



Dragonfly



Predict | Verify | Optimise

Data fuels critical activities across businesses, from cost reduction to risk mitigation

Most companies in supply chains understand this. They value a data-driven approach, so they invest in the tools to collect data within their organisation.

The problem is, too many companies are using inadequate tools to interpret their data. Here's what happens all too many times:

Old way:



The entire process is too slow, and isn't viable for frequent use.

Some companies abandon their efforts in data analysis altogether. The whole exercise can be a waste of time and money.

Traditional forecasting tools do exist, but their methods tend to overlook a critical aspect of making predictions: uncertainty. Anything can happen at any time, and you need to be prepared.

You need a robust solution designed with an understanding of the dynamic world of the supply-chain environment.

The solution: Unipart Dragonfly

Dragonfly is a true digital solution – one that automates and streamlines the process for you. This set of web applications helps increase the efficiency of supply-chain operations.

New way: Making smarter decisions



Advanced Machine Learning forecasting algorithms

Specially designed to deal with uncertainty. Accurate and interpretable time-series forecasts are generated for a variety of data types. For instance, you can use Dragonfly to forecast future inventory demand or operations workloads.



High-performance process simulators

Our simulator understands and re-creates the behaviour of supply chain networks. You can create 'what-if' scenario testing, predict the impact of a decision or process change on your KPIs and identify opportunities.



Optimisers

Not only can you simulate processes, you can optimise them. Optimisation algorithms adjust your operations to enable the best possible outcome. Using the process simulator to search through combinations to achieve your objectives, it finds the process parameters that produce the best KPIs. For example, you can determine ideal inventory parameters for different supply chain networks.

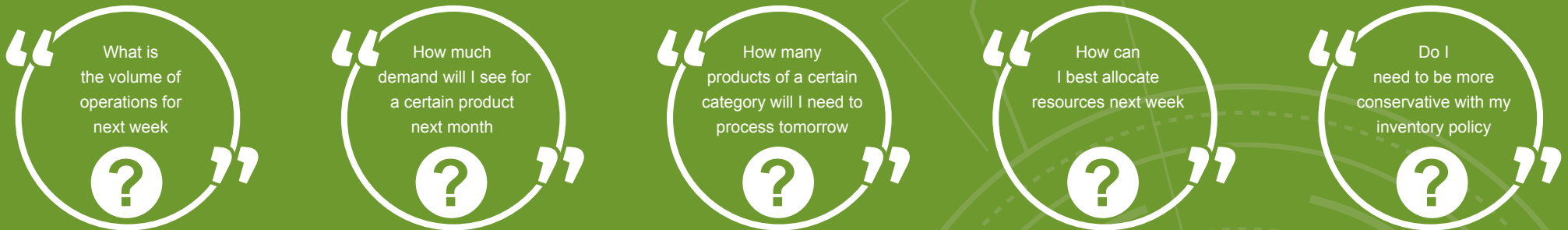
Three modules that interact with each other:

- Warehouse optimisation via inbound and outbound volume forecasting
- Simulation of different scenarios so that you're prepared for nearly every eventuality
- Optimisation of product location, range, inventory and resources, so that you have a deep view into your operations



A new outlook

Dragonfly enables agility, which helps you gain significant efficiencies. It answers questions such as:



With your forecast, you can then estimate the impact of this data on the business. Business leaders can use the insight to control operational costs, manage risk, and improve other relevant KPIs – or adjust operations to meet KPIs.

Accurate, up-to-date information leads to smarter decisions that make a difference.

Modular architecture

Dragonfly can be deployed flexibly to best fit your needs, either as a set of web applications* or as a plug-in service to enhance other tools, such as:



Inventory System



Enterprise System

Each module can handle large amounts of data and integrate with other platforms through standardised interfacing.

*Integration with Enterprise System is in progress

A working example

How Dragonfly reduced the costs of unplanned events for one leading equipment and vehicle-hire firm

This industrial hire firm spends tens of millions of pounds each year maintaining its national fleet of forklift trucks. Maintenance is by far its biggest expense and 80% of all repairs are unplanned. With free maintenance built into contracts, this is a cost that directly affects the company's bottom line. Keeping these trucks running is critical to business success.

2/3

of total maintenance
costs are due to
unplanned events

In most cases, components that fail need to be replaced within 24 hours, otherwise the company can't fulfil customer requirements. Yet these parts are shipped just-in-time to any UK location via a complex logistics network. At the same time, maintenance engineers have to be called out to the same location to fit them.

These unplanned events are often caused by the failure of a single, inexpensive component. Yet it can cost 20-30 times more to send and fit the replacement.

So how did Dragonfly reduce the likelihood of unplanned events and deliver significant benefits to this hire firm?



Forecasting when maintenance is required was just one part of solving the problem

Predicting when a particular component may fail seems like the obvious way to prevent such high maintenance costs. It is if you can intervene right before the component fails and spend less to fix it. Yet, for the hire firm, knowing when the part was going to fail would still require a costly site visit.

Instead, the company needed to know the probability of failure before the next scheduled maintenance visit. This would remove the uncertainty and allow the hire firm to decide whether or not an engineer should proactively replace a component before the next planned visit.



Forecasting

Using historical failure data supplied by the hire firm, Dragonfly modelled which components would need replacing and when. From an interactive dashboard, users could select individual parts, specify the timeframe and run the forecast. Dragonfly responded with a list of “replace” or “do not replace” recommendations.

Optimisation

This forecast was run through a Machine-Learning-based optimisation tool to generate a list of components that needed replacing at different sites. The tool also provided a map of all these locations to group parts orders by region or engineer to optimise costs and demonstrate potential savings.

Simulation

The next step was to simulate what those savings might look like over the long term. Dragonfly showed what the simulated cost reduction would have been for a single year for which there was data (2018). Dragonfly suggested “replace” or “do not replace” and the cost of these were compared with the real costs from the same year.

By recommending the early replacement of components, what kind of returns did Dragonfly simulate for the year?

Removing uncertainty through forecasting, optimisation data and simulation could result in savings in the millions

Dragonfly demonstrated how this specialist equipment- and vehicle-hire firm could see a 52% reduction in unplanned events, simply from applying predictive maintenance. This represents a 12% operational cost reduction, which translates into savings of several million pounds per year.



Estimated savings of

12%

Estimated reduction
in unplanned events:

52%



This kind of result is common with Dragonfly. With high quality data and the right questions, it is possible to demonstrate the added value of predictive maintenance. In this example, Dragonfly was given a relatively simple data set. Yet the same approach could be extended to analyse far more sophisticated metrics. For example, the condition of each vehicle from telemetry data.

For the same hire firm, the same principles could be applied to warranty design and inventory stock-out or other critical operations activities. And the same outcomes can be forecasted, optimised and simulated for any large-scale operation in any sector.



Summary of benefits



Enables insight into your processes



Helps mitigate risks



Drives more informed decisions



Optimises processes to improve operational performance



Allows for accurate forecasts that consider uncertainties



Has KPI targets, which can be adjusted as needed



Helps prepare you for every possibility with 'What-if' scenarios



Improves resource allocation



Get started today

To learn more, contact:

Jen Hunt, Digital & Innovation - Unipart Logistics

📞 07584 556760 ✉️ jennifer.hunt@unipart.com