



**Manufacturing & Logistics IT** spoke with a variety of key players within the transportation management systems and services market about the scope of solutions currently available and how they can enhance operational efficiencies for today's increasingly demanding logistics professionals.

**T**he key expectation of modern logistics operations, whether those run by retail professionals, manufacturer or services offered by 3PLs companies etc., is that they deliver the right goods, in the right condition to the right customer at the right time. They also need to consider their own internal time and cost efficiencies, not to mention keeping an eye on their carbon footprint. The market is now so competitive and demanding that there is little room for

second-rate service provision. In this special technology report on transportation management, we look at the



**Shaun Coughlin,**  
tmWare: Cost is  
a huge driver.

current state-of-the-art in the world of solutions and services designed to help logistics professionals to stay on top of their game, and also consider the key talking points in this fast changing and mission critical arena.

### Main drivers

For Shaun Coughlin, managing director of tmWare, cost is a huge driver in the transport industry and therefore effects the decisions made within transport management solutions implementation. But what if the implementation of a transport management system could not only pay for itself with the efficiencies it brings to the business, but make the business more profitable through the added value services, attracting new business wins? "A transport company would traditionally be taking a measured risk on the implementation of a new system, shelling out a hefty upfront cost and not seeing the return for 12 to 18 months – now with web-based, pay-as-you-

go systems the monthly outgoing cost is often covered each month by the savings or increased revenue, which is a direct result of the system," he said. Coughlin added that with new technologies emerging all the time the selection of the right IT partner can enable a transport operation to be at the leading edge of technology and services offered to its customers. "For example the implementation of a Mobile POD solution can see immediate benefits through electronic signature capture, which eliminates the need for paperwork, filing and time spent searching for and faxing copies at the customer's request," commented Coughlin. "Instead the customer can access an online enquiry to obtain the information for themselves."

Bob Harbey, executive director at Microlise, believes one of the key talking points within the industry at the moment between transportation companies and leading telematics companies is the integration of tracking units into the vehicles computer system (the >>

CANbus). He points out that this integration has enabled telematics companies to get access to vehicle and driver performance information that can be used to demonstrate to a driver how their driving style is affecting fuel efficiency. "The use of this information allied with good-quality driver training can not only deliver significant fuel savings but also reduce other operating costs such as

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tyre and brake wear," he said, adding that as efficient driving is also a safer driving style, accidents and therefore insurance premiums are reduced. Moreover, Harbey explains that if a telematics system is implemented and used correctly, an operator can expect to see savings on fuel anywhere from 5 to 25 per cent. "Even the best run operation with the best drivers, when presented with vehicle and driver performance information, can squeeze an extra few per cent increase in fuel efficiency – a welcome addition to the bottom line in an industry that already works on the tightest of margins," he remarked. So why is the driver style information making such a difference? "The vehicle CANbus provides a great deal of information about driving style; everything from engine idling, use of cruise control, sweet spot driving, accelerator pedal position and the use of the exhaust brake to name but a few," Harbey explained. "These key performance indicators give a driver a clear understanding of what they need to do differently to get the best out of the truck and the best fuel economy. With the addition of a driver feedback module mounted on the dashboard of the truck the driver can also be provided with driving-style information in real time. This is a very effective way of ensuring that a safe and economic driving style is maintained at all times."

For Jon Hannah, product manager at Isotrak, one of the key current talking points is the requirement for better use of information across platforms to provide each coupled system with maximum value. He also cites another key discussion point as the provision of more automated systems that allow

transport plans and driver activity that are currently on paper to provide the business with its true level of performance and service, and allow people to concentrate on the tasks which are exceptions to be dealt with rather than "day-to-day grind". Additionally, Hannah reflects that the industry craves non-reliance on individual IT solutions to provide a business with a holistic picture of performance.

However he adds that it is not yet fully ready, due to its diversity, for the implementation of a telematics standard in business data and KPIs. And as the industry matures in IT terms,

to drive performance transparency across all of their suppliers.

