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Online Transportation of Goods

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ABSTRACT

The movement of people, animals and goods from one place to another is generally defined as Transportation. Transportation systems form integral building blocks for a modern society. Transporting goods from one location to another is difficult as it takes lot of time & effort. The operation of transportation determines the efficiency of moving products. The progress in management such as delivering goods in time with speed, maintaining service quality, computing the operation costs, managing the usage facilities, improvement in moving load and saving energy are all the crucial aspect of transportation. Transportation takes a crucial part in the manipulation of logistic. Looking at the current condition, there is a need of strong system that has a clear picture of logistics and techniques to link the producing procedures. The objective of the paper is to define the role of transportation in logistics for the reference of further improvement. The research is focused on handling and understanding the different aspects of logistics in various terms and applications and to comprehend the link between transportation and logistics.

Keywords: Transportation, Logistics, Connecting Businesses, Online Strategy, Energy Saving, Time Consuming.

I. INTRODUCTION

This Transportation is the movement of people, animals and goods from one location to another. Systems form integral building blocks for a modern society. Transporting goods from one place to another is difficult as it takes lot of time & efforts. Normally, transportation facility is used in booking carriers, calling & visiting to the service provider is also, done. It is time consuming & inconvenient.

Normally, for delivering goods, booking cabs, meeting and calling the service provider is a very time consuming task which needs lots of efforts. This "Online Logistics Transportation" will overcome all the problems and make the process of booking carrier easy. Thus the application will ensure efficient and safe movement of goods.

The major objective is to develop a web application for "Goods Transport" which will make the process of transformation efficient. This can be achieved by providing facilities like calling, acknowledgment, etc. which will fetch the users. The web application is to be made user friendly so that booking of carriers will be easy.

Nowadays, it is too much difficult to find modes of goods transportation from one city to another and also takes too much time to find these types of system nearby.

As the world is going mobile and there is no such existing application, we intend to build a web application for "Good Transportation" will make this

process just one click away and will be beneficial for both the user and driver.

An online database which can provide platform that enables users to add a scalable and powerful backend to launch a full-featured web app. With the help of these, Client will be able to store his information necessary for transportation.

Location tracking is done with help Google Maps. When User logins/registers to Users App, his current location will be tracked and that location will be treated as source location. All nearby Drivers will be visible to the Users in specified range. After selecting appropriate Driver, User will enter all his details. After receiving details from User, Driver will send acknowledgment regarding the conformation or rejection of booking.

II. LITERATURE SURVEY

The Logistics play a key role in the distribution of goods from raw material suppliers to original equipment manufacturers to end-consumers. Logistics outsourcing is defined as systematic use of foreign parties to perform activities, that is handled by internal staff and resources which can be an effective way to achieve a competitive advantage, improve customer services, and reduce logistics costs [6]. Firms that choose to outsource their logistics activities can decrease their fixed costs and increase their flexibility. For manufacturing or outsourcing logistics, contracts are widely implemented across different phases of the supply chain. A very huge amount of research is analysed to focus on the contract as a primary source of interrelation between supply chain management members [7].

In 1985, Vukadinović, S. proposed that There are two types of problems regarding the transportation time [4]: (i) minimization of the total transportation time (linear function, as aggregate the products of transportation time and quantity), called minimization of 1st transportation time, and (ii) minimization of the transportation time of the longest active transporting route (nonlinear function), called minimization of 2nd transportation time or problem of Barasov [2]. A chief variant of the total transportation time difficulty is formulated and resolved in [5]

This paper, [1] shows the total transportation time problem regarding the time of the active transportation routes. If the multiple solutions are present, it is possible to include other criteria such as second level of criteria and calculate the solutions. If there are various other solution, again, the lexicographic order can optimize the third goal. The methods of generation of the optimal solution in selected cases are developed. The numerical example is included.

In this paper, [8] Emel Aktas, Fusun Ulengin has proposed a penalty and reward contract between a manufacturer and its logistics service provider that distributes the manufacturer's products on its retail network. The analysis methodology used in the above proposed contract is actually the first-hand tested methodology with transportation data of a consumer durable goods company (CDG) and their logistics service provider (LSP). The results of this case study suggest a penalty and reward contract between the CDG and their LSP that helps in gaining the supply chain costs as well as its individual firm's objective functions.

