spatialitics™
A CyberTech Company

Case Study

Swap, Repower And Relay Assistant

Overview

Maverick Transportation is a Little Rock–Arkansas based transportation and logistics company. Maverick operates over 1500 trucks coast-to-coast, in Canada and to Mexico providing customized logistics solutions. Logistics solutions are provided through variety of trucks such as Flatbed, Pneumatic, Temperature Control, etc.

Maverick has a mission to deliver the highest quality services by selecting, training and supporting the best drivers in the industry. It has a program which aims at having drivers at home on weekend. Maverick needed a system which can help the Fleet Managers to achieve the aim of this program.

Background And Objectives

The Maverick Fleet Managers have to balance customer demands, equipment and promises to the drivers to "get them home on time". One of the ways to balance these needs is load swap among the drivers. The process of changing drivers (known as 'Swap') involves multiple steps of identification, selection and cost benefit analysis to make the right decision for the customer, the driver and for Maverick. Also, to ensure highest quality of service to their customers, Fleet Managers needed plan for Repower (dispatch the load through another truck) and Relay (ensure the load keeps on moving continuously through sequence of drivers).

The whole process requires experience and expertise about the geography, routes, loads, drivers, etc. In order to streamline the process, Maverick wanted Decision Support System to make a good decision.

Some of the objectives of this project were –

- Map-based interface to visualize the current location of drivers and loads
- Completely remove dependency on multiple tools for calculation, analysis, etc.
- Define approach for identification of swap need and to aid decision making
- Provide all related information such as current location, truck type, current load, etc. through single platform to help in quick decision

- Provide ability to perform cost analysis for various combinations of swap candidates and locations
- Maverick wanted to have minimal capital expenditure on platform.

Spatialitics Solution

Spatialitics implemented GeoServe™ as a decision support system to help the Fleet Managers in making quick and precise decision. The solution is a web-based system which provides intuitive visual interface for the identification of swap candidates. This system makes it easier for a Fleet Manager to find out which driver requires swap, identify good candidates for swap, perform what-if analysis to understand cost-benefit analysis, identify possibilities to repower and ensure relay of the load.

Solution was built in two parts –

- A server-side application which ensures the system gets the latest data of the truck locations, routes, and decisions by Fleet Managers
- A web front-end application to visualize and retrieve route & driver information, identify candidates for swap, repower or relay and analyze the cost associated with the decision

Reference data such as truck terminals and drivers' home location was set-up in ArcGIS Online. The web-based front-end performed complex geo-spatial analysis to identify and suggest the best candidates for swap, repower and relay.

Key benefits provided by the system are –

- Provide map based visualization of the routes, driver home locations, etc.
- Integrated view of truck locations captured through GPS (AVL feeds)
- Defined approach to identify and prioritize the drivers at highest risk, that may be unlikely to reach home on a defined date
- Complex geo-spatial analysis to identify the suitable candidates for swap
- Analysis and calculation of the cost associated with different strategies
- What-if analysis of the different possibilities based on swap candidates and swap locations

- Spatial analysis to identify the quickest available repower possibility
- Help Fleet Managers in ensuring timely delivery through relay of the load using series of drivers

Esri Technologies Used

The solution used ArcGIS Online services as one-stop shop for all GIS needs. ArcGIS Online was used to store all the GIS data related to routes, driver home, etc. ArcGIS Online routing service was used to generate the route and to calculate the extra miles required to be travelled in each option available for the driver.

ArcGIS for WPF based application ensured that the routes (line features) are available for analysis based on the latest route plans.

Spatialitics LLC
1301 West 22nd Street, Suite 308, Oak Brook, IL 60523, USA.
Phone: +1 - 630 - 472 - 3200
Email: info@spatialitics.com

www.spatialitics.com