

Disruption - tire maintenance

Disrupting tire maintenance



One of the themes we are following is how the tire industry is being disrupted by new entrants and new technologies. In this case, I want to look at tires in use; tire maintenance and fleet operations.

I spoke with Glenn Sherwood who set up TrucTyre in the UK, and has now set up a new company, TyreWatch, with his partner, Mark Longden. That company is working with WebFleet Solutions, N4, and OEMs such as Scania, Volvo and others in the fleet management segment.

They aim to disrupt the business of tire maintenance. Longden said, "We are in the business of fault detection and predictive maintenance"

Sherwood, who has been in the tire industry for over 45 years, much of it spent with Goodyear's fleet operations in the UK, said, "Mark and I got together in late in 2013 because we could see that over the next 5 to 10 years, the cost of managing fleets from a tire service point of view is not sustainable."

Within that thought were a number of different factors.

- Good tire technicians are getting harder (and more expensive) to find.
- It simply takes too long to locate a truck or trailer, find the valves, remove the valve caps and log the pressure. That process is not cost-effective.
- Companies do not know where their vehicles and trailers are located.
- Tire service companies do not always do everything that they invoice for
- Much of the tire service activity – and control – has been outsourced to third parties, with no effective feedback to the fleet manager.

Sherwood noted these and other failings of the existing system and realised that, "I had to start looking at the changing dynamic of how we went to market. We needed to become more proactive so that the technicians became more productive."

He said, "The tire servicing segment cannot survive in its current format; it is too expensive."

His employer at the time did not take notice of these concerns, so he left to set up his own business, TrucTyre, that was eventu-

ally sold to Michelin.

He noted that the tire industry is falling behind some of its clients. International delivery companies like DPD, DHL and Amazon have fleets of delivery vehicles, and they tell their clients exactly when the deliveries will be made, with constant updates on progress, and visibility on the web.

If one of those vehicles has an issue with its tires, the tire companies are unable to say when the mobile unit will arrive to service the tire. It is not possible to locate the service truck on the web, and the service companies can't even send a text to the client saying how long the driver will have to wait.

This seems extraordinary to anyone who follows the logistics industry. That industry has become much more professional and data-driven in recent years, but the service professionals cannot give to DHL the same level of service that DHL gives to its clients. Sherwood said, "the tire industry needed to get much better data on what its tires were doing." He continued, "I found it embarrassing to go along to any of these big fleets like DPD or DHL and tell them that we could not let them know to the minute when the service truck would be with them."

He said the response within the industry was that those clients were very hard on price, and it was not really worth fighting for the business.

The reality, said Sherwood, is that those companies were looking for partners who could work with them in a digitised value chain.

They were unable to find partners in the tire world who had a business that could connect with their own digital business environment, so almost in despair, they focussed purely on price.

What a digital environment can do for maintenance

Sherwood highlighted a recent incident in a 2000-vehicle fleet trialling the TyreWatch platform. The trial is on a couple of dozen vehicles - around 1% of the fleet.

He said a single incident cost the fleet GBP890, due to inefficiencies, poor monitoring of actions and bad data.

It should have been identified immediately, and cost GBP75. The TyreWatch system would have made that saving of over GBP800, more than paying for itself.

If that level of inefficiency is extrapolated to the whole fleet, the savings are likely to be around GBP3mn each year.

Longden said, "this whole business of fleet maintenance has been such a dark art in the past, but nobody has really known the scale of all of the problems. It is not just about the time and money taken to measure pressure and tread depth; it is a whole complex system of collecting that data and getting it to the right

people and identifying specific problems. It is a complex system that needs to be effectively managed."

He added that it is not unusual for a truck to stop at the side of the road due to a flat tire alert. The service truck claims to have fixed the issue, and invoices for a new tire. In reality, the service technician only put more air into the tire, so the problem repeats itself three or four days later.

Longden said that the TyreWatch system can detect what was done to the tire, "with our sensors and technology, the fleet operator can see this, and ensure that the correct maintenance has been carried out. The data talks directly to the fleet operator and puts him in a much more powerful position."

He said that digitising the system not only makes it easier to access the data in critical cases, but more importantly, it permits executives to manage the data in completely new ways.

He said, "the customer has never seen this data before and never knew that it existed."

Sherwood said, "we have given the customer control of the data and this gives him control of his tire program." He continued, "Over the last 10 or 15 years, most of the big fleets have contracted out tire maintenance to the tire manufacturers, or to 3rd parties." He explained that these systems amount to little more than a breakdown service and a clearing house for invoices.

"Using our data," said Sherwood, "the fleet manager can manage those situations before they occur. That is a massive difference."

Longden added, "this is a change of psychology and a change in the control of the fleet. That is the disruptive bit."

Psychology as important as functionality

Even though the system –and others like it –represent a great improvement in functionality and cost-benefit, Longden said, "you cannot use legacy technology to do this. You have to use the latest technology. You have to use artificial intelligence; you have to find ways of storing big data and manipulating it. There are lots of differences in the approach that are needed to extract full value from all of this data."

He said other suppliers are fitting a TPMS system, but they only identify when a tire has already lost its pressure.

The difference with TyreWatch is that the system constantly monitors pressure and compensates for temperature, and alerts drivers and fleet managers to potential problems before they arise.

