SuperGeo®
GIS Software & Solution

Less-Than-Truckload Load MatchingE-Marketplace Platform

Scenario

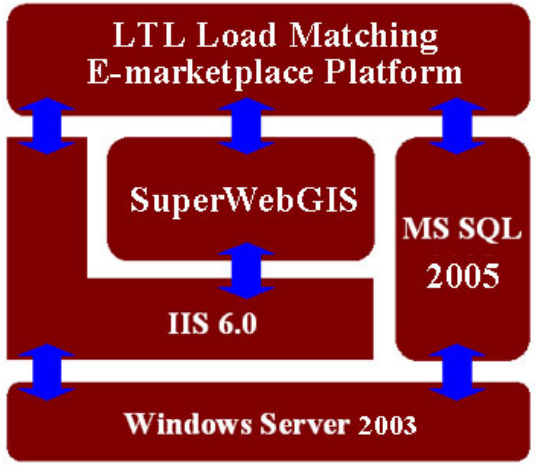
In recent years, the economic development in Taiwan has boosted the logistics industry. In order to decrease the enterprise cost, the logistics vendors devote much money and make lots of efforts to studying how to decrease the cost of the delivery and how to improve the procedure of dispatch and delivery. Generally speaking, the minimum unit of load is a truckload. As a result, the limitation might force the consumers who only need to send small quantities of goods to pay higher fee because the option for delivering small quantities of goods is lacked. For example, the students who need to send books and living goods home before summer vacation or after graduation have no choice to spend more money.

In order to solve the problem, the project is aimed to build up an e-marketplace platform for the consumers who need to send small quantities and the logistics vendors that provide the delivery services for small quantity to have the channel to communicate. The match mechanism of the system is able to match the conditions input by the logistics vendors and consumers and then to plan a route in which a delivery truck can collect and deliver multiple goods. Consequently, the load quantity and the efficiency of the vendors can be improved, and the capability to gain profit is raised as well. Meanwhile, the consumers who only send small quantities can be charged the reasonable price. Therefore, both of the consumers and the logistics vendors can be benefited.

Solutions

Less-Than-Truckload Load Matching E-Marketplace Platform is composed of database, WebGIS, and matching module. As to database, the platform adopts Microsoft SQL Server 2005 as the database. After the general users and logistics vendors fill in the data in the platform via the browser, the data related to the consumers and logistics vendors will be recorded to the database to be the matching conditions for distribution. When the distribution is matched, the system will plan the route for each truck by the operation of the matching module.

In WebGIS, SuperWebGIS software is utilized as the map server of the system. As the system plans the routes for the trucks to distribute and collect the goods, SuperWeb-GIS will publish the maps and the routes. Therefore, general users and the logistics vendors can easily get the distribution results through the browsers.



Solutions

- Less-Than-Truckload Load Matching E-Marketplace Platform is a platform based on WebGIS technologies and composed of databases, Web-GIS, and matching mode.

Results

Less-Than-Truckload Load Matching E-Marketplace Platform is a WebGIS-based platform, providing the consumers who send small quantities of goods to various areas and the less-than-truckload (LTL) logistics vendors with a more efficient e-marketplace platform to distribute goods and match the demand and supply of freighters.

The users of the Less-Than-Truckload Load Matching E-Marketplace Platform can be divided into two groups, the consumers and LTL vendors. The consumers and the LTL vendors need to respectively submit the related information and conditions on the platform. Firstly, the LTL vendors, like logistics vendors or the truckers, need to fill in the data about the trucks, including truckload, start address, start time, end address, end time, type, etc. Furthermore, the consumers need to fill in the data about the goods, such as weight, address to collect goods, collect time, delivery address, delivery time, good type, and so on. As the data are filled in, the system will store the data in the database.

Consumers and the logistics vendors can clearly view the delivery route through the browser.

Then, the system will match the consumers and the logistics vendors according to the features of the trucks and goods. During the process of matching, the system will match the consumers and the vendors by checking whether the consumer's delivery time and location is in the truck's delivery time and route and checking whether the weight of the goods is in the range of truck load. If the system cannot match successfully, the system will display "Failed to match logistics vendor and consumer, please input the conditions again." Then, the vendors need to input the conditions again until the match succeeds. Once the match succeeds, the trucks and the matched goods will be grouped first and the system will read the distance matrix, time matrix, weight matrix, time window of each good in each group. The operation data file, therefore, is generated. Then, the system will calculate the minimum cost and delivery route of each truck, and the delivery route of each truck will be displayed on the platform. As a result, consumers and the logistics vendors can clearly view the delivery route through the browser.

In the past, the LTL load vendors in Taiwan used to apply their experience and intuition to plan the route and dispatch the fleet; their website only displayed the e-map for users to view and informed the consumers with text messages. However, the Less-Than-Truckload Load Matching E-Marketplace Platform combines databases, delivery mode, and WebGIS technologies. Therefore, the platform provides the vendors with a scientific delivery mode to improve the work efficiency and cut the cost so that consumers can have better delivery services. Moreover, general users are able to handle the delivery status in a high-interactive, visualized manipulation environment.

Results

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Software Used

SuperWebGIS

Microsoft® Windows Server 2003

Microsoft® SQL Server 2005

SuperGeo™ GIS Software & Solution