etc.), cost forecasting, route planning, placement of burdens at determined site, risk management, end-to-end logistical visibility, engineering support and etc. (Caron et al.,1998; Erdal et al.,2008).



Source: Blecker, T., Kersten, W., & Gertz, C. (Eds.). (2008). *Management in Logistics Networks and Nodes: Concepts, Technology and Applications* (Vol. 8). Erich Schmidt Verlag GmbH & Co KG.

Figure 1 illustrates the standard processes of project cargo operations. There are four stages in the project cargo management (Blecker et al, 2008).

- **Contact processing:** Both customer and logistics firm's inquiry the requirements and working on agreements for the shipments.
- **Pre-transportation:** This stage encompasses the planning and simulating process of shipment such as route survey, feasibility and risk analysis of the shipment. It also includes time schedule of the transportation for the purpose of conforming to shipment requirements. From start-point to discharge stage, all activities must be managed with focus on customer needs and wants. On the other hand, firms have to take into consideration legal frame of countries on route of cargoes.
- **Transportation:** This stage is a very key element and it includes the flow of the materials. This process has to meet customer time and secure expectations. For the smooth operations, logistics provider has to care all specific necessities. Although carrier have noticed all the standards and legal frames, nature of logistics has many uncertainties in transportation. Therefore, carriers have to form a strong information flow between the networks during transportation of cargoes.
- **Post-Transportation:** It includes operations to confirm of realized shipments. The logistics company must fulfill expectations of customer on the right time, place and quantity.

3. Methodology

Logistics operations are very important for emerging economy countries to increase of their trade volume. Moreover, logistics investments have an important share in Turkey's 2023 objectives. In this context, increasing intermodal transport shares are the main objectives in terms of building a fast, flexible and reliable transportation infrastructure, facilitating trade and increasing the competitiveness of the country.

Project logistics, the potential to create high added value with its expertise and special transportation infrastructure required, is accepted as a special field among logistics operations. Although Turkey has a strong geographical location advantage and socio-economic characteristics, the study aims to analyze the reasons why Turkey' logistic sector has not enough power in project logistics operations and how to provide solutions to project logistics' problems. In Turkey, many companies working on logistics sector, however there are a few professionals specializes working in the field of project logistics.

This study investigates companies' views, operations and opinions about the physical and legal infrastructure on project logistics field in Turkey. It was decided to conduct an in – deep interview technique that is one of the qualitative data collection methods, in order to analyze the problems encountered and their causes. The participants are the executives of logistics firms which provide project logistics services for their customers. These executives are the main users of infrastructure of the project logistics on behalf of their company. So, their ideas and point of views can be the key factors to fix the problems of project logistics in Turkey. Therefore, it provides a general overview of challenges in project logistics operations from the logistics company executives' view.

We conduct 15 in depth interviews with executives from different mode of transportation in project management. Five of the executives work in highway, seven in seaway and three in air logistics operations in project logistics. The views of executives collected by using semi-structured form. The executives' experience in project logistics is at least 8 years, and companies have been operating for about 60 years.

The results analyzed under the three sub-stages. At first, we summarized the concept of project logistics from the executives' perspective. At the second stage, all the problems categorized into specific topics and examined in detail such as physical infrastructure, legal regulations, education and economic problems. At last, we made an interpretation based on an overall approach. The obtained data were evaluated in the following sections.

4. Results of in – Depth Interviews

Project logistics is not a new but emerging concept in Turkey. Although the term project logistics is rarely used in literature, the concept used differently by practitioners. The common uses of the term are bulky, heavy loads and project cargo by practitioners in Turkey. So, Within the scope of the research, executives have defined the project logistics concept at first.

There are two basic definitions come to the fore. These are;

- (i) “large load the type of loading which includes multiple modes in real terms, where tonnage and dimensions are above the standards and the freight level is high” and
- (ii) “load that doesn't fit in the container”.

In these contexts, project logistics can be defined as cargos which is high tonnage and cannot be containerized. The executives conscious that the build of projects transportation in Turkey has been highlighted done without the expertise and supervision generally. Executives emphasized that Turkey has significant potential by the geographical location but very small part of them have been used. Executives emphasized that, experienced foreign project logistics companies purchased some Turkish logistics companies in 2018. This can be accepting as evidence that foreigners have notices our potential and are turning to purchases to use it. Also, the executives stated that the most important risk is the problems encountered for project logistics cannot be solved in the short term. So, this will be an important waste of time for turkey.

