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NOVEMBER 2021

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# Present and Incorrect

Another autumn, another apocalypse. They come merrily along like London buses and the logistics industry swallows hard, shakes its head and comes up with a neat solution, each shrewdly more efficient than the last.

Two autumns ago, we reeled from Brexit tensions (which remain very much with us) and China/US squabbles (so do they). Last year at this time, the world tried hopefully to navigate a path out of Covid only to find that, like the previous sleep-deprivers, it would still be very much present and incorrect a year later.

So the crises pile up. This year, as a result of a toxic combination of any and all of the above, supply chain disruption is heading news feeds and pages around the world. Energy and fuel prices climb to all-time highs, a stuck ship brings the Suez to a halt, the world's container ports can't cope, the lorries are not as full as they need to be to make the margin – Christmas is cancelled and no-one will get a turkey for dinner.

Well, I'm very smug about enjoying a very fine Christmas turkey in our house, because it's reared in the

country air on a pleasant farm just a couple of miles up the road (how's that for the new localisation?) and the only link in the supply chain is me. And I'll walk to get our turkey if I have to.

A less flippant, more relevant and expert illustration of the type of challenges we all face next year comes from my interview with Clark Europe CEO Rolf Eiten on page 44 of this issue. His concise and thought-provoking summary of the challenges: rising cost of materials, the difference in Asia-Europe container costs pre- and post-pandemic, and what the potential implications are for his business, offers a sobering insight into the cost-pressured, probably inflationary period we are now entering.

In the UK, it is becoming usual practice to attribute rising inflation to the Brexit wars egged on by a slapdash, insouciant government in the image of its prime minister. Maybe it's a fair call – his best answer to a pleading road haulage industry desperately short of drivers appears to have been to suggest paying higher salaries, as if blissfully unaware of the ultimate cost implications to end consumers. But

the UK is not alone on this. Germany, the model of good economic governance in most eyes, saw its official inflation rate rise from just over 2% back in the summer to over 4% by October. Safe-pair-of-hands Sweden may boast an enviable October 2021 rate of a paltry 2.5% but that figure is the highest in 10 years, having doubled since the summer. So it's a problem for everyone.

As ever, the logistics industry uses its ingenuity and comes up with new solutions for ever-changing problems. It always means new opportunities for some. Take the port of Tangier, for instance, which our publisher David Priestman visited for a detailed piece on page 6 and which has ambitions to transform its status as a logistics hub, alongside the port.

Technology and inventive minds will ensure that the answers keep coming. There are plenty of both in this issue. I hope you find it useful and informative

**Paul Hamblin**  
*ph@logisticsbusiness.com*  
 Editor





## Supply Chain, Distribution and Transport

- 06 Hub of the Med**  
Special report from the largest port in the Mediterranean – Tanger
- 12 Target Net Zero**  
Detailed insight into how logistics real estate is leading the Net Zero mission
- 18 Real Time Partnership**  
New project from two powerful names in the European transport sector
- 20 BIFA**  
Awards news
- 22 Adversity to Opportunity**  
How the transport industry can capitalise on the driver shortage

## IT and Logistics Software

- 24 Single Vendor Savings**  
End-to-end cloud delivery management from a single source
- 26 Digital Independence**  
Guaranteeing a good night's sleep for nervous importers
- 28 The Data Dividend**  
Business Intelligence as a Service, and the data rewards
- 30 Voice Revolution**  
Might there soon be more voice assistants than humans?

- 32 RTV Journey**  
Why Real Time Visibility is only at the start of its journey
- 34 Forensic Focus**  
We talk to Inawisdom's Neil Miles
- 36 Asset Management Gets Smarter**  
The benefits of IoT-enabled tracking

## Intralogistics, Handling and Automation

- 38 Changing the Rules**  
Key future trends and how regulations might be impacted
- 40 Faster Load and Unload**  
Automated system explained
- 42 Digital Evolution**  
A Linde expert on 2022 warehouse trends
- 44 Taking the Temperature**  
We talk to Clark Europe's Rolf Eiten
- 46 Damage Control**  
Safer forklift handling from Meijer
- 48 Planting Green Shoots**  
A Calor/Carrylift case study bringing sustainability wins
- 50 Bulky Goods Automation**  
The first fully automated solution for long goods handling
- 52 Cats and Dogs**  
Expert insight into what Machine Learning means for the layperson
- 54 500 Million Picks**  
Milestones and expansion plans for Locus Robotics

- 56 Good Works**  
TGW's David Hibbett tells us why the company has a mission to do good in the world
- 58 Single Source Solutions**  
Innovative wireless charging for AGVs and robots
- 60 Green Doors**  
Loading bay doors helping create an emissions-free site
- 62 Stacker Crane Upgrades**  
Why replacement helps mark the path to an automated warehouse
- 64 Aiming for the Stars**  
An AMR with an 8m reach unveiled
- 66 Automation Enabler**  
A UK automation expert that could be good news for ambitious SMEs
- 68 Don't Forget the Floor**  
Your warehouse floor may not be as flat as it needs to be
- 70 Collision Impact Protection**  
Warehouse safety initiatives and products revealed

## Pallets, Packaging and Printing; HR

- 72 Life Aware**  
Why workforce management tools can boost staff morale
- 74 Customs Skills Shortage**  
Lack of compliance expertise could lead to the next wave of bottlenecks
- 76 Self-Employed Soother**  
Making onboarding less painful and hassle-free
- 78 Printing Sustainability**  
How top manufacturer TSC Printronix Auto ID is addressing green opportunities and challenges
- 80 Sealed and Delivered**  
Automated packaging for the ecommerce age
- 82 Tracking Optimiser**  
How asset tracking enables more effective packaging and transport options

Unit D, Spitfire Close, Huntingdon Cambridgeshire, PE29 6XY. UK  
Tel: +44 (0)1480 455660 E-mail: [ph@logisticsbusiness.com](mailto:ph@logisticsbusiness.com)  
[www.logisticsbusiness.com](http://www.logisticsbusiness.com)

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*Magazine Editor:* Paul Hamblin  
+44 (0)1480 455660 / [ph@logisticsbusiness.com](mailto:ph@logisticsbusiness.com)  
*Publisher:* David Priestman  
+44 (0)1480 455660 / [david@logisticsbusiness.com](mailto:david@logisticsbusiness.com)  
*News Editor:* Peter Macleod  
+44 (0)1480 455660 / [peter@logisticsbusiness.com](mailto:peter@logisticsbusiness.com)  
*Sales and Production Manager:* Paul Dixon  
+44 (0)1480 455660 / [paul@logisticsbusiness.com](mailto:paul@logisticsbusiness.com)  
*Advertising Sales Manager:* Ian Wright  
+44 (0)1480 455660 / [ian@logisticsbusiness.com](mailto:ian@logisticsbusiness.com)  
*Advertising Sales:* Helen Coston  
+44 (0)1480 455660 / [helen@logisticsbusiness.com](mailto:helen@logisticsbusiness.com)  
*Finance and Marketing Manager:* Barbara Baxter  
+44 (0)1480 455660 / [barbara@logisticsbusiness.com](mailto:barbara@logisticsbusiness.com)

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# Hub of the Med

What is the biggest port in the Mediterranean? Not Marseilles. Barcelona? No. Genoa, Algeciras or Piraeus? Wrong again. It's Tangier, at the tip of Morocco, also the largest port in Africa. *David Priestman* visited to learn how and why it has achieved this status.



Ideally located at the gateway to and from the Atlantic at the conjunction of major east-west maritime routes, Tangier has always been of strategic significance. Once a jewel in imperial crowns dating back to the Phoenicians and Carthaginians, it is just 14km across the Strait of Gibraltar from Europe, a 30-minute crossing. The modern port, Tanger Med, is 40km east of the sprawling city of 1 million. Launched as a project in 2002 and opened in 2007, Tanger Med now has an impressive annual capacity of 9 million containers and 700,000 trucks per year. It connects to 186 ports in 77 countries on 5 continents.

The project, however, is about much more than just the port. The concept is of a regional, integrated platform comprising manufacturing, industry and logistics. 1100 companies are located in 6 activity zones: Logistics Free Zone, Tangier Free Zone, Automotive City, Renault Factory (largest car plant on the continent), plus 2 areas further east in Tetouan. The port itself features a dedicated car carrier terminal, 4 container terminals (three 800m quays and one 2000m quay), 3 of which

operated by APM and Eurogate, 8 berths for RoRo freight and passenger ferries, a hydrocarbon terminal, dry bulk, ample modern warehousing, railfreight connection to every terminal and a small airport. All with a spectacular backdrop of mountains and the sun-kissed sea.