Irvin Gray, marketing manager UK & Ireland, TomTom Business Solutions, comments that with a state-of-the-art telematics system, such as that offered by TomTom, the fleet manager benefits from better visibility and management of the fleet helping to meet his objectives from saving costs to reducing carbon footprint. He adds that the driver benefits from mapping and routing as well as live HD traffic to keep them moving, increase productivity and ease stress. In the case of TomTom's offerings, this is complemented by a job dispatch facility that allows jobs to be sent through complete with address of the destination, so the driver can navigate there by simply tapping the screen. Because of this, Gray points out that the need for calling round on the mobile is greatly diminished. He also explains that in the office the logging allows reports to be collated quickly, efficiently and with far fewer demands on the administrative staff. "This offers clear benefits



Hannah believes that a better understanding of the amount of time required to integrate a successful IT solution could be achieved, as well as an increase in pragmatism about how business processes need to change to get the most out of a solution. Also, Hannah maintains there is a desire among retailers

to management when adhering to legal obligations such as benefit in kind, duty of care and mileage and working hour claims," he said. "When these benefits are applied across a fleet, the reduction in costs and increase in productivity are substantial and positively affect the company's bottom line. >>

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“New requirements arise with the ‘evolution’ of transport processes – for example from cooperation, changes in supply chains and transportation networks, not only in terms of commercial but also environmental efficiency.”

– Frank Felten, PTV.

Charlie Pesti, UK key account manager at Transporeon, observes that environmental issues are now one of the key talking points for both governments and logistics professionals alike. However, he believes that to be attractive to commercial organisations a system must also deliver significant benefits in cost cutting and efficiency, as well as clearly monitor environmental costs and impact. “Never has this been more important than in the present economic climate,” said Pesti. He also points out that there is a lot of talk about possible collaborations within the transport industry.



Frank Felten, PTV: Supporting optimised transport operations.

Pesti adds that Transporeon has thought much about this but has a slightly different view about the pros and cons because it sees things from the perspective of Software as a Service (SaaS) solution provider. “Nevertheless the plain fact is that we have everything that a good collaboration needs,” he said. “We have shippers, we have carriers and most importantly we have a relevant tool to make a collaboration not only a topic to be discussed but to make it happen – to cut costs, increase efficiency and reduce environmental impact. We can provide confidentiality, we can connect different IT systems, we can see who may be potential collaborating partners, and now we can see the potential carriers for different destinations too.” Frank Felten, vice president product management & marketing, PTV, comments that process and business efficiency have always played an important role in transport management and are still key user requirements. “Any product or

solution that supports optimised transport operations is high on the list,” he said.

Nathan Pieri, SVP marketing & product management at Management Dynamics, comments that international transportation management solutions today help companies manage seafreight and airfreight costs and automate the process of quoting and preparing proposals. But most importantly, he stresses that the solutions must be able to handle the new complexities of the recent deregulation of ocean shipping. “Therefore, even in these tough times, these transportation management solutions can help companies optimise costs and allow logistics providers to better differentiate their service while improving sales effectiveness,” he said.

### The functionality debate

In terms of the systems currently available, what are some of the main functionality differentiators and other attributes that users should be aware of? Hannah cites real-time planning and execution visibility. “As integration between systems continues, the ability for plan commitments to be changed throughout the day based on real-time events (traffic, delivery issues) by using live tracking data has provided a new wave of KPI savings for customers with mature telematics >>



systems," he said. Hannah also points to telemetry information. "As CO2 and fuel saving are driving so many projects within the industry, a need to prove savings in these areas, both from a real saving and public point of view, has led more and more customers to introduce telemetry systems in-vehicle, which accurately measure not only the use of fuel (and therefore its carbon footprint) but also provide information on how drivers are performing," he explained. "This has allowed businesses to actively promote better behavior among their driver base, as the information these systems provide is available in real-time to encourage, debrief and educate staff. Software allows this information to be measured against targets and improved upon, providing real cash benefit."

