

Commercial Motor

Paragon Review

It's the biggest name in routing and scheduling, but is it really that good? We take a look at Paragon.

AT THE HEART OF THE ROAD TRANSPORT INDUSTRY

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Route master

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Words: Toby Clark

Paragon started up 30 years ago, as an offshoot of technical consultancy firm PA Consulting. Now independent, it is the largest player in the UK routing and scheduling market – it uses the phrase “transport optimisation and execution” – and estimates its market share to be 60%.

While Paragon is best known for its use by large, high-profile operators – it counts the big four supermarkets as clients – the firm's MD William Salter characterises the product as “a very flexible solution, [which works] over a wide range of industries and different sizes of organisations”.

The product is used by some small operators, including a nursery and a garden shed supplier, with fewer than 10 vehicles. “We retain 95% of our customers year-on-year,” says Salter, who adds that Paragon shouldn't be seen as simply a default choice. “We have to work at giving really good reasons why clients should pick us.

“One of our reasons for existing is to take more trucks off the road,” he says, pointing to a raft of case studies with impressive statistics: Sainsbury's, says Paragon, has reduced empty running by 12%, for example, while Tesco has saved 150,000 miles a week. At the other end of the retail sector, Harrods has cut its transport costs by 15%. Other sectors have also quoted significant savings: Paragon says office supplies firm ACCO UK has saved 5.6% in warehouse costs, Tracker Network has cut fuel costs by 22% and bicycle-maker Raleigh has halved planning time.

Support director Phil Ingham says: “A huge differentia-

tor for us is our development team and our support team – they now look after more than 400 customers.” Paragon has 53 staff, most of them based at its offices in Dorking. There are 16 support staff, 15 developers – and impressively, 11 of those have been with the firm for more than 10 years.

At its core, Paragon is a route planning and optimisation tool, based on the firm's own algorithms, developed in-house. It is Windows-based, and does not require any specialist hardware.

The Paragon system is primarily intended for operational planning, but is also widely used for strategic planning. “The data that's used operationally can be lifted easily into another copy of Paragon for strategic use,” says Phil Ingham. It can also be used for tactical planning, for example to plan for the Christmas rush or amend a fixed route. “Most people will think that Paragon is a piece of software that runs on a PC in a depot to produce routes for tomorrow,” says Ingham. But, he points out, many users run the system from a central server, sometimes catering for operations in several countries.

He stresses that Paragon is a modular product (see ‘Add-ons’ box), which can deal with single- or multi-depot operations, or integrated fleets where a single vehicle might be based at more than one depot: “It's a way to move planning from a regional task to a national one – and to centralise excellence in planning.”

Possibly the most fully realised application is TTS (Total Transport

System), which combines the Paragon modules with telematics and fleet management systems from Isotrak. Sainsbury's uses this to “re-spin” and reschedule operations throughout each shift.

Hands-on

Whatever the system is used for, whether as an operational tool or in strategic planning, the user interface is known as Paragon Workbench. When you open a new document (or ‘schedule’, in Paragon's terms) you can see that this is not just a Windows-based product – it complies with Microsoft's own interface standards, so its menus will



▲ **Paragon Fleet Controller:** The central interface with Paragon is known as Workbench

“At its core, Paragon is a route planning and optimisation tool, based on the firm's own algorithms, developed in-house”



◀ **New Schedule showing Resource Information: Resource usage can be shown in the form of charts as well as tables**

be familiar to any user of Microsoft Office.

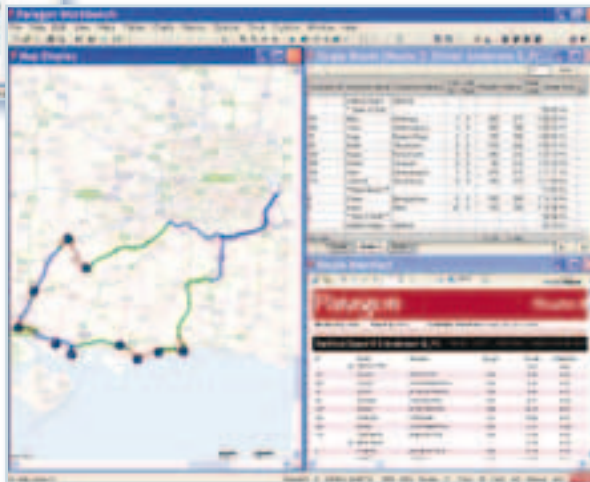
“It’s a very complex problem we’re trying to solve,” says Ingham, “so let’s make it as easy to use as possible.” Paragon includes comprehensive help screens, clearly written and laid out in a familiar style – the firm has a full-time technical author on the staff.