This means, however, that fleet managers need to be prepared to adopt a different way of working. That fits well with the corporate culture at DHL or DPD, but less well with the fleets who are

Disruption - tire maintenance

wedded to the old, expensive ways of doing things.

Longden said, "I have to go and see a tire company tomorrow because there has been some resistance against our approach. They are resisting us because we are disruptive to their business models."

He said, "It is now very rare for one of our customers to get any kind of roadside breakdown related to tires. That has been cut by 95% if not more. The only time they get a roadside breakdown, is when the driver falls asleep and drives into the central reservation barrier or drives over a brick or something like that."

Longden said the old pattern used to be that a team of technicians would visit the depot over the weekend and examine the tires, carrying out repairs, re-inflation and other measures when they identified a problem.

Under the new model, the data generates alerts to the fleet manager, so that the driver is not even aware of those alerts. The tire teams still visit at the weekend, but they are directed to a particular truck and a particular wheel on that truck, and know exactly what actions need to be carried out.

The truck has GPS data, so the team knows it is in the depot (not at the driver's home, for example), and even where in the depot to find it.

Longden said, "the relationship has changed. The driver knows nothing about this situation. It has been completely in the hands of the fleet operator."

Given the attitude of the tire makers described above, it may come as little surprise that when asked to list clients, the TyreWatch founders listed fleets, OE truck makers, trailer makers, third party telematics providers before even mentioning tire makers.

Mixed fleets need multi-platform solutions

Longden said the industry is changing. Each of the different providers has developed its own proprietary system focussed on proprietary products - be that vehicles or tires. That is great if the fleet operator has a completely homogeneous fleet of single brand vehicles running on single brand tires.

Unfortunately, the world is not like that. All fleet operators run mixed fleets of vehicle types, brands and those run on a wide variety of tire brands and sizes.

They want the functionality of the proprietary systems, but not the exclusivity.

The big telematics companies have woken up to that fact and have created additional plug-ins for different vehicles and modules for different aspects of the vehicle, such as brakes, lubricants and tires.

Sherwood further explained that tire companies are used to selling a product and that makes it easy to work out profit and costs. Selling a service is a different model and needs a different approach to selling and business management.

He highlighted one of the premium tire makers who has a proprietary sensor that fits inside the tire. The telematics system from that company depends on the custom sensor, and that limits the platform to tires fitted with that sensor, and hence to one particular brand of tires.

Sherwood said, "they have not thought outside the box, in terms of how a fleet will use this combination of hardware and software."

Longden added that these proprietary systems are great for TyreWatch. "We are delighted if Michelin creates a proprietary system and Continental independently creates a proprietary system because we can knit those together."

Sherwood continued, "One of our priorities is to interface with 3rd party telematics providers and we have successfully done that up to now. That is a very solid route to market for us. We are not really in competition with (tire makers or telematics providers). We are what you might describe as just one piece of the jigsaw for them."

"Our business principles are to be agnostic and adaptive to the various different types of sensor around the wheel and tire, including tire pressure monitoring systems."

He added, "When you look at a commercial vehicle in general, everything around that truck is geared around sensors and vehicle management. This includes engine management systems; driver management systems; safety management systems. The one thing that is not really connected at this point is the wheel and the tire."

Sherwood said, "I think all of these services will come into an integrated package. More fleets will want something done where you take all of this information and wrap it up into a single platform as a service. Tire manufacturers will struggle with that."

"There is an opportunity," he added, "for a company that can take all of that data across different vehicles different telematics platforms and different tires and wheels and put it onto a single platform. That is what TyreWatch is about."

He concluded, "if the tire manufacturers do not do it, then I can assure you that there are other players in this business who see that as an opportunity."

Adding (artificial) intelligence

One of the key aspects of the system is that it now has built up a database of different vehicle types and applications, so that the system is smart enough to know when a tire is being used in an application that runs cool, such as a public service coach, running on low-rolling resistance tires. Tires in that application will rarely get above an equilibrium internal temperature of 60°C, and if they do, it is usually a cause for an alert and further investigation.

On the other hand, some applications tend to run hot, such as double-deck trailers, running on small-diameter tires to get a low floor platform. In these cases, it is not unusual for the tires to reach an equilibrium temperature of 90°C, even in an ambient temperature below 20°C.

TyreWatch technologies detect these temperatures, but the software can understand the different applications and not issue an alert until a critical temperature is reached, according to the application and specific tire and vehicle.

Sherwood noted, however, that the data has picked up some anomalies, such as one brand of tire (a well-known premium brand) runs significantly hotter in this application than other brands do.

He noted that without the TyreWatch data, a fleet manager might note extra failures in the Summer from that brand, but otherwise, the anomaly would go un-noticed. In this case, the fleet avoids the high-temperature brand in that application.

Longden said, "without the specific data, you would not really be able to understand what is happening there."

RFID tags to add more functionality

Sherwood noted that when tire makers put RFID tags into every tire, that will enable companies like TyreWatch to identify the specific tire, including size, brand, tread pattern, age and DoT number. "We can deliver all of the rest of the data including temperature and pressure alignment data. In due course, we will be in a position to predict when that tire needs service - not just from the pressure point of view but from tread depth and lining and every other aspect of the tire type such as Re grooving and replacement."

"This means that the tire service provider is using his time much more efficiently and much more effectively only addressing issues which really exist instead of gathering data and checking for problems that do not exist."