Harbey believes that as the use of telematics becomes more widespread and is accepted as a 'must have' for transport operations, the focus will be on maximising the return from the investment in the technology. One area that is not being exploited, in Harbey's view, is the use of the telematics data to deliver prognostics. "Prognostics will help improve vehicle availability as it will provide the ability to evaluate and interpret one or more pieces of data to identify a failure mode before a vehicle breakdown occurs or a simple component failure turns into every expense engine or transmission failure," he said. "To enable operators to gain full advantage from prognostics however, the vehicle manufacturers will need to be more open with regards to failure mode data and provide this via the approved CANbus connections. At present the fault codes are reported on the CANbus

but are not made available to third-party telematics providers."



**Charlie Pesti, Transporeon:** Carriers and shippers need to be more flexible and more innovative than ever before.

Coughlin's view is that there is a huge difference between vendors who claim to have a web-based system and those who are truly web native. "Boasting a web-based system should be more than simply making your web applications available via the Internet using some third-party middleware," he said. "These methods are slow, inflexible



and often don't communicate in real time, giving web-based systems a bad name. A truly web-native system will focus on performance and bandwidth, and information will be available instantly as it is being written directly to the hosted database, rather than being uploaded at a given interval."

Fabrice Maquignon, CEO of Transwide, says companies looking for a TMS need to consider a vendor's innovation cycle – that is, how often new functionality is released – as well as the time, cost and effort required to implement product enhancements. Finally, he states companies must think beyond their four walls and factor in inter-enterprise capabilities, such as the ability to benchmark their transportation performance against other shippers and the ability to execute collaborative shipping processes. "TMS users are no longer just a handful of employees in the transportation department, but hundreds or even thousands of people across the enterprise and value chain executing a wide range of business processes," said Maquignon. "And that is one of the fundamental attributes and differentiators of a SaaS TMS. It is a transportation manage-

ment system with a built-in network of carriers and other trading partners."

**// Drivers must be part of the communications process, and through the help of technology we can make this happen now."**

– Charlie Pesti, Transporeon.

Gray considers that, in general, the fleet management industry has suffered from too many vendors coming into the space and then dropping out, leaving clients with an investment bill but no reliable fleet management solution. "Choosing a vendor is arguably the most important single decision taken when implementing a fleet management solution," he said. "Between the systems themselves, the use of CANbus to retrieve data from the vehicle broadly separates vendors into two bodies of thought. CANbus ultimately provides more flexibility for highly specialised applications but TomTom's off-the-shelf systems provide the solution for over 90 per cent of organisations without >>

<< the need to go down this complicated and often more costly route. This reduces integration time considerably while still offering the end user all the functionality they require." Gray added that investment in new hardware technology is also starkly different between vendors. "TomTom has pledged to constantly evolve and bring to market solutions with tangible benefits which customers value. As an example, at the end of September, TomTom introduced ecoPLUS, which plugs into the vehicle and delivers accurate for CO2 and fuel consumption information to help fleets address their targets in these two key operational areas."

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### The Software as a Service model

Taking a closer look at Software as a Service, this is undoubtedly as big a point of discussion within the world of transportation management IT systems as it is in a variety of other branches of IT. And it is not hard to understand why. As Coughlin explains, the SaaS model can provide shared costs between multiple companies, enabling sophisticated enterprise level systems, with benefits such as an Oracle database, delivered in an affordable ongoing way. "As systems are supported centrally then enhancements and new features are deployed rapidly, ensuring that the entire customer base is at the cutting edge of technology and functionality," he said, adding that, traditionally, a server based at each customer site has been costly to maintain and support and can easily become outdated technology. "The systems providers have a high support cost too, meaning that less is spent on new development," he continued. "The SaaS method enables the systems provider to allocate more resource to the development of the product due to the simplified support structure, but will also ensure that the hardware and software



versions are up to date, allowing customers to focus on their core operations."