4.1. Legal Infrastructure

Legal infrastructure means regulations which are made by government to settle the general framework and legal obligation. Participants have enunciated that there is a lack of legal regulation. For example, there is not a legislative harmonization with other nations. It is an important problem for the firms who provide international logistics services. For project logistics, firms have to take legal permission from a large number of government institutions. However, the existing legislation is being interpreted in different ways by civil servants in different government institutions ultimately firms can be encountered problems in transportation.

“While the legislation could not be solution for our problems, by the comments of the related units could be created another legislation in front of the legislation.” (Anonymous 4).

“..... in some overseas hub port storages, fee does not start immediately, but the moment you enter the port in Turkey, you have start paying storage fees” (TPT).

"We have a very suitable position for the transfers to the Caspian Sea but due to the legislations both the process is prolonging, and the costs are increasing" (AS).

"... Firms negotiate cost and money instead of security requirements that should been discussed" (Anonymous 1).

"In Turkey, there is almost an authorized in everywhere; everyone does every job. Project logistics is much more complex than traditional logistics activities. Because of that it should not be done without additional documents" (DZ).

"Ports' technical capacity in Turkey is very low. A firm is building up a factory for \$ 50 million; but we don't have the equipment to land the five-meter chimney of factory to the port" (Anonymous 3).

"The company sells its product for \$ 300,000, but because of the costs, Turkish firms want to \$ 50,000 for landing at the port. Naturally, Indian and Chinese companies get the projects because of the cost advantage" (Anonymous 3).

"The speed of implementation of the procedures is very slow and the government institutions have much more red tape..." (Anonymous 4).

"Anyone, who has a desk and a computer, is trying to do this, legislative regulations are needed in this process" (NDD).

4.2 Physical Infrastructure

In Turkey, regardless of transport mode is observed to be important deficiencies in the physical sense. In addition to the situation of tunnels and bridges, especially inadequate handling equipment in the sea and airports, are the main obstacles to meeting the needs.

When road transportation executives compared the conditions of project logistics operations between Europe and Turkey;

- Institutions do not announce carried out roadworks in route,
- Operation conditions in Turkey are bureaucratic, costly and not flexible,
- Unnecessary and exaggerated shipping prohibitions,
- Lack of scale standards on the roads and
- Tonnage limitations for vessels are emphasized as an important problem.

Firstly, announced road constructions and the actual works encountered during transportation may not be same.

"The announced works by the government and the actual works encountered during transportation are different from each other"(NAN).

"You are examining the bridges on the route for transport. A bridge height has been said to be 5 meters, but over the time asphalt work has been done, the bridge height has been reduced height to 4.5 meters. You get on the road and you don't know this, when you get to the bridge, all your planning is turned upside down." (MAN).

"... we use a program called road survey. The bridge that didn't exist a year ago, can exist today. The roads are very narrow, vehicles do not maneuver! When we say let's bypass the operation, costs of "the capital and the time" increases." (TYA ; TPT).

"..... there is some encouraging support for project transport by rail in abroad, but you can transport by rail is very limited because of infrastructures in Turkey " (TPT).

In recent years, although the increasing number of maritime ports has provided flexibility in the meaning of the operational, the high operational costs at the ports, create significant disadvantages in terms of global competition.

"While the Belgian, American, Singaporean company directly loads the cargo from the factory garden to the 12,000-ton vessel, we spend dozens of days, money, and overtime to land at the port to be exported" (Anonymous 3).

Air transporter firms' executives have emphasized that the lack of adequate infrastructure and equipment at the airport for charter airplane are the most important deficiency. Therefore, transportation to all airports cannot be realized and problems can be encountered in the handling processes.

"There is not a main deck high loader in the Antalya airport, we cannot load cargo into BOEING 747 400S" (MA).

It is seen that participants emphasized the problems of increasing costs about the technical infrastructure. It is also noteworthy that the difficulties encountered in project transportation create significant customer losses.

4.3. Labor Abilities

In recent years, with the increasing importance of logistics operations, the number of faculties and departments providing training in this field are increasing. Executives frequently emphasized that the persons who graduated from the logistics departments did not have enough equipment due to the lack of practical training and limited internship opportunities. Nevertheless, the executives have indicated that there is inadequacy of trainings and content related to topics such as project logistics, which is one of the special areas.

"Yes, there are those who want to work in logistics or even in project logistics, but it is a major problem that most of them do not even have internship experience" (TPT).

"Project logistics is often not even examined in the lessons at the universities. So, staffs learn, the elongation / lifting capacity of the crane, technical drawing reading, tonnage per axle calculation, loading optimization, in the port during working process" (AS).

"... You are trying to do a very important job, but you cannot be able to go beyond the knowledge of the public institutions. There are employees who do not understand when you tell them" (Anonymous 2).

