Route Optimization through ORION
On Road Integrated Optimization and Navigation

UPS takes a holistic approach to integrating data into technology. Arguably the world’s largest operations research project, ORION uses fleet telematics and advanced algorithms to take route optimization to a new level. In 2013, UPS began the first major deployment of ORION, with plans to deploy the technology to all 55,000 North American routes by 2017.

1.5 million gallons of fuel savings and 14,000 fewer CO2 emissions by end of 2013 by optimizing 10,000 routes
55,000 North American routes planned for deployment by 2017
Tens of thousands of route optimizations per minute based on real-time information

“Telepathic Trucks” – Fuel Efficiency Starts with Vehicle Data

Sensors that capture over 200 data points for more than 80,000 vehicles are downloaded every day. The data analyzed include:
- Engine monitoring
- Number of stops
- Mileage
- Safety aspects

GPS Captures driver behavior and fuel habits

Maps Collects ambient points and vehicle location

Engine insight into performance and condition

Sensors Report on emissions and fuel consumption

Devices Monitor deliverables and customer service

Secrets behind ORION

Telepathic data works, in turn, with a proprietary infomatics application that helps analysts make the data to drive operational improvement strategies that also have environmental benefits.

“Exponential Results

A host of technology investments have helped UPS find ways to sort and load packages more accurately and precisely. These advancements also allow the company to provide drivers a customized manifest of packages on each vehicle to ensure optimized delivery. These efforts drive efficiency and service improvements, as well as environmental benefits.

Mileage and Fuel Reduction

The amount of carbon emissions avoided due to reduced miles per stop – 12.1 million miles of driving eliminated in 2012.

13,000 metric tonnes of carbon emissions

The amount of fuel saved since 2001 through route optimization.

39 million gallons

206 million minutes

Amount of idling time reduced in 2012, saving more than 1.5 million gallons of fuel.

“ORION is one of the best examples of using data and analytics in front-line processes.”
– Tom Davenport, International Analytics Institute co-founder and Babson College professor

Big Data = Big Wins for the Environment

UPS manages more than 16 million shipments a day, all over the world. Its single integrated and optimized network results in environmental benefits such as reductions in fuel use and greenhouse gas emissions. To make the network operate more efficiently and reduce environmental impact, UPS designs, acquires, implements and optimizes information technology for continuous improvement. Technology has helped UPS fine-tune various aspects of its operations – from planning and routing to flying and driving – something that’s good for business and the environment.

A key tool in achieving sustainability improvements is the use of “big data.” UPS uses proprietary package flow technology to determine what packages are loaded on each vehicle, then gathers data from several aspects of fleet operations using a telematics technology system.

“Multiply the smallest environmental savings tactic by more than 102,000 vehicles worldwide, and you can start to imagine the potential.”
– Dale Spencer, UPS Corporate Automotive Manager

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