Felten remembers that, historically, companies were required to buy, build and maintain their IT infrastructures; SaaS gives companies an alternative. For Felten, the summary benefits of the SaaS model for users include: the fact that 'deployment' of software is not needed; there are no roll-out and update issues; and the lack of upfront capital expenditure reduces the commercial risk for SaaS users. Another benefit, according to Felten, is that availability of software and data is independent of the user's current location. "Not every company will jump on the SaaS trend immediately, but we believe that SaaS and Cloud Services will be a success," he said. "The potential will be leveraged step-by-step and successful early adopters will convince followers."

Pieri sees SaaS as a business model that delivers substantial benefits over the traditional software licence and install model by aligning costs with value received, and by alleviating the bottlenecks found in most IT organisations that can hinder the initiation of a new software project. Pieri adds that since a SaaS solution is 'in production' at all times, technology providers have perfected and packaged implementation programmes to quickly configure and deploy a solution,



**Fabrice Maquignon, Transwide:** Companies must think beyond their four walls and factor in inter-enterprise capabilities.

offering a much faster time-to-

benefit than a traditional software implementation. "So, for subscribers, SaaS offers advanced functionality that can be quickly delivered with an investment profile that is aligned with value received; in summary, more ROI for less risk," he said. Moreover, Pieri comments that a SaaS business model also benefits the technology provider by creating a more predictable stream of revenue and reducing the number of software configurations that must be supported. "This provides for a higher allocation of software development dollars to new value-added features and less in maintenance and configuration management," he remarked. "It's a 'virtuous circle' of investment that delivers more advanced functionality for subscribers and ultimately leads to higher customer satisfaction, a stronger backlog, and even more resources for software development." >>

Harbey reflects that, starting with the vehicle manufacturing markets, companies were quick to see that the only way to remain competitive was to increase value-added services to commercial vehicle purchases by making the vehicle more 'economic' and adding fleet management systems as part of the truck purchase – and, as such, providing the hardware free of charge and utilising the

fuel being approximately 40 per cent of the operating cost of the average HGV. It makes sense that the more HGVs a company operates the more significant that 40 per cent is. Larger companies perhaps see more value in saving 1 to 10 per cent on these costs, and have more leverage when it comes to investing in transport management technologies in order to gain these cost

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SaaS model. He adds that the larger hauliers and third-party logistics companies were also introducing ways to reduce their operating costs through the utilisation of transport management solutions such as tracking and telematics, and using SaaS to aid more efficient and streamlined supply chains. "This enabled them to increase their bottom line and productivity whilst at the same time keep their customers on competitive rates," he said. "For these larger operators the increases in fuel prices hit them much harder and faster than the smaller operators, with

savings." Harbey also makes the point that, although market demand is now healthy – especially from the HGV sector – vendors still face the challenge of getting the 'buy in' from the smaller fleet operators who, whether they realise it or not, will need to embrace this technology if they are to remain competitive against the large hauliers that have been the early adopters.

Maquignon reports that one of the main drivers of the growth in the past four years has indeed been the change of software



**Jon Hannah, Isotrak: Retailers want to drive performance transparency across all of their suppliers.**

delivery from installed to Software as a Service (SaaS).

He considers that almost all transport management system players now claim to offer a SaaS model, but he stresses that users must dig a little deeper as regards what is behind this terminology. This, says Maquignon, is because some vendors use SaaS synonymously with 'hosting', even though significant differences exist between the two. First, Maquignon maintains the definition of the term transport management system needs to be broadened beyond software. Transportation planning and execution functionalities are the core of a TMS; it is only the tip of the iceberg of a complete solution," he said. "Indeed transportation processes are inherently network-centric, involving the exchange of information between many external parties, including carriers, suppliers, customers and logistics service providers. Establishing and maintaining connectivity with a dynamic network of trading partners is an integral component of TMS, but one that many companies forget in their evaluation of solutions. Traditional, internally-deployed TMS solutions or simply hosted solutions require companies to establish and maintain connectivity (via EDI, web portals, and other means) with an ever-changing set of trading partners."