Lashkari A.H.et. al. [9] describes a system which is used to locate friends and family by using GPS and Standard web technology. The above system is implemented by using JavaScript & J2ME, the repository i.e. the database and the web client is implemented using PHP and MySQL. Siriteanu A.et. al. [10] presents the creation of Social Network in which the users are being alerted when their friends are around. Available existing Android location services like GPS technology, and built-in wireless and mobile towers are used to find an approximate location of a trackable mobile phone running the

above program and then sharing the location information through the social media or via SMS.

Kumar N. [11] describes a system using which you can locate the mobile device using another mobile device by even sitting at your home. The above system is monitored and only requires the inbuilt GPRS and GPS in the mobile device itself whose location is going to be tracked. "Where are you? – A Location Awareness System" is a project that helps people to locate a lost friend or a known person without revealing the information only to that particular person.

In this paper, [12] Mahesh Kadibagil and Dr. H S Guruprasad both proposed the Autonomous system of tracking and position detection system which amplifies the accuracy of locating places, restaurants, family members and friend's positions by using GPS and GPRS system used in web technology. For this type of mechanism to work under any circumstances we require a map that could help show us the location, a mobile which is a must, a database which can store any kind of information related to it and a web service or a web client. The mobile client is used to track the position and report a Popup SMS to the verified user when his/her family members or friends if they come
near the user's location. This location information can be sent to the server and the same information can be managed and viewed using the web client by other users.

III. OVERVIEW OF LOGISTICS

The online logistics is the place where one can change the way of doing communication by moving goods from one place to another. It allows to do the intra-city / intercity transportation of goods. Keeping technology at the core, connecting businesses with mini truck / truck owners through web application and calls.
One can book Piaggio Ape, Tata Ace, Dost, and Tata 407 to Tata 1209 for scheduled, day basis and point to point deliveries across any point of the city.

A. Definitions of Logistics

- ✓ The proceeding of plans, how to move forward furthermore with above plan, the execution of the designed plan as well as the backward flow of the same plan and goods storage, services provided, information related to the point of origin and execution of the plan in order to fulfil requests the customers made and relate to it, can only be done with the help of supply chain management plans.
- ✓ Describing the whole from origin to the deployment of the process, the materials and products moving into, and out of firm are required to bring about the change. The material received by the suppliers is kept in the monitoring unit of the inbound logistics. Materials management describes the movement of materials and components within a firm. Physical distribution is the term which refers to the transportation of goods from the end of the assembly line to the consumers. All in all, we can say that the logistics is smaller than supply-chain management, and that it helps in linking user's directly to the communicating network and it also has a tough engineering staff to employ such process.
- ✓ The Process of moving and managing the goods and materials, from the beginning to the end of the production, sale process and waste disposal, to satisfy customer needs efficiently and successfully.
- ✓ This Process needs good management services such as acquiring the capital, meeting the needs and requirements of customer's, looking into the material, people or technology used in transporting such commodities and also, keeping track of the real time information needs to be fulfilled by the service provider; optimizing the goods- or service producing network to responding the demands of the requests made by the customers; and analyzing the network in timely way to fulfil customer requests.
- ✓ Customer oriented operation management.

B. History and Advancement of Logistics

The beginning of the term logistic is defined by the term Greek logistics, meaning 'skilled in calculating'. It was initially designed in the context of military activities in the late 18th and early 19th centuries and it launched from the military logistics.

It was initially a military activity related with getting the soldiers to the battlefront at the time of their war. Military typically incorporate the supply, movement and quartering of troops in a set. The sign of goods circulation in industries were much needed at that time. America was going with the recession phase in 1950s, that proved to be the greatest ground of success for them.

Business logistics was not an academic subject until the 1960s. A important construct of logistics, the trade-off between transport and a complete list of items as property, goods in stock etc. costs, was formally identified in economics at least as early as the mid-1880s. Based on the American experience, the development of logistics could be divided into four periods, which are represented as Figure 1.