I met Rachid Houari (*pictured*), Directeur General of Medhub, part of the port authority. "We're a young port, adapting to fast growth," he told me. "The port is known worldwide. We want the logistics facilities to be just as well-known." The port build and rent warehouses up to 20,000sq.m. The last year has seen a 30% increase in DC space and goods handled. Houari is confident they will hit 6 million containers handled for the first time in 2021. Before the new port the whole country handled just 1 million containers a year.

## Challenges overcome

Commenting on the challenges to shipping of Covid, pricing and bottlenecks Houari said, "customers are not happy to pay 4 times more, of course, but they mainly affect rates from the Far East. Our warehouses have stayed open during the pandemic.

Car sales fell globally but we had no loss of traffic due to the Suez Canal blockage. Some ships arrived late but they skipped other ports on their route." Car carriers ship to 35 ports, with 70% going to the EU – Renault and PSA (Peugeot Citroen) brands. There are 20 RoRo crossings daily to Algeciras in Spain, service to Barcelona and Marseilles 3 times each a week, to Genoa, Vigo and elsewhere.

Most container traffic is inbound from Asia. Tangier is the dominant hub for transshipment redistribution to Africa. I asked Houari what his goals are. "To attract more of the giant third party logistics operators. 8 of the top 25 came in the last 3 years. We want to fill Tanger Med 2 (terminals 3 and 4) and create even more employment. We're going up by 1 million containers a year." Tanger Med builds 12m high warehousing on spec, with quick construction times. They are then rented out, with the customer known before completion so that materials handling and equipment can be purchased. Shared user space is available, with each warehouse able to be split into 4 sections.





What makes Tanger Med even more impressive is the intermodal connectivity in close proximity. For example, Renault operate 6 trains per day to the port, PSA 2, plus 2 more for hydrocarbons. Container railfreight is not as popular because most domestic cargo goes back out by road or on feeder services to Agadir and Casablanca. There are initiatives on digitization and going paperless at the port. Automotive products comprise about half of port cargoes. Retail consumer goods, textiles and agriculture make up most of the rest. The port authority leave recruitment to the 3PLs but provide security and safety services and training for dangerous cargo, fire and accidents.

### Strong reference

Sebastien Roger is the MD of Gefco Morocco, based in Casablanca. He has been with the company for 17 years and has the mission of improving the organisation and processes while developing his staff in Morocco to the

point where Gefco no longer need to import expensive European managers. I asked him why the company had invested in Tangier. "It's a gateway with international flows. We've gone from 3 warehouses here to 1 dedicated DC since last December. This enables us to better control our operations." (see *image below, left*) Receiving freight from 110 PSA suppliers globally (such as Valeo), Gefco handles and forwards full pallets and small parts to car factories locally and in Europe. Everything from screws to engines. Services offered include customs advice, transdocking, quality control inspection/validation prior to assembly (for example of steering wheels) and just-in-time delivery via EDI. Gefco encourages switching packaging from cardboard to reusable plastic, like the Gefbox, to avoid one-way waste and is maximising recycling, compacting and the return of empties.

Roger explained that Gefco Morocco are also strong in the aeronautics, construction and healthcare sectors.

"We use all modes. 740 trailers, 150 trucks in our own fleet and we manage sea and air freight. Gefco uses railfreight to bring in parts as well as to move finished vehicles back to the port, with some like the new Citroen Ami going by road from Kenitra (near Rabat) as that is more suitable. Our VIP service is for industrial project cargo. The more complicated, the better!"

There are 60 staff in Tangier, 200 in the country. All but 4 are Moroccan. What of his plans? "We want to diversify in the industrial sector. That's our strength, our knowledge-base. We also have a role to play in the economic development of Morocco. The country has all the potential and advantages necessary, logistics is essential. It's the place to be, a best-in-class tool, quite obviously."

### Sporting shed

The Logistics zone right at the port, just 1k from the ships, has a familiar roster of other occupants: Dachser, XPO, DHL, Omsan and more. There are 15 local Moroccan logistics companies too in this ecosystem, encouraged by Tanger Med. Specialise temperature-controlled 3PL FrioPuerto has 6000 sq.m with 6000 pallet locations here and tranships food regionally. More available space for warehousing is coming next summer, but the mountain sets boundary limits. It is a large free zone and 20km away there is ample further land to develop.

French sports retailer Decathlon started with 7000sq.m of warehousing at Tanger Med. This has now been expanded to 20,000sq.m. (see *image below, right*) The port authority left





space for an anticipated extension. Unusually, Decathlon normally operate their logistics in-house. In Tangier, however, they contracted out to a large team of staff who are managed by experienced Decathlon managers from France, so that practices can mirror those in European DCs. They handle ecommerce from this facility, with 600 national deliveries a day of picked goods. 'Chaos storage' methods, where pickers can put incoming goods away anywhere is practised for speed, with RFID and the WMS facilitating location. Environmentally the company use LED lighting and are adding solar roof panels.

### Case studies

CEVA Logistics, part of CMA CGM since 2019, has an ambition of being in the top 5 3PLs globally. Thanks to taking over CMA's logistics operations and local acquisitions CEVA is now present in 40 African countries, offering end-to-end freight forwarding, customs clearance, project handling and contract logistics with a new 4500sq.m warehouse in Tangier (pictured) ready to fill. I spoke to Hakim Hadji, MD for north and west Africa. "Morocco and South Africa are the 2 main locations for HQs in the continent," he states. "Tangier is impressive and changing. It's a necessity to be here, with the reliable freezone advantages given our strength in automotive, as well as aeronautics and consumer goods. We're taking a strategic corridor approach and are on-boarding customers."

One of the company's 6 regions incorporates Africa with India and the Middle East, including Turkey. "CEVA is very successful in Turkey. We have expertise there, particularly in IT. We embrace technology and through our warehouse management system our customers have stock quantities for each SKU and movement at their fingertips." A WMS team from Turkey were on site when I visited. Less-than-load (LTL) freight from Europe is consolidated by CEVA. "We have 10 trailers a week from Paris via Spain to here then Casablanca," Hadji added. "Tangier is an advanced hub. It's quick to ship to the USA, just 15 days,

there's a big trucking market here, plus ocean freight across west Africa. For railcargo we offer a 'silk road' service from southern Europe to Morocco. The transit times and costs are very interesting. We're fully-booked each month."

I asked him about recruitment and plans. "We're attracting talent for contract solutions, employing 90 in the country, 1300 across the continent. We've just started here, growing capacity and developing air, sea and ecommerce services to Nigeria, Algeria and Ghana." Airfreight of perishables is a challenge given the current lack of passenger jet belly capacity. Compliance is guaranteed, he says, unlike a rival I could name. Green logistics is a global concern too. "We have developed a robust and exciting corporate social responsibility plan for 2022 that includes eco-friendly packaging awareness and carbon neutral initiatives that are sustainable and will make a positive impact to people and our planet. Watch this space. We look for green solutions like rail. It's a board-level topic. We have no choice."

This issue's front cover image was taken in one of the new warehouses of Emirates Logistics in the automotive city near Tangier. The company is part of the Sharaf Group of the U.A.E., a conglomerate that includes a shipping line. Genial Director General Frederic Ricci told me that this international



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port presence gives his 3PL firm an advantage in brokerage and profile. It specialises in storing goods in advance before distribution of products including clothing, food and automotive parts, with 10 major customers here, such as Adidas. One warehouse is for components, another for finished goods which are delivered to the Renault and PSA factories or by RoRo to Spain and France. Emirates transport exports to Algeria (by sea due to the closed land border).

“Tanger Med is as good as Jebel Ali (Dubai) in terms of the quality of service,” Ricci informed me. “Local support from the port authority and TAC helps with setting-up new customers. The infrastructure is good, with a 2-day offloading of vessels. We don’t use automation in our warehouses due to labour costs here and an ROI of say 20 years for a conveying system. But we’re launching a RFID system for accuracy and local labelling. We operate non-standardised pick and pack by box or piece 24/7.”

Emirates uses WMS provided by Savoye. “They provide good support for us, in French,” key when JIT is a contractual commitment. Unlike many logistics service providers in Tangier Emirates Logistics fully-owns its assets. This differentiates them and shows long-term commitment. They have just won a project with Aptiv (formerly Delphi Automotive). “Cost is key here,” Ricci concluded, “we invest in young talent because they make the difference in efficiency.”

### Freezone support

As well as the logistics freezone at the port there is an industrial freezone situated next to the main airport. This land is owned by Tanger Med and there are a wide range of international businesses here, including FMCG and aeronautics. As with all the freezones here, companies pay no corporation tax for the first 5 years, zero VAT, nil customs duties. Historically textiles were the largest business sector in Tangier. Now it is diverse, even including financial services and call

centres. The sales pitch for locating in Tangier is: ‘Best cost for FDI, not low cost.’