In terms of the fundamental advantages of SaaS TMS, Maquignon homes in on the fact that it is single-instance and multi-tenant – that is, one instance of the TMS software/hardware being shared by all the shippers, carriers and other trading partners. "The software can be configured to the exact processes and needs of each client; a bit like each one of us can use iGoogle and tailor it to our needs," said Maquignon. In addition, he points to the fact that the model is pay as you go and includes service provision by Transwide. "Instead of paying a relatively large licence fee upfront companies typically pay a monthly subscription fee or transaction per transport orders, converting what was previously a capital investment into an operating expense," he said. "Additionally, because >>



<< of the architecture of the application the implementation costs are much lower with a SaaS solution." Vendors such as Transwide can also provide support to all the trading partners. "This means that when a carrier has a question he can directly turn to Transwide, so the shipper continues to focus on his logistics operations not the software operations," continued Maquignon.

## The legal perspective

Moving the debate on to legal issues, Harbey reflects that the transportation sector is under continuous pressure from the ever increasing legislation. "During the past few years the changes in Corporate Manslaughter legislation and the introduction of more rigorous VOSA roadworthiness requirements, along with even more driver certification (Driver CPC), has meant that transport companies have had to adopt technology to effectively standstill," he said. "Today in the transport sector is analogist to 20 years ago in the warehousing sector. In the early 1980s warehousing operations were almost completely paper driven, but as legislation such as 'best before' date came in, technology was the only way to remain compliant, and it's the same for today's hauliers. To guarantee compliance you need complete visibility and control of your fleet and you can only do that with technology."

Gray considers that the legal landscape hasn't necessarily changed the technology; rather it is more a case of the way organisations employ that technology. For example, he makes the point that the Corporate Manslaughter and Corporate Homicide Act 2007 brought major changes with regard to duty of care and the liability of directors. "The logs generated by telematics can be used to help demonstrate compliance on such legislation easily and efficiently, explained Gray.

"Similarly, companies use TomTom fleet management solutions for benefit in kind

records as the system allows drivers to easily distinguish between business



**Bob Harbey,**  
*Microlise:*  
Complete visibility and control through technology.



and private mileage." From a standards perspective, Felten comments that, with regard to PTV's own domain (transport route planning, tour optimisation etc.), 'integration standards' such as web services, and even lighter integration techniques such as 'mashups', have made integrated solutions a lot easier to deploy. "Adoption has grown tremendously thanks to these new standards," he said.

**//** The use of this information allied with good-quality driver training can not only deliver significant fuel savings but also reduce other operating costs such as tyre and brake wear."

– *Bob Harbey, Microlise.*

Pesti maintains that a big change came with the introduction by law of digital tachographs. "Now no driver has the opportunity to work excessive hours and no company has the opportunity to make their drivers break the regulations," he said, adding that in the UK the maximum height of trucks is now another issue. "British carriers may adhere to the same height of trucks as the rest of Europe. For some companies this will mean reorganising their transport arrangements and fleets and that may generate additional road miles in the UK. These are just some examples of ways in which carriers and shippers need to

adapt their businesses; they need to be more flexible and more innovative than ever before."

## Security and confidentiality

And what about security & confidentiality; are there any remaining concerns in this camp? Felten maintains that the answer is partly yes, and these concerns vary from country to country. "Nevertheless, industry has learned how to deal with these obstacles and a compliant and secure solution is no longer a miracle," he said. "Of course, it is an important issue that still needs to be addressed, however it does not appear to be a 'showstopper'." Coughlin's take is that security is always a concern, particularly when the customer does not have a server physically onsite. "But the security is actually higher and better than if the company had the server on their own premises when it is hosted remotely," he said. "The physical security within a data centre is far superior to anything that could be found in a transport operation, and, by its very nature, the infrastructure of the application has increased levels of security to those that would be found on an internal networked application."

