

The benefits of GIS

Simon Weaver, analytics programme manager at [Esri UK](#), looks at the common problems for logistics companies leading up to the Christmas period, and how ground-breaking Geographic Information System (GIS) technology is helping ensure that all Christmas presents arrive with Santa-like efficiency

This year it is estimated that online Christmas shopping will grow by some 14 percent, eclipsing last year's high which saw UK shoppers spending £21.6b on gifts over the festive period.

Last year as Christmas Day loomed, the media was littered with angry online shoppers after it was revealed that stretched couriers were struggling to deal with a massive backlog of presents, and tens of thousands of people are believed to have been disappointed by gifts not arriving in time for Christmas morning.

The supply chain is under more pressure than ever before, and the potential damage to brands caused by late deliveries could be untold.

The annual online scramble is part of a dramatic change in the way people shop, with 20 percent of non-food sales now being made from the comfort of our laptops, tablets and phones.

Last year more than £2b was spent in the four days leading up to the festive period alone, up 50 percent on expected levels, leaving the delivery system under huge pressure.

By the end of the year, UK retailers are expected to have sent more than 860 million

parcels to British homes, up almost a half from the 600 million sent in 2012.

A supply chain recruitment drive

To help with the surge, online retail giant Amazon is in the process of recruiting an additional 19,000 seasonal workers this year, while the Royal Mail is recruiting the same number of staff to help distribute the post over the festive period.

To help facilitate the trend, there are now more delivery vehicles on the road than ever before, with figures from the Society of Motor Manufacturers and Traders (SMMT) showing an increase in van registrations of almost 17 percent this year.

There are now two-thirds more commercial vehicles than there were just ten years ago, with the SMMT estimating that there are now around 40,000 delivery drivers.

At Christmas more than ever, fleet managers need to make sure daily fleet movements and maintenance schedules run efficiently without compromising quality customer service.

Through Geographic Information System (GIS) mapping and analytical capabilities, transport and logistics companies can unlock big data to improve shipping times, track dynamic

assets, weather systems and other real-time environmental data to ensure the most optimum route from click to under-the-tree.

Optimising routes and going green

Modern day GIS can help plan and manage the fleet by increasing the number of deliveries per route while decreasing excess capacity. However, optimised routing is much more than just considering the quickest way to get from A to B.

Dispatchers need to consider every element that affects daily operations. GIS helps companies maximise the use of assets to create optimum routes based on specific variables, including vehicle capabilities, driver specialties, changing street network restrictions, and customer time windows.

Some GIS solutions now enable customised real-time feeds, giving company executives, dispatchers, and customer representatives a 360 degree view of the most up-to-date information in a user-friendly format.

As well as highlighting the positives, such solutions also highlight potential issues. Large courier companies like FedEx use real time location information for vehicles to provide an early warning

when a vehicle falls behind time to the extent that it might miss a delivery window.

This is important, as missing a delivery window can lead to penalty charges. If you can identify that the window will be missed early enough, then you can give notice and negotiate a new delivery window that it is more realistic.

Through implementing GIS solutions, logistics customers typically enjoy savings of up to 30 percent in operational expenses through a reduction in mileage, overtime, and route planning time to improve efficiency.

The mileage savings have the added advantage of reducing the company's carbon footprint, thus advancing green credentials and ensuring they meet increasingly stringent government regulations.

With customer expectations soaring, logistics companies are under increased pressure in the run up to Christmas to deliver millions of online shopping orders with Santa-like efficiency.

By integrating data from existing workforce, fleet, and customer management systems, GIS can help overcome many of the traditional hurdles and reduce the time from click to tree.