The Port of Poole, in Dorset, UK, has a new, weekly direct shipping route from Tangier, operated by United Seaways. Largely comprising the transportation of dry and refrigerated freight using a RoPax service (accompanied cargo), the link cuts overall journey times on goods to and from the UK to fewer than three days, compared to more than six days via road. In planning for 2 years, it will be used to encourage British importers to source fresh produce and other products directly from Africa, and export companies looking to enhance their southbound trade to Morocco and the surrounding region.

By 2030 Tangier is forecast to have a larger economy than Casablanca. Tanger Med’s key role in this is due to the integrated nature of the project. Companies can invest not only to produce, but export too. The goal is to make it flow. A digitization initiative, to get admin processes like permits and formations online, is underway. The rental income, freehold land sales, fees as well as the 90,000 skilled jobs created makes this a win-win for Morocco too. With 20% of world goods trade flowing past Tangier the potential is high.

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# Target Net Zero

Warehousing investors, developers, constructors and occupiers alike are united in their commitment to carbon reductions, with widespread acceptance that 'net zero' should not be taken in isolation. *Paul Hamblin* takes the sector temperature.

"I would not separate net zero on its own, it's part of a holistic strategy, a wider attention paid to ESG ethos going back several years," reflects *Simon Cox*, First Vice President, Head of Sustainability at real estate behemoth Prologis UK. "It's about how you do things better to move forward, to change the game. When you focus on carbon reduction in building, considering the whole life of the building, and in the operational phase as well, you start to create gains that then will happen automatically." He cites DC10 at Prologis Apex Park, a project in Daventry, as an example.

The UK construction industry's flagship BREEAM certification scheme, which rates new buildings according to their sustainability credentials, was founded

as long ago as 1990 and has become a key benchmark for warehouse developers. Any new building not able to demonstrate a strong BREEAM rating is unlikely to attract the interest of either investors or potential occupiers. This knowledge has focused the minds of developers for several years. Add that to the Environmental, Social and Governance (ESG) factors that matter to investors and potential occupiers in the sector and you have a recipe for innovation and best practice in the net zero arena.

"People have talked about increasing ESG credentials for years, and in my view, the developers have been really good at it," confirms *Jack Farmer*, Senior Director, Industrial & Logistics Capital Markets at CBRE. His colleague *Jonathan Compton* agrees: "It's become a given that the buildings we've developed, let and sold, will have the right BREEAM rating and the EPC's (*Energy Performance Certificates*) are all A's."



*Simon Cox, First Vice President, Head of Sustainability at real estate behemoth Prologis UK*

## Accelerated Pace

Net zero has become a more vital part of the discussion than it was a year ago.

"It feels like in the past nine months or so, there has been a marked uptake in sentiment around it," says *Jack Farmer*. "There are a lot of people trying to buy logistics properties, but where existing buildings are being traded, the EPC's are being analysed, not just to the extent of improving F and G ratings, but looking to improve even an existing B rating. We've actually seen some transactions falter because the rating hasn't been good enough."

This is a clear departure, he adds. "In the past, when there were environmental, or tenant credit or location issues, people tended to just want to buy, not allowing impediments to get in the way. But what we've seen this year, even in very competitive bidding processes, is that a less attractive ESG and carbon-neutral factor has put people off."



*Jack Farmer, Senior Director, Industrial & Logistics Capital Markets at CBRE*





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CBRE's Jonathan Compton

### Demand and Yields

This commitment starts at the top, with the investors. “Even institutional money, required to spend the capital that it has, is somewhat less likely to spend it on buildings that don’t meet the criteria,” says Farmer. “That’s been a massive change. Looking forward, we are seeing investors wanting to add ESG accreditation to a building to improve it, or to develop a fund of sustainable buildings. That is now starting to happen and investors are buying with that mandate in mind.”

This effectively limits the buildings available to buy, which is restrictive at a time when battles to secure warehouse space are fierce. It’s not limited to the investors. “It’s not just one-way traffic,” confirms Farmer. “The contracts and the occupiers are demanding that ESG is improved or has strong credentials. The bar is pretty high.”

Investment vehicles such as green bonds can provide significant impetus, which also helps the warehouse refit sector. “We have used green bonds as a mechanism to raise capital against our portfolio, and we have secured preferential rates as a result,” states Simon Cox. “The good news about a lot of the green bond frameworks is that the money raised is reinvested in the portfolio to make it even more sustainable.”

Rental increases are not necessarily following. “We haven’t seen rental increases being tangibly higher as a result of one warehouse being net carbon compared to another,” says Compton. In fact, a reverse logic applies. “I don’t think anyone is going to pay a premium for a very

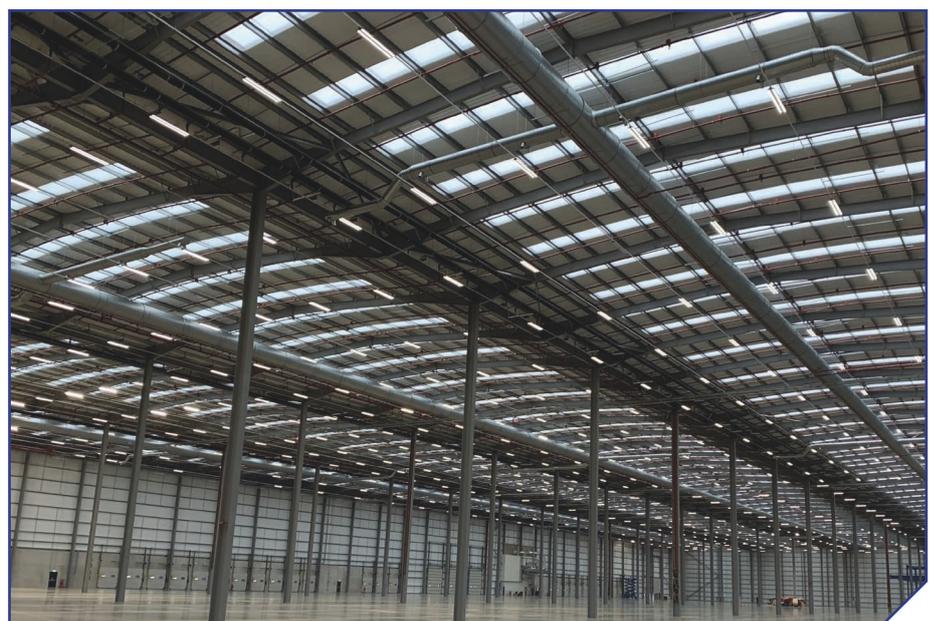
ESG-specific building – I just think they are less likely to buy one with no credentials,” remarks Jack Farmer. “The effect of not having carbon-neutral, ESG factors can harm the liquidity. So, in that sense, it does increase the value to have those characteristics.”

There are, though, rental wins potentially available at logistics facilities able to offer tangential carbon benefits via multimodal access. Compton cites the value of rail connectivity: “While rail has always been a nice to have, it’s never been tangibly proven that the rent payable on that warehouse would be higher than a similar one built nearby with good motorway access. But in just the last few months we’re starting to see the first few deals come through where there is a little rental uplift because it does benefit from rail.”

### Constructors and Supply Chain

Currently net carbon zero has not affected construction costs. There are no wins involved in opting to cut corners and choosing not to integrate net zero features, because not having them will result in longer void periods and longer vacancies. “Developers are taking the position that they do not want to be looking for excuses why the building has not let,” says Farmer. “You’ve got to have the right building for the occupier.”

For constructors, the UKGBC and the BRE are setting down formal guidelines, due in 2022. More focus on carbon reduction, rather than straight mitigation via offsetting, can be expected. Offsetting, usually via planting, will remain hugely important. Expect to see more green spaces and



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biodiversity around large warehouses than you may have seen in the past. The developers of the Magnitude site at Milton Keynes planted over 30,000 trees as part of their offsetting programme, for instance.

There is an important role to play for constructors, too, with the required engagement of their own supply chain. “Over the past two years, we have run over 50 sustainability workshops and innovation forums to align the supply chain to meet the criteria of, firstly, reducing their own carbon footprint and then reducing their embodied carbon in what they install on our behalf,” says Tim Reeve, Technical Director of Winvic, the UK warehouse constructor.