## Tomorrow's roadmap

The transportation management solutions space may be constantly developing, but what are some of the key changes and >>



enhancements to keep an eye on over the medium term? Hannah's believe is that in the consumer market the capabilities of handheld user devices with integrated capabilities (phone, GPS etc.) has a firm footing. However, he also observes that the transportation management sector is starting to become aware of the possibilities such devices offer for integrating requirements into a single unit; reducing vehicle installation footprints and potentially driving standards for communication. "This will lead to less desire for bespoke systems which have a limited support life and a bigger need to use standard products," he said. Maquignon observes that innovations are driven by industry leaders who use the software everyday and the network effectively

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ends up accessing best practices on the platform, which in turn drives continuous improvement for all. "At Transwide we take comments or request from many existing clients and work on ensuring that new functionalities will cover cases across our client base," he said. "By understanding the practices employed by these leaders, solution providers can incorporate these 'best practices' into the software. This feedback mechanism links product innovation with practices proven to deliver industry-leading results."



**Irvin Gray, TomTom:** Choosing a vendor is arguably the most important single decision taken when implementing a fleet management solution.

Gray anticipates an increased focus on greener, safer driving. He maintains that more businesses will want to capitalise on the link between these focuses and cutting costs. "Solutions which can help fleets address these major issues, such as telematics, will become more commonplace and we expect adoption rates to increase significantly," said Gray. "We also expect to see an increase in complementary technology to help fleets further with their CO2 and fuel targets, just as TomTom's ecoPLUS solution is designed to do." Gray also reminds us that

TomTom has announced an ambitious plan to help keep motorists moving on the roads, called the TomTom Traffic Manifesto. Using technology such as HD Traffic, Gray points out that the aim is to make better use of the existing road network to enable journey times to be reduced for all drivers. "HD Traffic already helps TomTom subscribers save as much as 15 per cent in journey times, but if 10 per cent of all road users adopted the technology congestion delays could be reduced by 5 per cent across the entire road network," he said. "That's good for business as it will increase productivity, reduce driver stress and cut down on wasted fuel."

Pieri says many multinational companies are dealing with the economic downturn by implementing supply chain visibility and international trade compliance solutions to implement a number of strategies to get leaner such as:

- 1) Eliminating bottlenecks and reducing inventory at the port, at manufacturing sites and warehouses.
- 2) Reducing fines for holding carrier equipment too long (demurrage & detention).
- 3) Identifying opportunities to shift modes, e.g. airfreight to seafreight.
- 4) Using postponement strategies to divert inventory at an international gateway.
- 5) Becoming a self-filer to reduce the broker's cost to make an entry.
- 6) Using preferential trade agreements to lower (or eliminate) duties and total landed cost.
- 7) Rebalancing supply and fulfilment networks by determining tax efficient sourcing and distribution strategies.

"The market for global trade management solutions is gaining momentum by helping companies to implement these new cost-cutting strategies and ultimately will allow them to exit this recession stronger than ever," commented Pieri.



**Nathan Pieri, Management Dynamics:** Transportation management solutions can help companies optimise costs and allow logistics providers to better differentiate their service while improving sales effectiveness.

Pesti believes the person at the end of the chain will increasingly have to be considered and involved within the transportation management equation. He also thinks some of the planning process will move to the drivers. "Drivers must be part of the communications process, and through the help of technology we can make this happen now," he said.

**// SaaS provides for a higher allocation of software development dollars to new value-added features and less in maintenance and configuration management."**

**– Nathan Pieri, Management Dynamics.**

Harbey foresees transportation management systems vendors being under increasing pressure over the coming years to agree industry side standards so that a tracking unit from one vendor can deliver data to another vendor's system. "What will drive this requirement will be the need for transport operators to share vehicles across contracts and to sub-contract to other operators," said Harbey. According to Felten, the integration of dynamic information, such as real-time dispatching and traffic-related features, might be the next innovation to look out for over the next year or two. He adds that support for environmental transparency requirements and intermodal concepts will also play an important role. "New requirements arise with the 'evolution' of transport processes – for example from cooperation, changes in supply chains and transportation networks, not only in terms of commercial but also environmental efficiency," he said. "Transport management systems have to support these new developments and have to grow with the specific market demand." ●