Unusually, Paragon also supports multiple languages, and can even operate in several languages at once: one customer has a server in Germany providing scheduling services for a number of fleets around the world.

Like other routing and scheduling systems, Paragon Workbench includes map and table views, but it also offers chart views. For example, a route can be shown on a map, either as the “real” route or a schematic with straight lines between stops; as a tabular summary listing places, times and other information; or as a GANTT chart – the typical chart used in project management that shows the schedule in the form of proportionately-sized bars for each activity.

In table view, you can drag and drop stops to move them around, just as you would in a spreadsheet application like Excel, and you can show the data in order by any column. Editing static information such as opening times or contact details for depots, or the type and size of vehicles, is also straightforward.

In map view you can click on stops to select them or



▲ **Paragon - Single Route Review: Route information can be shown in map or table form, as well as on a manifest suitable for printing**

draw a box around them – you can even draw an irregular shape around a series of stops to select them. Any of the information on the screen can be printed, and if you get something wrong, there is a regular “undo” feature.

Mapping data can come from a number of sources, but for the UK it is usually supplied by Navteq, with road speed data from ITIS. Users can edit maps to exclude certain roads, if there is a local prohibition, for instance.

“Paragon isn’t just a vehicle routing system – we’re actually scheduling all resource types at the same time,” says Phil Ingham, and it is possible to show the use of

resources in a number of different types of charts. You can plot the usage of a fleet of tractors (or their drivers) throughout the course of a day, or show how the activity at a depot varies throughout a shift.

Users can customise the graphical output of the program – to show drops as dots sized according to their value, for instance – and can define a preferred workspace, perhaps to simplify the view for a particular user.

Users themselves can be defined by their roles – for

example, a traffic office administrator might be able to create new schedules and modify every criterion in the model, whereas a driver might be able to see (but not alter) their list of drops for the day.

Resources are defined within a module known as Paragon Resource Manager: in this case, resources do not just include trucks and trailers, but also drivers. A driver’s shift pattern can be defined, along with duty constraints (whether they need to attend a debriefing session at the end of each shift, for instance) and Drivers’ Hours and

“Many users run the system from a central server, sometimes catering for operations in several countries”

ADD-ONS: VEHICLE TRACKING, HOME DELIVERIES AND MORE

The core Paragon system is a pretty sophisticated product in its own right, but as with much software these days, additional modules can add specific functions for particular applications.

Paragon can be connected to vehicle tracking systems from most suppliers, using its Fleet Controller product – this has around nine certified interfaces with the main players in the tracking market, including Isotrak, Minorplanet, Masternaut, Cybit, TomTom Work and Navman Wireless.

Phil Ingham says the system works with

pretty much any tracking system, but adds: “We find quite a lot of variability in the quality of data they can provide.” For mixed fleets, Paragon can also integrate GPS tracking data from more than one tracking system.

Paragon’s HDS (home-delivery system) is an add-on for home delivery operators: it incorporates an order management system (derived from Axida’s established product), which can offer a date and time for delivery to the buyer at the time of ordering – even for web-based transactions – as well as coping with amendments to orders and giving order

and delivery status reports.

Further modules for HDS include a Visit Debrief Manager (which links to mobile electronic PoD devices) and Paragon Fleet Controller.

Other modules handle different aspects of strategic planning. They include: Fastnet, for planning territory coverage for a network of depots; MPP (multi-period planner), for handling operations with multiple delivery cycles; and Territory Optimiser, which is designed to divide regions into territories, particularly for sales or field service staff.

Road Transport Directive rules. Every resource has a cost, which can for instance include the cost of an overnight stop for a driver.

Resource Manager can also deal with compartments within vehicles: you can define the precise layout within a trailer, and specify properties such as the loading rate or flow rate of bulk materials. It is also possible to program in exclusions – to prevent petrol from being loaded onto a gas-oil trailer, for example.

