Sears Product Repair Services

Enterprise GIS Improves Product Repair Services and Home Delivery

Problem

Sears, the largest repair service provider in the United States, needed to increase the efficiency of a fleet of more than 10,000 mobile workers.

Goals

- Reduce travel time and mileage per stop to improve productivity of workforce.
- Automate support work.
- Enable technicians to become more profitable.
- Retain customers through improved service levels.

Results

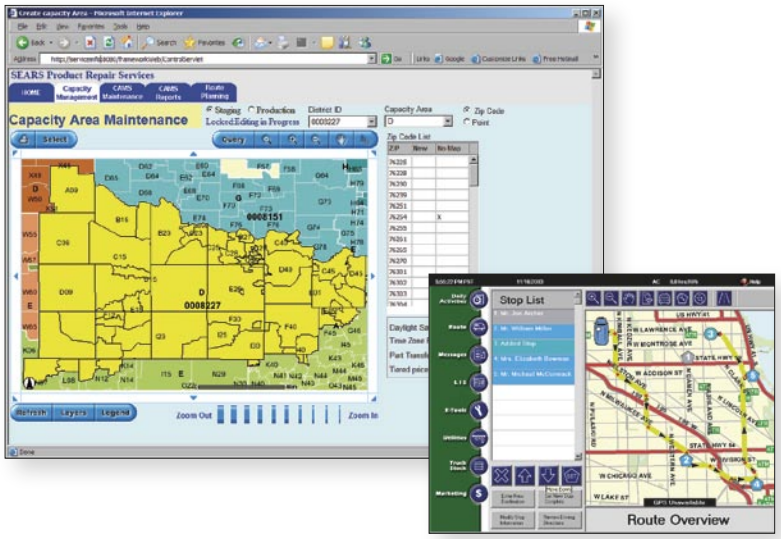
- Increased technician productivity by one-half completed call per day
- Number of repair service districts reduced by more than 60 percent
- Number of dispatchers reduced by 75 percent

"With a large vehicle fleet, huge cost savings and productivity benefits can be realized with the use of GIS and optimization techniques. Reductions in support costs can also be realized by making associates more efficient and able to dispatch more technicians and vehicles."

Steve Jones
National Routing Manager
Sears Product Repair Services

Overview

Sears Holdings Corporation is a true megastore. With nearly 900 full-line stores and 1,100 specialty stores, the company has more than 48 million active Sears customer households. It is also the largest repair service provider in the United States.



The Challenge

Sears manages one of the largest home appliance repair businesses in the world, with six distinct geographic regions that include 50 independent districts. More than 10,000 technicians throughout the United States complete approximately 11,000,000 in-home service orders each year. The business of supporting a mobile workforce requires good management, and Sears knew that geographic information system (GIS) technology was the answer to routing, a geographic problem.

Sears originally turned to ESRI in 1994 to improve its home delivery routing, reducing its delivery time window and ultimately building on its century-old promise: Satisfaction Guaranteed or Your Money Back. The resulting application, called the Enhanced Home Delivery System (EHDS), was based on ESRI® ArcGIS® software. Subsequent teaming with ESRI created four more highly successful systems for improving delivery and other business functions over the last decade.

The EHDS system was complemented by a Warehouse Forklift Optimization System, which optimally routes forklifts through large warehouses across the United States. These forklifts execute routes that pick and stage merchandise for loading delivery vehicles in last-in, first-out order. Sears was hoping for one more pick per forklift, per hour, and the ESRI application yielded 12 additional picks per hour. Sears realized it could extend the opportunity for improvement out to the field as well. Seeing the increase in profitability and efficiency in home deliveries, it looked forward to bringing these savings to the home service repair business.

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ESRI Software Used

ArcInfo®

ArcIMS®

ArcSDE®

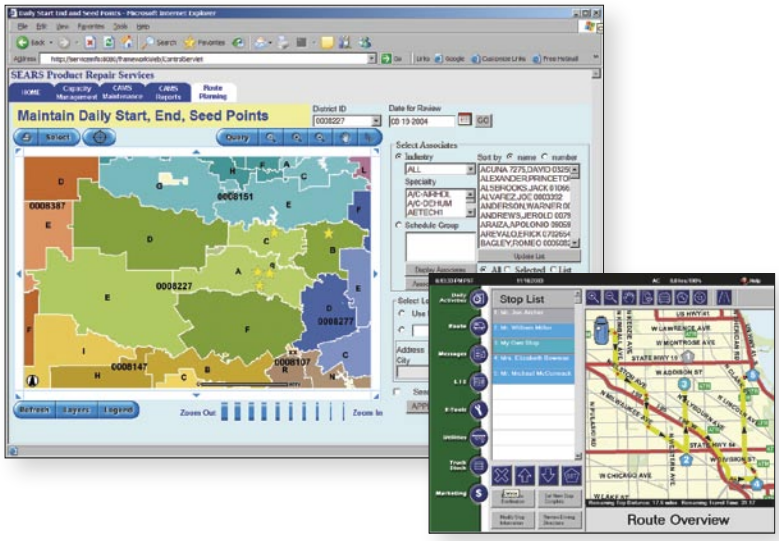
ArcGIS Engine

"Almost any mobile workforce can benefit greatly from a well-designed and managed GIS due to the low cost and flexibility of ESRI tools and products."

Steve Jones
National Routing Manager
Sears Product Repair Services

The Solution

Once again, Sears teamed with ESRI Professional Services to build the Computer-Aided Routing System (CARS) and the Capacity Area Management System (CAMS) used by Sears Product Repair Services. CAMS manages the planned capacity of available service technicians assigned to geographic work areas. CARS provides nationwide street-level geocoding and optimized routing for more than 10,000 mobile service technicians daily. The mobile Sears Smart Toolbox application provides service technicians with repair information, such as schematic diagrams, for products. It also contains a GIS module provided by ESRI for mobile mapping and routing, which gives in-vehicle navigation capabilities to assist in finding service locations and minimizing travel time. Accurate street data is critical for supporting geocoding and routing for the Sears applications, so Tele Atlas Dynamap® street data is used.



Results

GIS optimizes routes in many ways that are not available through other means. These systems consider more routing options than a dispatcher can, such as finding the optimal (not just the shortest) path between stops. This increases routing accuracy. The optimal routes add productivity, and vehicle costs are reduced.

Before using GIS, Sears manually managed the number of calls taken and routed them by hand. With the GIS-based CARS system, the travel time has been reduced on average by approximately four minutes per call, which adds another one-half call per day completed on each technician's daily schedule. This addition increased the productivity of the technicians by more than 10 percent.

Sears benefited from other support cost savings as well. Before using GIS, more dispatchers were needed. Now, GIS allows one person to handle three to five times the number of technicians. The size of the district territories has increased, reducing the number of other support associates needed. Sears has found that the IT costs incurred to support the GIS are more than made up by the savings the technology provides.

Sears continues to explore further updates and advancements using GIS in partnership with ESRI and Tele Atlas.

For More Information

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