Operational improvements during construction to benefit the carbon factor are also vital. “We are now changing how we set up site,” states his colleague Arun Thaneja, Technical Manager. “That means reducing red diesel, so using a lot of battery back up, PV on our cabins, green energy tariff deals, green diesel deals – there is a premium to be paid but it returns a positive impact on the embodied carbon delivered in the units. We’re also engaged in trials. For instance, cranes and diggers can’t use green diesel because it can damage engines, so we’re looking at compromises – do we trade red diesel for white diesel, then use green on the elements where it can be effective?”

Contractors such as Winvic now have to invest much more time in calculation and monitoring of site management. “Previously, when it came to site operations we would hand over to the site team for them to deliver,” explains Thaneja. “Now, we are involved to the end in making sure that what we’ve calculated at design stage in terms of embodied carbon is actually met throughout all processes. Because at the end we would be contractually bound to offset the residual value – and that offsetting comes at a big premium, with the cost of credits rising fast.”

### Construction Technology

Technology has a role to play in warehouse construction with reference to carbon footprint, principally in the form of composite materials. “The recycled content in our steelwork has risen from under 10.6% last year up to 22.6% at this moment, and that uplift comes from the work with our supply chain,” says Thaneja.

Concrete additives, and looking at ways to reduce embodied carbon within it, are another option. “Concrete yards are very hungry on carbon, so we are looking at asphalt as an alternative,” reports Reeve. “We can offer 96% recycled content on aluminium frames and windows from a supply chain partner. As a contractor, we’re now looking at contributing to 26-27% reduction in the total carbon value before the client then has to offset the residual. Those are big numbers on million square foot sheds.”



Fears that recycled content of vital structural area might impair quality and safety should be discounted, says Thaneja. “Quality and integrity are still rigorously checked and the structural analysis process has not changed.”

### Carbon Reduction Features

Inside the warehouse, optimising for net zero will depend in large part on the occupier and what they are using the warehouse for. Renewable energy has a huge role to play, for instance via solar power harnessed from roof panels. Low energy LED lighting, sequenced to operate only when necessary, is likely.

Rainwater harvesting irrigates green areas and is used in cleaning and sanitation. Adding mezzanine floors in overhead space above racking reduces the physical footprint and spreads the energy spend more effectively. Insulation can be improved, particularly with high-quality sealing doors at loading docks and other entrance points. Brise-soleil shading features can deflect sunlight at windows and reduce heat gain.

Forklift trucks and other warehouse vehicles are increasingly powered by battery, even for heavier-duty workloads. Automation and conveying systems are increasingly energy efficient.

### The Refurbishment Sector

Retrofit projects to reduce carbon are attractive because investors are more than willing to support them. “An example of the way the investment market has shifted is that it is looking for ethical investments and is very happy to support those sorts of programs,” points out Simon Cox.



Such refurbishments and refits can be effective at surprisingly low cost. An EPC rating might be upgraded to a B, acceptable to investment institutions, simply by, for instance, taking out one hot-air blower from the warehouse or by attaching thermostats to the radiators at a cost of perhaps £5,000. Jack Farmer warns that it would however be easy to wreck that status with a couple of bad decisions.

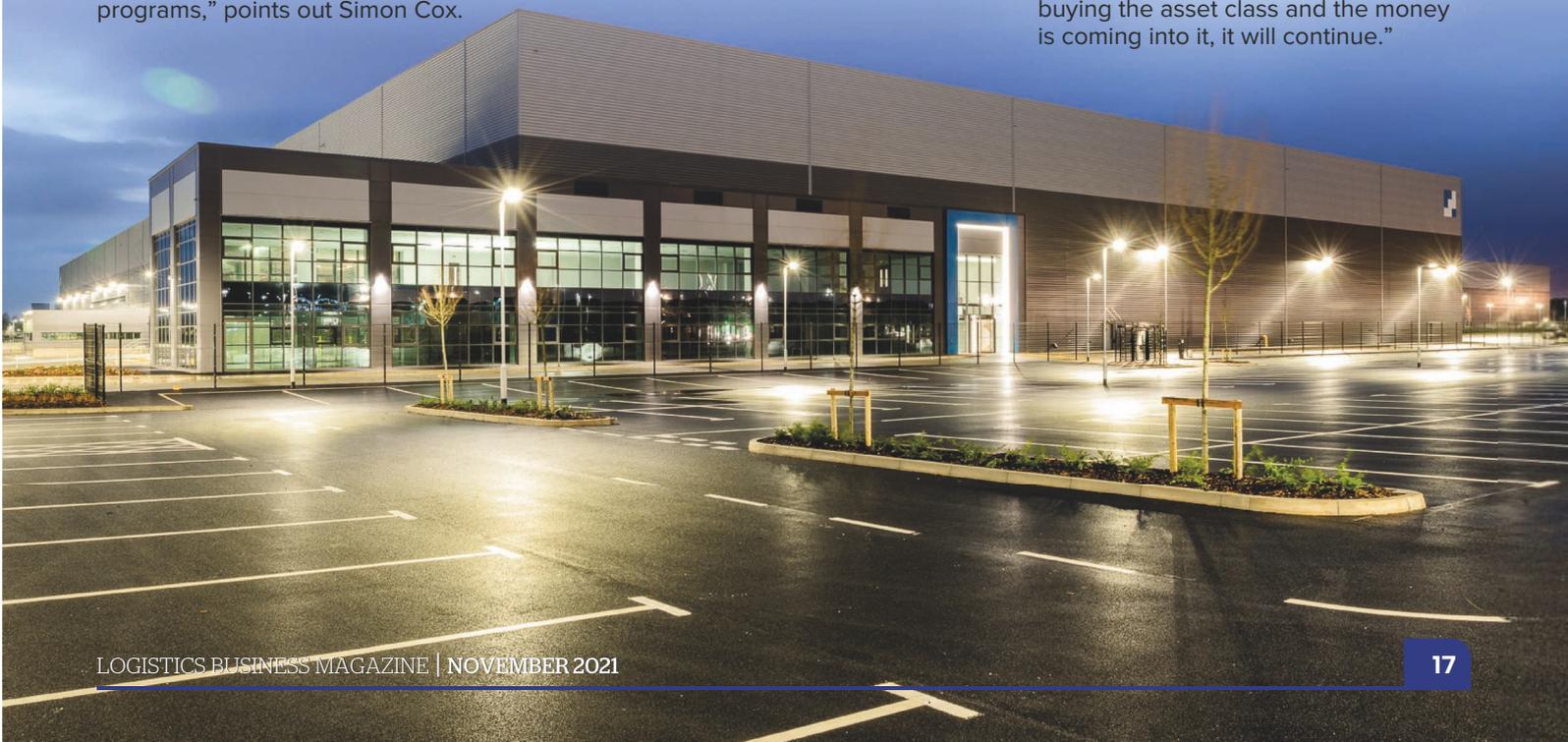
### Future Thinking

Future needs, both short and long-term, are also now front of mind for leaders in the warehousing sector. In the search for urban logistics competitiveness autonomous electric vehicles delivering direct to doorsteps are set to play a significant role. For warehouse developers and investors, that means more sites with the potential to park large fleets without detriment to the physical footprint or the carbon bill.

Biodiversity is another key area, with both national and local authorities set to demand improved ratios. As developers look for options to offset, nature reserves and ponds or leisure facilities may become a welcome part of the warehouse landscape.

The UK warehousing and logistics sector is not alone in pursuing this agenda - European countries, particularly the Nordics and Germany, are moving at a similar pace. “The big investors are global, they’re not UK specific, so the same criteria will likely apply globally to their requirements,” Compton points out.

As it stands, about 20% of buildings being completed in the UK sector are claimed by developers as net zero. Jack Farmer concludes, “At its core, the investment market is behind carbon reduction and as long as that continues, the push towards it will be much quicker. So as long as people are buying the asset class and the money is coming into it, it will continue.”



# Real Time Partnership

A new partnership between two powerful names in the European transport sector aims to raise the bar in Real Time Transport Visibility. *Paul Hamblin* reports.

The setting has become a familiar one: the impact of Covid, disruptions to manufacturing in China and elsewhere rippling through global supply chains. The backlogging of cargo at major container ports, a 'Black Swan' event with the closure of the Suez Canal, increasing truck driver shortages, most visibly obvious in recent months in the UK, but nevertheless an emerging issue elsewhere in Europe. It has led to supply bottlenecks, a struggle to find carriers - and, inevitably, higher prices.

Against this grim backdrop, end-to-end supply chain visibility offers serious advantages. It helps companies to reduce risks and costs, it allows better alignment of supply with demand, it increases the speed and agility to respond to external events. It aids integrated business planning and reduces penalties and disputes.