However, one feature the Resource Manager does not have (yet) is a lookup table to check the rates of third-party hauliers or pallet networks, to see if this is a more cost-effective option for outlying drops. This was a feature of the Optrak system *CM* looked at recently (*CM* 6 May 2010).

The Resource Manager can show data in a calendar view, to see easily when drivers are on holiday or vehicles are off the road for servicing. The Paragon system can also interface with Tachomaster's drivers' hours monitoring service.

The workflow

Like its competitors, Paragon takes data from order systems, warehouse management systems and ERP systems either directly or via spreadsheets or databases. This done, the user selects the relevant depot or depots. The system then displays only the relevant orders for those depots, and makes a first attempt to optimise the schedule.

The user can add orders to a route, but might get a 'Route Feasibility Messages' window if this will cause problems. Once these are resolved, the schedule can be 'published', making it available to other users in the organisation – drivers, warehouse managers and other traffic offices, for instance.

Paragon's links with tracking systems and telematics can make it easy later (if the system is configured appropriately) to compare the plan with the actual execution: "That's the key, really," says Salter, "feeding it



▲ William Salter, MD of Paragon Software Systems

CRACKING THE USA

Paragon's systems are already used in 33 countries around the world, but the firm is making a special effort to break into the giant North American market. It now has a US office with five staff, although telephone support and development are still based in the UK.

"We're very focused on customer support," says MD William Salter, "and we've had very good feedback. We can be very quick on our feet developing new features – our US competitors tend to pile it a bit higher than we do – and some of our UK features have given us an advantage in the US."

"In multi-drop foodservice applications," says Phil Ingham, "the UK way of working maps very well on to the US conurbations."

all back". The system can generate different types of reports, such as a profile of planned versus actual journey times across the day. A tabular report, showing the variance between planned and actual times, can be sorted by any column.

Live progress data is available as an add-on, in the form of a feed of arrival times for a particular depot. If the system includes Fleet Controller, a Navman Wireless setup in the cab can allow the driver to see live routeing details.

The bottom line

The sales model Paragon uses is like much other software: customers make a one-off purchase of a perpetual licence for a given number of users to use the system, then pay an annual fee for maintenance and support.

William Salter reckons full systems are available from around £20,000 to £1m or more: "If you're looking at a 20-vehicle operation fully implemented, you could be looking at £25,000 [for the initial licence], plus around 15% a year for maintenance." For a 50- to 100-vehicle fleet, a system including Fleet Controller and the appropriate training could cost £60,000-£70,000.

"People are a bit more aware of the cost of failure now," says Salter. "People have tried a number of systems, and don't just make a decision on pricing any more."

Conclusions

Probably the best-known name in routeing and scheduling, Paragon certainly seems to have all the bases covered. The interface is sensible – about as simple as it could be, considering the number of features – and the look and feel can be configured to suit different users.

The system can be scaled to accommodate more users or extra fleets, and operators can add features. It is clear that this can be used effectively in everyday operation and for strategic planning. We also have to conclude that it performs well and support is good, given the impressive list of testimonials Paragon's customers have provided. They certainly suggest that the system could pay for itself in pretty short order. ■

ID	Customer	Total Messages	Status	Message Date	Message Date	Message Date	Message Date	Message Date	Message Date
100	Customer 1	100	0	0.00%	0	0.00%	0	0.00%	0
101	Customer 2	200	0	0.00%	0	0.00%	0	0.00%	0
102	Customer 3	300	0	0.00%	0	0.00%	0	0.00%	0
103	Customer 4	400	0	0.00%	0	0.00%	0	0.00%	0
104	Customer 5	500	0	0.00%	0	0.00%	0	0.00%	0
105	Customer 6	600	0	0.00%	0	0.00%	0	0.00%	0
106	Customer 7	700	0	0.00%	0	0.00%	0	0.00%	0
107	Customer 8	800	0	0.00%	0	0.00%	0	0.00%	0
108	Customer 9	900	0	0.00%	0	0.00%	0	0.00%	0
109	Customer 10	1000	0	0.00%	0	0.00%	0	0.00%	0

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