"... Turkish experts who have gained experience in projects abroad have significant potential. An engineer in abroad, most specialize in only one area, but in Turkey an engineer can operate in all areas and is able to gain experience. He's doing what 4 people do" (DS).

"It is important to select employees for the public sector with the logic of "the right personnel for the right job". Only in this way can public processes are more easily managed"(NDD).

Companies working on project logistics deal great importance to experience of staff. It is possible to say that the companies prefer to be experienced employees instead of new graduates and they train employees in the process. Findings suggested that the number of employees in the project transportation departments vary according to the load density, project transportation is considered as an additional field of expertise for the companies. Particularly due to the low level of knowledge and ability of the personnel working in public institutions, business processes are slowing down and solutions to problems are prolonged. Therefore, most of the time, firms prefer the alternative route that has not goes from Turkey's ports. This is considered as a more expensive but shorter process.

4.4. Economic Conditions

The participants state that the economic problems emerged in the post-crisis period and experienced in certain sectors. They emphasized that in parallel to these problems have also led to problems in terms of project logistics.

"The decline in the oil price has reduced investments in the Middle East and the Turkic Republics, thus our project shipments are reduced" (Anonymous 3).

".. Instability in exchange rates is pushing our pricing policies. You cannot always reflect very sudden foreign exchange movements to costs or your customers considered that you are inconsistent" (Anonymous 5).

"... Primarily for the development of the projects transport, in Turkey we should produce projects. Economic development is essential for this, but now, doing this seems very difficult" (DZ).

"The government subsidies or tax exemptions for the purchase of machinery and equipment can economically facilitate the work of firms" (Anonymous 4)

Economic conditions should be evaluated on a quarterly basis by firms. It can be said that the expectation has gained weight in terms of stable economic conditions and investment programs.

5. Conclusions and Suggestions

The increase in investments worldwide due to economic developments has increased the share of project logistics in total logistics activity. Turkey has the geographical advantage based upon its location and important transfer point position in the world. Besides its geographical location advantage, Turkey' logistic infrastructure investments have accelerated recently. In this context, it is expected that increasing share of Turkey' project logistics operations in all over the world. The aim of the research is to analyse the problems encountered in project logistics in Turkey and to produce solutions in order to use the expanding potential of Turkey. It was seen that the problems encountered within the scope of the research are grouped under 4 main topics- Legal, infrastructure, and human resources and economic. It is possible to say that the most important problems arise under the headings of legal and physical infrastructure. Despite the experience of the companies working in Turkey in the field of project logistics, the process is so slow at bureaucratic and legal stages. The audits are not enough, and the security level is low. Lack of a valid certificate for working in this field causes each company to carry out project's logistics regardless of experience. The slowness of bureaucratic processes also increases costs significantly, too.

Lack of technical equipment at both airports and ports results in slower operations and increased operations costs. Limited source of construction activities on roads and bridges and also lack of communication between companies and related government' institutions lead to transportation problems especially delay of the cargos, new route arrangements. Another

problem is the limited experienced workers on project logistics in both public and private sector part. Economic problems are noticed as a temporarily problems by the executives. These problems mainly affected competition situations of the companies.

As a result, it is critical to initiate efforts to improve bureaucratic processes. Although the digitalization of the bureaucratic procedures starts, it must be spread to all institutions and operational. Another important point is that project logistics may be a sub-subject of logistics, but it has different procedures from the general logistics operations. This is so critical to achieve the aim of improvements for project logistics. Also, activation of certification and audit processes will be increasing the quality and standard of project logistics operations

To fulfillment of physical infrastructure and eliminating the lack of technical equipment, government and private sector should be work coordinated. In the win-win principle, the development of the sector will contribute to both parties. In this context, infrastructure requirements need to be identified immediately and fulfillment of the needs as soon as possible. Also, the revision of the infrastructure of roads announced to the all companies on time and the communication will be continuous. In addition, increasing of supporting programs may be the solution to the lack of technical equipment needed in project logistics operations.

Education curricula should be reviewed, and basic subjects should be added to the curricula not only for project logistics but also for other related fields. In addition, it is very important providing on-the job internship opportunities to the related departments of vocational high schools and universities. Finally, increasing the number of applied courses and to ensure the participation of professionals with sector experience in the education processes should be.

Project logistics has a significant added value potential for the national economy as a special business area. In this context, in order for the sector to work effectively, deficiencies must be eliminated, and state-private sector coordination must be ensured. Thus, these drivers would be contributing to the development of trade potential for Turkey. At this point, it is important that the policies to be developed are not limited to some sub-branches of logistics and include other areas of the logistics sector in order to achieve the 2023 targets.

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