In recognition of the opportunity this provides to hard-pressed transport businesses, integrated Italian mobility specialist Telepass – a holding company that offers over 25 mobility services to both individuals and companies and is a European leader as a tolling services provider – has teamed up with Tesisquare, the Italian-founded supply chain software specialist recently named a Notable Vendor in the 2021 Gartner Europe Context: 'Magic Quadrant for Transportation

Management Systems' and Challenger in the 2021 Gartner Magic Quadrant for Multienterprise Supply Chain Business Networks.

The partners pack a powerful punch. Telepass operates in 14 countries with over seven million clients across its products, with 850,000 trucks using its technology. Tesisquare has over 200 international clients in over 40 countries, connecting a network of 60,000 companies. Founded in 1995, its stated aim is to be a leading partner for its clients in building a digital supply chain ecosystem.

It works like this: Telepass's Kmaster telematics platform will be the base for a 360-degree solution for real-time transport digitalisation. Via a single device, customers will be able to manage European toll payments and an increased range of value-added services, such as mission monitoring, chrono data analysis and real time visibility amongst others. It will allow real time fleet management, including monitoring of driving time (plus rest hours), fuel consumption, traffic information, as well as communicating with drivers and assigning them with new tasks (via instant messaging). Tachograph data can be remotely downloaded. This data will enrich the information included in the Tesisquare Platform to perform the RTTV solution

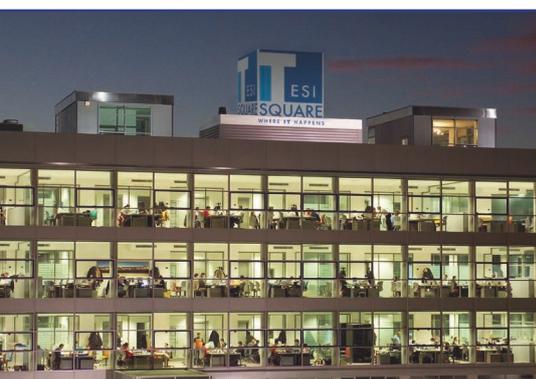
for transportation logistics, offering full access to real-time visibility for all the clients and taking quick decisions to respond to external events. Further optional additions made available by the scalability of the partnership and increased IoT capability will include features like the monitoring of trailer temperature and the doors' opening/closing alarms.

This partnership opens up new opportunities for both shippers and carriers: by benefitting from KMaster's value-added services. Carriers will access real-time information including a truck's Estimated Time of Arrival. Customers willing to activate KMaster's services can easily get them through Telepass's sales partners, according to Telepass B2B selling proposition.

Meanwhile, shippers can take advantage of this partnership by getting information within the Tesisquare Platform integrated via API with KMaster. Hence, shippers can track goods movement in real time, thus preventing disruptive events and potential risks.

For companies in time-pressured industries, the integration between Tesisquare and Telepass allow them to take control of all processes using Control Tower functionalities, and make quicker decisions. Tesisquare Chief Product Officer Gianluca Giaccardi says that groundbreaking flexible Control Tower functionalities offer autonomy and choice to the customer according to their own priorities. Each user can set its own KPI and metrics, comparisons and benchmarks. "Proactive analytics allow the user to set a configured alert system that will provide, in case of discrepancy with the target and objectives, automatic notifications or can activate articulated processes based on workflow," he says. It's important to add that user-friendly characteristics allow each customer to operate the systems in ease and comfort. Machine-learning applications are on the roadmap to automate analytical model building. The engine will allow prediction of forecasts based on factual historical data clustered on specific chosen attributes.

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# Going the Extra Mile

Pencoed-based United Worldwide Logistics places customer service front and centre. Its efforts were recognised with the 2020 BIFA Extra Mile Award.

United Worldwide Logistics (UWL) began working with a local company specialising in cladding for buildings in October 2019. Initially, this involved transport within the UK, but UWL's investment in specialist MOFFETT truck-mounted forklift vehicles, an on-site shunter and a dedicated customer care team led to further work in Europe.

"Our customer had spent a great deal of time and money creating product for a project in Sweden," said UWL managing director Michael Mitchell. "Due to the delicacy of the product, previous suppliers had caused extensive damage to the goods during transit and our customer lost the contract. It spent months working on regaining the contract and when this finally paid off, it asked us for assistance."

## Delicate operation

The interlocking cladding panels, which measured between 6m and 13m in length, had to be handled with care as the slightest knock could bend or dent them, rendering the interlocking mechanisms unfit for purpose, Michael explained.

UWL worked with the customer to redesign the packaging, replacing wood with polystyrene foam to allow for more compression without damage.



"We used foam backed with cardboard underneath the straps with cornices over those to ensure the goods underneath were not damaged by the securing processes and roof straps," Michael said.

The new packaging solution also occupied less space, reducing the cost of transport.

Up to 10 loads of panels left the UK each day from Immingham direct into Gothenburg, and on to the delivery site via both rail and direct trucking.

During 2020, Covid restrictions prevented the cladding manufacturer overseeing delivery at the Swedish site. "We arranged for our ALLMI-registered person to follow the vehicles out to Jarbo at our cost to provide that extra-mile service for our customer.

"As a result of us going that one step further, our relationship with our customer has strengthened massively. We have been rewarded with further work, including a vast storage agreement, with finished goods to be held at our Pencoed facility, and the loading of their containers being handled by our experienced team," Michael said.

"Partnerships and longstanding relationships with our customers have kept us in business throughout the pandemic and allowed us to grow our team in the first half of 2021."

## Supplier Relationships

UWL also nurtures relationships with its suppliers. During the pandemic, for instance, the company brought payment dates forward where possible. "We kept as regular a flow of work to our suppliers as we could and as much as we supported them, they supported us," Michael said.

As for what motivates employees at family-run UWL to go the extra mile, he commented: "Our staff truly enjoy coming to work. It is not your typical nine to five and neither would any of us want it to be.

"UWL has thankfully kept its family values throughout our expansion and as the years go by, and more people come into the team, we ensure that we are all striving for the same success, with customer service always at the heart of everything we do."

## Three other companies made the final shortlist

KERRY  
LOGISTICS



The BIFA Freight Service Awards competition has been running for 32 years and is open to all full trading and probationary members of the UK trade association for freight forwarding companies. The Awards comprise eight main categories, plus

Young Freight Forwarder (YFF) and Apprentice of the Year (AOTY) categories. The event has long been sponsored by eminent companies, and is recognised as one of the most prestigious in the industry. <https://awards.bifa.org/awards>

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# Adversity to Opportunity

With the current HGV driver shortage front page news, everyone is realising how critical commercial vehicles are to the success of UK PLC. *Grahame Neagus* offers a personal view of what this means for the sector and how it can inspire the next generation.



*Grahame Neagus is Head of LCV, Renault Trucks UK & Ireland*

Booming and seriously understaffed, the logistics sector is in the middle of a perfect storm. Empty supermarket shelves, fuel pumps running dry – the long-standing driver shortage is now starting to bite, as virtually everything we eat, drink, wear or use is safely delivered by a commercial vehicle, operated, driven and maintained by highly trained people.

A combination of COVID, Brexit, challenging working conditions and unrelenting schedules has caused today's acute problem. Add poor public perception, blaming commercial vehicles for pollution, potholes and pile ups, and it's easy to see why there's a shortage across the industry.

As a commercial vehicle manufacturer with a dealer network dedicated to supporting the industry, Renault Trucks has long been aware of the challenges. It's why we launched our #ProudProfessionals campaign in back 2017 to shine a light on the skilled people across the sector, stop them being taken for granted and inspire the next generation to join the industry.

Soaring wages and golden hellos have put the current media spotlight on professional drivers, while some may

question how sustainable this is for an industry that runs on extremely tight margins. However, for many drivers this isn't just a job, it's a lifestyle that requires long periods away from home and irregular, unsociable hours. It's expensive to qualify, it's highly regulated and it's demanding. But there are some things that high wages alone can't buy, like being valued and respected in your profession and being supported in your work with nationwide access to clean facilities, good food and more secure parking.

And it's more than just recruiting drivers. If we are to continue to attract and retain good people from all backgrounds into transport and logistics, we need change. As an industry, we need to do more to educate the public about the vital work we do, to ensure better treatment for drivers on the road and throughout the supply chain.

We need to attract more young people and more women into the industry, as drivers, technicians and managers. And for this to happen, we need a much more positive image for our industry projected by those who are making a success of it today.

For me, it starts here. Generating the grassroots support that is necessary to strengthen and grow our industry in the future. With a wide spectrum of jobs, driven by fast-moving technology, engineering and design, we need teachers and parents to encourage young people to consider transport and logistics as a rewarding career choice. Renault Trucks, part of the Volvo Group, has partnered with the Women's Engineering Society (WES), which works to support and inspire women to achieve as engineers, scientists and as leaders. Our own Renault Trucks Academy and Apprenticeship Programme give people the skills to learn, develop and excel in their career, while they earn.