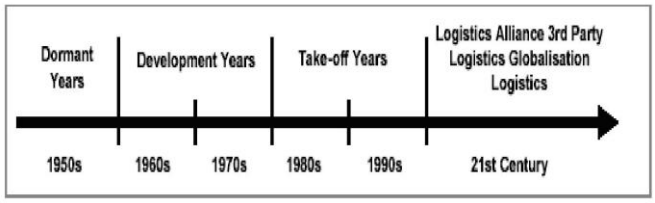

Figure 1. Logistics historical development

While considering 1950s, logistics was under the slumbering situation. Managers mainly always concerned about the production, and industry logistics was once regarded as "necessary evil" in this period. During the 1950s applying new ideas of administration on business was a tendency.

Due to petroleum price that tremendously rise in 1973, the effects of logistics activities on enterprises drastically increased. Slow growth of market, release of transportation control, and competitions of the third world on products and materials also grew rapidly by significance of logistics system on planning and business at that time.

The further tendency of logistics in the early 21st century is logistics association. This was then named as the Third Party Logistics (TPL). Logistics circulation is an essential of business activities and sustaining competitiveness, however, to conduct and handle a large company is very costly or cost consuming and also not economic. Therefore, league of international industries could mainly save the costs of working and cooperation with TPL could bring the specialization in logistics area.

C. Components of Logistics System

The closely linked components of the logistics system are:

- ✓ Logistics services
- ✓ Information systems
- ✓ Infrastructure/resources

1) Logistics services support the movement of materials and products from inputs through many steps to consumers. They consist pf in-house activities undertaken by the users of the services and the operations of external service providers. They comprise physical and non-physical activities (e.g. transport, storage and supply chain design, selection of contractors, freightage negotiations respectively). Most activities of logistics services are bi-directional.

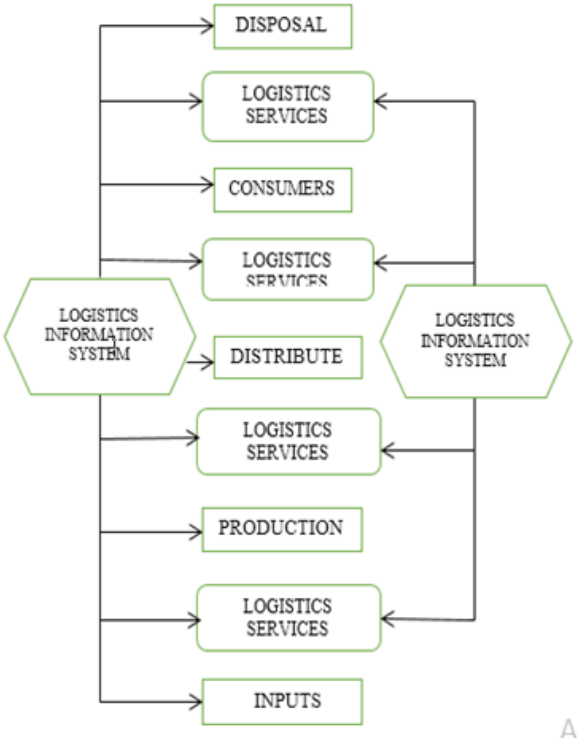

Figure 2. Overview of Logistics System

2) The modeling as well as the management related to the decision making process and the most important things such as tracing the logistics and keeping track of the things were all handled by the Information systems. It provides essential data and consultation in each step of the interaction among logistics services and the target stations.

3) The main components like human beings and resources which needs assistance financially, or materials packing, storage in warehouses, communication and transportation facilities are all handled by the Infrastructure. Most established capital is for constructing those most important infrastructures. They are concrete foundations and basements within logistics systems.

IV. INTER-RELATIONSHIP BETWEEN TRANSPORTATION AND LOGISTICS

The Relationship Between Transportation and Logistics is always considered a matter of concern. In this we have consider the relationship between transportation and logistics. Logistics could not bring its advantages into full play, without having a well-developed transportation system. An efficient transport system plays a major role in logistics activities that could always provide better logistics efficiency, reducing the operation cost, and promote service quality.

The improvement in transportation systems is very much needed and the effort from both public and private sectors are also, to be emphasized.

A. The Effects of Transportation on Logistics Activities

Transportation plays a very effective role among the various steps that result in the transformation of resources into useful goods in the name of the final consumer. It is the well-planned of all these functions and sub-functions into a system of goods movement in order to lower the cost by increasing the service to the customers that compose the concept of business logistics.

The important steps which are required by the companies are like storage facility, logistics transportation, as well as services related to warehousing or plants manufacturing, or establishments related to merchandising are basically connects its roots with transportation only. Production or manufacturing plants required the well-designed structure of materials, components, and supplies, with or without storage, also the processing and managing the material within the plant and plant inventory.

The manufacturers limit themselves to the production of goods, keeping the marketing and distribution to other firms. Storing can be done in a warehouse, where both of these term can be considered for distribution of product and production processing services. There have been major changes in the number and location of facilities with the closure of many single user

warehouses and an expansion of consolidation facilities and distribution centres.

B. The Role of Transportation in Service Quality

The role that transportation plays in logistics system is more complicated as compared to carrying goods for the proprietors. By an efficient and effective transport system in use, goods could be successfully delivered to the appropriate place at appropriate time in order to satisfy customers' demands.

A connection between the consumers of the product and producers of the product can be a firm basis to bring out more efficiency in the system. Therefore, transportation is the basement of effectiveness and economy in business logistics. Also the advantage of using a time saving transport system that is performing in logistics activities brings benefits to the various quality of services and to competitiveness of the companies.

V. PROCESS OF IMPLEMENTATION

Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation. Without developed transportation systems, logistics could not bring its potential into full play. An efficient transport system in logistics activities could provide better system, such as, there are some modules present in the online logistics transportation system.

A. Modules of Transportation

The closely linked modules of the Transportation system are:

1. USER
2. DRIVER
3. ADMIN

1.User:

- Requesting a ride while looking at the location (which is updated very frequently) on the map.
- Once clicked the 'Request Ride' button, request is stored on the online database.
- If you decide to cancel your request, option is provided accordingly, at any point of time, it will lead to removal of your request from database itself.
- Any drivers in the area can see the request.
- There are two types of user mentioned in the user module:
  a. Individual
  b. Business
- Individual user books the vehicle and the request is sent to the admin, only then admin selects the drivers from the list who are not allotted to any other businessman for their business purposes and act accordingly.
- Business User can have multiple drivers at a time for his transportation purpose on the regular basis, admin allots the driver from the list which is allocated to the particular businessman in that particular area.

2.Driver:

The available requests from other user's will be shown or viewed by the driver, which will all be shown in a list View, which is a vertical table with clickable entities in it.

3.Admin:

The request which is given by user is given to admin. From there, Admin checks the request in his database. And accordingly, the request is handled out.

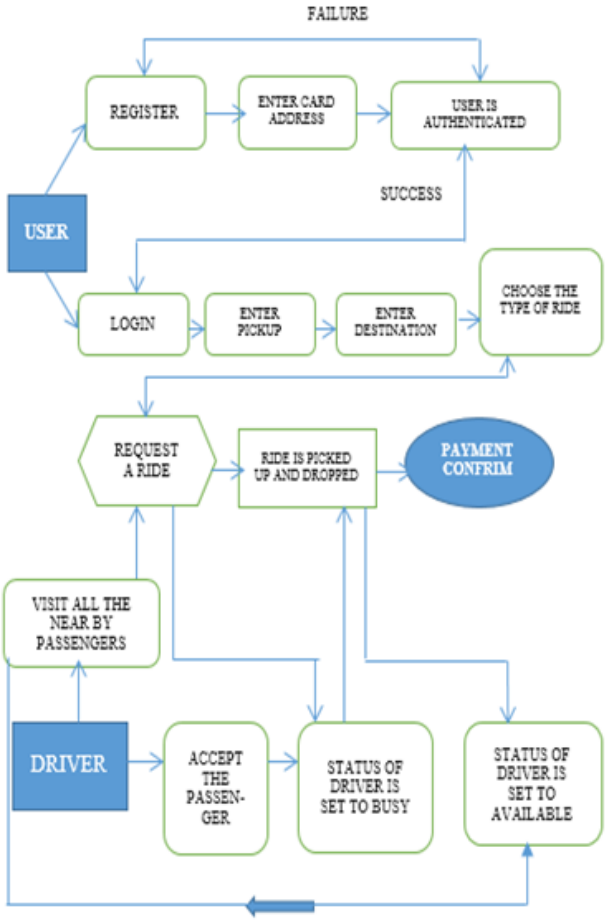

Figure 3. Transportation of Goods

The steps that are involved in transportation of goods:

- ✓ Login using their Facebook credentials - access to public profile and email.
- ✓ Signup for application with preference to show if the user is logging in as driver/rider.
- ✓ Rider can long press on map to choose the pickup address.
- ✓ Then click on pin to request App.
- ✓ Driver in his device can see the requested rides near him within the range of 10-km in a table format which will have details about the rider, details such as picture, email and name of the rider who is requesting for a ride.
- ✓ Driver can accept/reject ride.
- ✓ Once the driver accepts the ride, he can see another screen made available to him.
- ✓ The direction plot is shown from current location to address of the pick-up point described by the user or rider.
- ✓ Type destination address - search matching address and able to choose 1 address.
- ✓ Once driver "Starts" trip, he will be redirected to Google maps so that he can see the directions to the destination.
- ✓ Once the driver is at the end of trip, he can stop directions and click on "Back to Home" link to come back to the application.
- ✓ The driver can now end the trip. He will be redirected to the "Rides Requested" page.

VI. CONCLUSION

The proposed system uses GPS and Web Technology in order to increase the positioning experience. The position detection and tracking system effectively alerts the user about the position of a person using mobile phone. This location and position of person information can be viewed online.

As a future work, the proposed system can be used and implemented in order to update the trackable position and details of the rider's using to the social networking sites such as Twitter, Facebook etc.

VII. REFERENCES

[1]. Ilija NIKOLIc,"Total Time Minimizing Transportation Problem", Yugoslav Journal of Operations Research, 2007, Number 1, 125-133 DOI: 10.2298/YUJOR0701125N

[2]. Barasov, A.S., Linear Programming, Fizmatgiz, Moskva, 1961.(in Russian)

[3]. Cachon GP (2003) Supply chain coordination with contracts.In: de Kok AG, Graves SC (eds) Handbooks in OR and MS.Supply chain management: design, coordination and operation, vol 11.Elsevier, Amsterdam, pp 229-339

[4]. Vukadinovic, S., Transportation Problem in Linear Programming, Naučna knjiga, Belgrade, Yugoslavia, 1985.

[5]. Nikolic, I.,"Minimization of total transportation time", SYM-OP-IS '86, Hereg-Novi, Yugoslavia, October, 1986, 519-520.(in Serbian)

[6]. Alkhatib SF, Darlington R, Yang Z, Nguyen TT (2015) A novel technique for evaluating and selecting logistics service providers based on the logistics resource view.Expert Syst Appl.42:6976-6989

[7]. Jeschonowski DP, Schmitz J, Wallenburg CM, Weber J (2009) Management control systems in logistics and supply chain management: a literature review.Logist Res 1:113-127

[8]. Emel Aktas-Fusun Ulengin,"Penalty and reward contracts between a manufacturer and its logistics service provide",2016, DOI 10.1007/s12159-016-0136-9

[9]. Lash Kari A.H, Parhizkar B, Raman,"Widget Based Position System (WBPS) An innovative mobile Application", IEEE International Conference on Computer Engineering and Technology, Volume 2,16-18 April 2010, pp615-619, ISBN:978-1-4244-6347-3, DOI:10.1109/ICCET.2010.5485646

[10]. Siriteanu A, Iftene A,"Meet You-Social networking on Android", 11th RoEduNet International Conference, Sinaia, 17-19 Jan.2013, pp 1-6, ISBN: 978-1-4673-6114-9, DOI:10.1109/RoEduNet.2013.6511763.

[11]. Kumar N,"Where are you? A location awareness system", 4th International Conference on Advanced Computing, Chennai, 13-15 Dec.2012, pp 1-5, ISBN:978- 1-4673-5583-4, DOI:10.1109/ICoAC.2012.6416798.

[12]. Mahesh Kadibagil, Dr.H S Guruprasad"Position Detection and Tracking System", IRACST - International Journal of Computer Science and Information Technology & Security (IJCSITS), Vol.4, No.3, June 2014