Government also needs to step up, improving the UK infrastructure to provide better amenities across the country and create a fair and competitive transport sector that is given the respect it deserves.

Transport is changing; vehicle manufacturers like Renault Trucks are answering today's urgent need to improve air quality and reduce noise pollution in our cities with new, sustainable solutions, which chimes with Gen Z's societal concerns. For many younger people, how their products are delivered is as important as when, which in turn makes driving electric vehicles more appealing.

As an industry we work together and we are effecting change. From adversity to opportunity: it's up to us to get the message out there for #ProudProfessionals today – and tomorrow.

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# Single Vendor Savings

End-to-end cloud delivery management from a single vendor can add up to big savings for both retailers and logistics providers.

*Paul Hamblin* meets an ambitious name in the sector.

The profile of Delivery Management has risen strongly with the concurrent rise of ecommerce. It's not a coincidence. Ecommerce consumers have been conditioned to expect excellent service and communication, and delivery management technology has an essential contribution to make in providing those must-haves. Returns Management solutions are an equally important part of the ecommerce mix, especially for fashion retailers.

Add these needs to the 'historical' role of delivery management - in maximising carrier choice and optimisation for logistics decision-makers – and it's not hard to see why end-to-end delivery management options are climbing up the shopping lists of retailers and logistics providers. They save time, they save money, they boost visibility.

Formed from the recent merger of major Nordics players Consignor and Unifaun, nShift has now set out its stall as a global leader in the space. Further acquisitions of related businesses Returnado and Webshipper have added to its armoury of solutions. The aim is to provide a true end-to-end single vendor solution in cloud delivery management.

Gary Carlile, SVP Global Strategic for nShift, explains the logic: "We have a suite of products to service customers even better, by bringing together the best aspects of all of those products. Each individual legacy business is the best at something – they might have the best UI (user interface), the best carrier connectivity, the best checkout process,

for instance. So we've taken the best of everything and with the nShift product suite, we are the only vendor with true end-to-end solution wholly owned as a single entity, without third-party bolt-on products."

The aim is two-fold – to provide best-in-class, single-source solutions, but also to offer global coverage. "We have offices in 11 European countries, but we have a true global footprint to support globally-ambitious brands with unparalleled efficiency and visibility," he points out.

The figures back him up, with 95,000 customers currently serviced in 190 countries by 800+ carriers.

"Many firms are used to working with just one carrier, but as they go global, they need more connectivity," he goes on. "We automate that process for them from end to end, whether parcel, postal or pallet carrier. This applies not just to ecommerce but to all logistics needs. So, by using us, a customer doesn't need to take valuable time updating the availability of its carrier products and services, because we do it all for them. If you're using 20 different carriers globally, that's a lot of resource you would otherwise need."

The wins are significant. Customers are able to reduce carrier spend by moving volume to more efficient lanes. Cost savings of 7% on carrier tariffs have been recorded by nShift customers, he says. When you're dealing in millions, that's a lot of money saved.



The end-to-end suite in terms of retailers starts as early checkout, moving through real time delivery options to book and print capability to carrier integrations optimising warehouse operations. Then there are the returns now taking up a bigger chunk of the fulfilment landscape.

"The processing of actual orders, via a retailer's own warehouse, or via a 3PL, producing the right label at the right time to integrate with various individual carrier systems, brings huge efficiency gains," he says. Speed is front and centre. "We target 500 milliseconds per transaction print, so by the time the WMS is requesting and submitting a request to our platform, we are returning it."

Automated warehouse processes improve the conversation with the customer. "By being proactive with the tracking portal our customers have reduced WISMO ('Where Is My Order') support calls by 60%; by sharing the tracking portal with their consumer or receiver via a branded portal, your inbound dependency is correspondingly reduced."

Of course, the final arbiter is usually our old favourite, the bottom line. "Our recent customer studies have shown that 70% see full ROI in year one," he reports. "The consolidation available from a single vendor means that the numbers can be achieved far more quickly."

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# Digital Independence

As supply chain disruptions continue to dominate news headlines, a noted inbound supply chain software specialist is making sure that nervous importers are guaranteed a good night's sleep. *Paul Hamblin* meets Setlog.

In the logistics industry, much of the noise around Digital Integration and Real-time Visibility (RTV) software and their ability to improve both service and efficiencies has been focused on the last-mile sector, on the journey of goods around a warehouse and then out to the end consumer. Indeed, end-consumer comfort with the technology is a key component of its *raison d'être*.

But what about the much longer, more complex and decidedly uncertain route taken by the goods before they even arrive at the warehouse? In other words, their journey from a producer or supplier in Asia or Africa to, say, their European-based importer? In a world where disruption has been perhaps the most common word in the global supply chain lexicon over the past 24 months – and with no likelihood of unexpected disruptions ceasing any time soon – importers will be happy to hear about a software provider able to offer solutions aimed at full collaboration and visibility of the total inbound supply chain.

Founded 20 years ago, now with offices in New York and Bochum (Germany) serving over 150 customers and brands, Setlog offers a digital ecosystem in which every stakeholder in the supply chain takes part. It includes the importer's WMS and ERP and all constituent parts, plus suppliers, factories, forwarders, laboratories, buying offices, warehouses and quality control mechanisms, all linked to a common, easy-to-use, 100% integrated

and visible gateway that enables all parties at all locations to see all data and all workflows at all relevant times. And all managed by easy-to-use, downloadable software.

It's called Online Supply Chain Accelerator, or OSCA. "Data silos are everywhere, and they are killing businesses," Guido Brackelsberg, Setlog co-founder and MD Sales, tells me. "Those businesses need shorter lead times. It's driven by the Amazons of this world and it's leading to more decentralised supply chains that are not optimally connected. To achieve the agility they need, our view is that businesses need digital independence, a digital core to manage sourcing, procurement and their global logistics processes. It's why we focus on API integration and better movement of data. Collaboration of inbound supply chains is going to be a must for everyone, whether you are in fashion or frying pans."

The obvious immediate benefit is faster lead times – 2-4 months, rather than the 8-12 months of a traditional or not fully integrated supply chain. Put that win against an autumn of doom-laden headlines about global shortages, blocked ports and stranded container ships and you have a story to make a Setlog target customer sit up and take notice.

"Let's not even talk about how bad it is out there," agrees Guido Brackelsberg. "The benefit we offer

against this backdrop is security, reassurance. You have a much better grip on your supply chain because your supplier is sharing all of his/her information. Our customers say to us: 'I can sleep at night now, because of OSCA. If something goes wrong in my supply chain outside my control – and I know it's going to – I can alleviate the pain. I can act, rather than react.'"

Clearly it is a highly intricate network, but for the core user it is easy to operate via the software. "That's what 20 years of experience gives us," says Brackelsberg. "Knowing what a warehouse worker in Bangladesh is confident about operating intuitively in the same way as counterparts around the world. Everyone sees the same screens."

A SaaS business model, Setlog is migrating OSCA to a platform approach so a supplier will only need to be added to the ecosystem once. That same supplier might work with five different customers with five different workflows. In each case, full end-to-end visibility with integrated API and data analytics are promised, all with nirvana in mind for the importer – digital independence.

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# The Data Dividend

A data software specialist can help hard-pressed businesses to collate and use their data more effectively. *Paul Hamblin* finds out more about Business Intelligence as a Service (BlaaS).

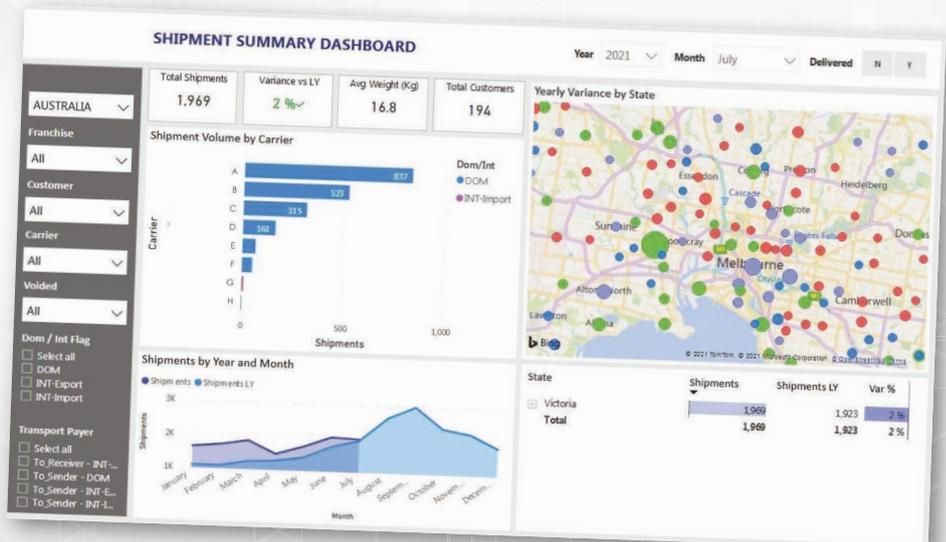
It is now accepted that data comprises a big chunk of the digital transformation 'win'. Good data helps decision-making, identifies problems (and more importantly, their solutions), optimises processes and highlights new trends and opportunities.

The key word in the previous sentence is 'good' - because if data is either bad, or simply used inappropriately, the wins soon disappear in a puff of smoke. If a company's data is not joined up (ie remains in silos), there is no 'single version of truth' on which all can agree. If data is going to the wrong people, or just a few, it may not be readily available to those who really need it.

It matters, because logistics is a data-driven industry, with complex moving parts that require constant monitoring and measuring in order to stay on top of costs, revenue and performance. Oversight across the end-to-end process is becoming a must-have, because time, margins and customer expectations demand it.

"There's a need to democratise data," argues Rob Jordan, CEO of established data software specialists The Information Factory. "These are commonplace issues, they're not isolated to a few businesses."

For Rob Jordan and his team, actions speak louder than words. The Information Factory has set out to solve these problems, aiming to support companies who may not have the skills



and bandwidth to tackle them head-on. Business Intelligence as a Service (BlaaS) is a comprehensive, end to end subscription-based, fully managed, business intelligence service operating with cloud-based technology.

Completeness and ease-of-use have been key to the product's development. "BI as a Service connects to and collects client data, integrates the data into a secure cloud based warehouse & transforms it into simple to use dashboards, visualisations and detailed reports tailored to the client's company and department specific KPIs," Rob Jordan explains. "It reduces the pressure on IT departments to build and manage something themselves."

The aim is to simplify and enable the data journey more effectively. "It is a single version of truth that everyone can trust, leading to more collaboration between different parts of the organisation. Meanwhile, your Business Intelligence is more automated, so analytics can be produced in a few clicks."

Dashboards are easy to use, with no specialist training required. It's not a one-size-fits-all – reports can be customised to individual company KPIs, providing an integrated overview of the business with insights to support fact-based decision making.

Why use The Information Factory though?

"We are data experts, it's what we do. We've been delivering data-driven tailor-made solutions for over 15 years, and we think now is the time to bring a subscription-based all-round solution to a wider logistics market, which is one we know very well," says Jordan. "And our customer service is unmatched. We provide the full end-to-end package and not just one component. And, because it's a subscription based service we provide a help and support desk to answer user queries and offer data consulting to help clients take full advantage of their data assets."

[www.theinformationfactory.com](http://www.theinformationfactory.com)



A large industrial robotic arm is positioned in the center of the image, reaching towards a pallet. The background shows a warehouse with high ceilings and numerous storage racks filled with boxes. The entire scene is overlaid with a semi-transparent blue filter. A large, dark blue diagonal shape cuts across the left side of the image.

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# Voice Revolution



With figures suggesting that there could soon be more voice assistants than human beings, you can't stop the children of the (Voice) revolution, says *Alex Macpherson*.

In 2020, there were 4.2 billion digital voice assistants being used in devices around the world. Over the next three years, according to Statista, that number is anticipated to reach as many as 8.4 billion units – a figure that if correct, would represent more voice assistants than human beings!

There are over 110 million virtual assistant users in the United States alone, with the software most common in smartphones and smart speakers. And, according to its latest figures, Amazon's Alexa was compatible with around 60,000 different smart home devices around the world, highlighting the growing market and overall appetite for voice technology.

Thanks largely to consumerisation, the technology is popping up in all manner of industries and working environments and there is no denying that voice is certainly a technology to keep an eye on for the future.

As the technology continues to drive and shift consumer behaviour, companies need to prepare and adjust accordingly: search, advertising, content, and commerce are all being directly impacted as consumers transform the way they interact with brands as the result of advances in voice capabilities.

While voice picking has been around for decades, improvements in speech recognition and natural-language understanding (NLU) technology have increased the effectiveness and the uptake of voice applications; with one of the primary benefits in the warehouse being increased picking accuracy and speed with many secondary benefits to be had as well.

According to Honeywell, (Manhattan Associates is a Platinum Performance Partner in the Honeywell Performance Partner Program and a Voice WMS Partner), voice technologies allow employees to free up their hands and eyes with voice-guided workflows making picking and packing more safe and efficient.

When combined, voice and WMOS integration can provide significant improvements to operations throughout a distribution centre or warehouse, including increased productivity of up to 30+ percent with lower staff attrition rates by as much as 30 percent in part due to warehouse workers being able to speak their native languages.

## Beyond Warehouses

It's not just in retailers' warehouses. In the retail space, you can't get any bigger marker for the positive direction of voice adoption than Wal-Mart; bringing a voice assistant into its stores via the Ask Sam voice app. The app is a voice-driven tool for employees that brings together information such as stock data.

Whether or not you believe the media hype, or the forecasted analyst numbers, there is simply too much traction and potential with voice at a retail and supply chain level for it not to be something that will impact retail over the coming decade. That said, it doesn't come without its own challenges:

**Data ownership:** If you choose to use one of the top two platforms, Alexa or Google Assistant, then they'll ultimately have visibility into all of your 'action activity', including what your users are asking for and buying. That's pretty compelling competitive intelligence.

**Commission:** For a truly seamless experience, retailers will need to use a native payment service, like Amazon Pay or Google Pay which comes with a charge.

**Competition:** Amazon's aim is to be the place where you can buy anything online. That means that, whether or not you compete with Amazon today, you might tomorrow. With that said, how Amazon treats competing products on Alexa is yet to be seen.

Voice systems alone in stores or combined with WMS systems as part of the broader supply chain offer the potential for an advanced (warehouse) experience that offers a positive work environment and a significant return on investment. The implementation of advanced software and hardware (robotics) however, does offer its own challenges, making the need to choose vendors that can integrate with each other seamlessly.

Advances in technology will continue to transform retail, warehouse and supply chain processes. And, as humans, machines and software continue to merge within the supply chain space, a truly optimised warehouse is now a real possibility.

*Alex Macpherson is Director of Solution Consulting and Account Management at Manhattan Associates*

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# RTV Journey

Real-time visibility (RTV) is only at the start, with much more to offer in enhancing FMCG and retail operations, argues *Jesper Bennike*.

The fast-moving consumer goods (FMCG) and retail sectors are constantly fighting to adhere to high turnaround speeds. Consumers live in a world of instant gratification, so retailers need to provide the fastest possible service.

This has been made more complicated over the last 18 months. COVID-19 has accelerated the shift to online purchases, with the ecommerce share of global retail sales rising from 13.6% in 2019 to 18% in 2020 – and predicted to reach 21.8% by 2024. This is putting businesses under pressure to meet online demands – while improving efficiency and providing the experience customers now demand.

Real-time visibility (RTV) technology has a key role to play in enhancing processes within these two consumer-facing sectors. It has the power to transform operations across three core pillars of business success.

## 1. Supply chain efficiency

RTV can instantly make FMCG and retail supply chains more efficient. For example, RTV provides live information that can be accessed quickly when needed to ensure intelligent decision making.

It helps shippers communicate any delays with customers ahead of time, enabling the customer to reprioritise transports and re-allocate time

slots. Live tracking makes it easier for customers to ensure that their warehouses are ready for incoming transports, whether the transports are running ahead of or behind schedule. With labour able to be proactively reprioritised, trucks spend less time idle at warehouses – resulting in quicker turnaround times and a more efficient warehouse operation.

In addition, location check calls are automated with RTV, meaning customers receive consistent ETA updates and any disruptions are resolved proactively. We've seen shippers reduce the quantity of check calls by 60-80%, saving them considerable time and effort.

## 2. Customer experiences

RTV gives carriers the tools to provide full transparency across multimodal transports. With more operations involving multi-leg solutions, RTV can incorporate multiple transport modes of a shipment's journey – whether by train, barge or ocean.

This leads to better insights and transparency, helping to build trust with customers and provide in-the-moment updates about any delays. At the same time, automating check calls empowers staff to dedicate more time towards dealing with customer queries. This is also made easier by customer service teams having direct access to real-time information and insights.

Ultimately, the customer experience end goal is that on-shelf availability is the best it can be. By adopting a visibility-first approach, businesses will be better positioned to minimise product shortages and provide transparency into the progress of goods through the entire supply chain.

## 3. Maintaining operations

The other crucial consideration for FMCG and retail supply chains is resilience. Disruption has become part and parcel of global supply chains, so having access to information in real time is key when building agility and shaping operations to be predictive rather than reactive.



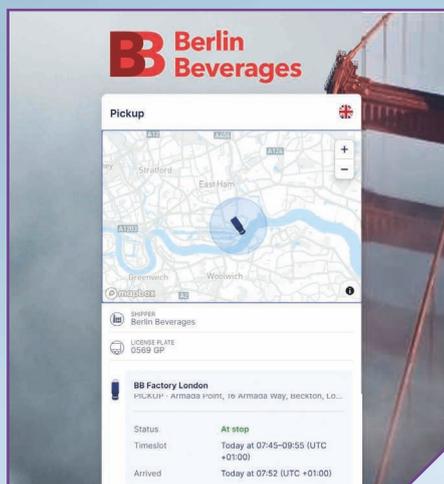
*Jesper Bennike is Executive Director at Sixfold.*

RTV data helps to predict any issues ahead of time and to communicate them proactively with customers. This access to real-time data is especially crucial during peak times such as Easter, Christmas and Black Friday events – as well as more large-scale unprecedented events like Brexit or a global pandemic.

Ultimately, being able to solve problems and react quickly is the key to minimising the impact on FMCG and retail supply chains – which is why RTV is so important. But this is just the first step on the journey towards truly impactful digital transformation.

The greatest value comes when visibility data is integrated into transport execution. Applying AI and machine learning capabilities can improve and automate decision-making – from dynamic time slot management to automated payment processes – in turn taking businesses to the next level. FMCG and retail businesses must be prepared to embrace this level of transformation if they want to thrive in an increasingly connected and complicated world.

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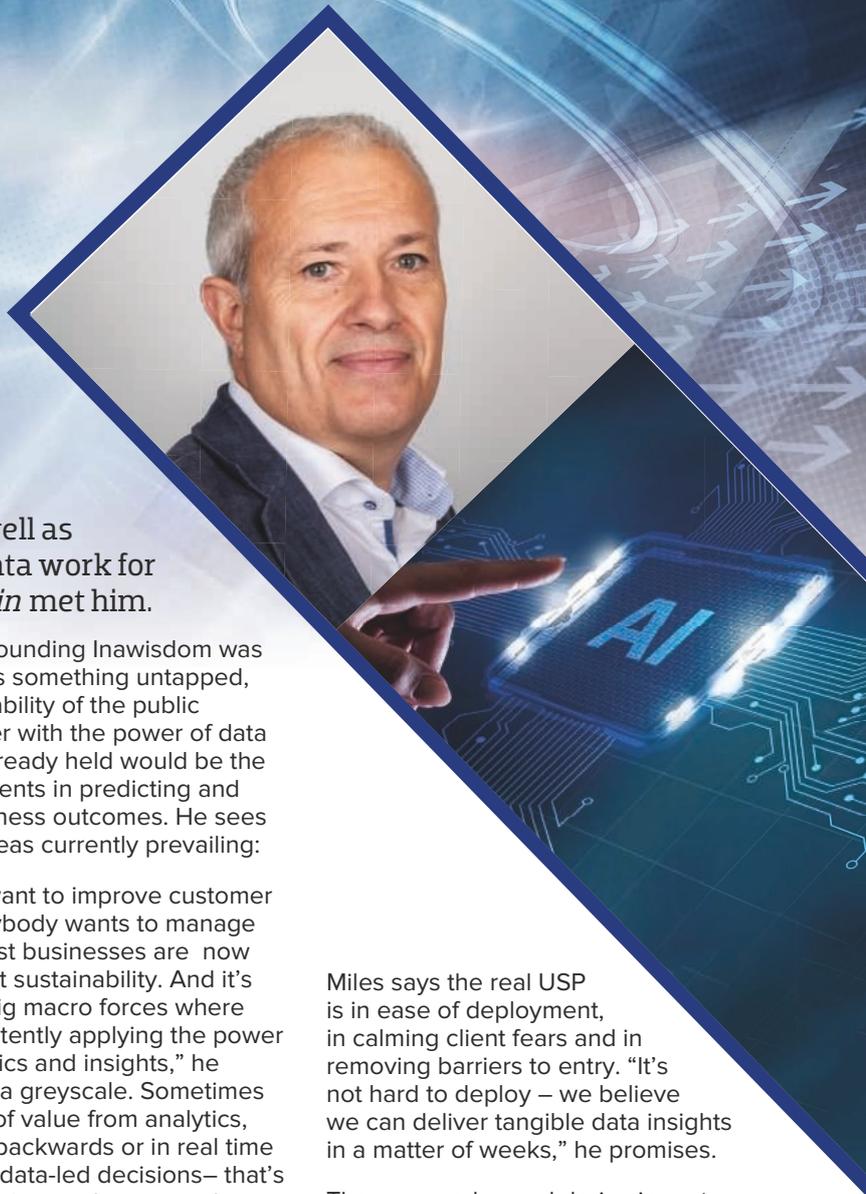
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# Forensic Focus



AI/ML can help with sustainability goals as well as improve costs and efficiencies. "Let's make data work for us," says Inawisdom's Neil Miles. *Paul Hamblin* met him.

Neil Miles, successful technology entrepreneur and co-founder of Artificial Intelligence (AI) and Machine Learning (ML) specialist Inawisdom, takes a refreshingly direct approach to data analytics. "Focus on the outcome, on what will make a difference to the business," he urges. "A data scientist might get a model accuracy to, say, 80% and then will spend the next year trying to get that accuracy to 82%. I tell my clients that 80% delivered to the business NOW is so much more valuable than 82% in a year's time, because by then they've missed the opportunity. It's about deploying learnings to make a difference. Instead of making analytics theoretical, Inawisdom makes it practical."

Founded some five years ago, Inawisdom brings new insight to age-old concepts. "The important point is that it's not new," he points out. "It's analytics, it's science, it's taking data and interpreting that data. Why is it so popular now? Because of the richness of the data, not just the volume, but the sources – whether machine data, such as machinery, sensors or vehicles, or social media, via images, video or speech perhaps – has meant that the science can be applied to provide a much richer AI capability."



His vision in founding Inawisdom was that there was something untapped, that the availability of the public cloud together with the power of data companies already held would be the magic ingredients in predicting and realising business outcomes. He sees three main areas currently prevailing:

"Everybody want to improve customer service, everybody wants to manage costs and most businesses are now thinking about sustainability. And it's those three big macro forces where we are consistently applying the power of data analytics and insights," he explains. "It's a greyscale. Sometimes you get a lot of value from analytics, from looking backwards or in real time to help make data-led decisions – that's what analytics is – and you can also get significant value from looking forward – prediction and prevention – via AI and ML. That full lifecycle is our focus area."

He quotes some notable successes. "We are helping Aramex, I call it the FedEx of the Middle East, with ETA (*Estimated Time of Arrival*) analytics. At some points during this year we made four million predictions in a single day, all accommodating, for instance, specific quirks in Middle Eastern home address descriptions. By being able to predict arrival times accurately, we reduced their inbound call centre volumes by approximately 40%."

In the Automotive sector, he describes the value of following the delivery of a new vehicle from placing the initial order to showroom delivery. In the maritime sector, sustainability goals are highlighted. "They have limited options, they have to work with bunker fuel, so fuel prediction is very important for them, not just in terms of costs but also in terms of optimising their sustainability agenda."

Miles says the real USP is in ease of deployment, in calming client fears and in removing barriers to entry. "It's not hard to deploy – we believe we can deliver tangible data insights in a matter of weeks," he promises.

The ease and speed derive in part from partnering with the enormous cloud capabilities provided by Amazon Web Services (AWS). "They provide such a rich set of services and tools on their platform," he comments. "And like any tradesman, as long as you understand how to use them, you get the best out of those tools. Knowing how to leverage them to best effect is our expertise. That's why the barrier to entry for customers is much lower than they often realise."

Customers can rely on Inawisdom's expertise and experience in two game-changing areas, he notes. "We want customers to know that when they work with us, we are protecting their data assets, which are very valuable and need to be held to the highest privacy and regulatory standards. The second is that they always know we will focus on the business outcome – how AI/ML will genuinely solve a problem or transform a process. That is so important."

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# Asset Tracking Gets Smarter

Asset tracking solutions that are IoT-enabled can deliver significant benefits for users in a range of sectors, says *Marc Pégulu*.

For many years, asset tracking has become increasingly important in the manufacturing sector and in supply chain management because it enables companies to boost their overall efficiency by ensuring effective monitoring of resources and operations. However, asset tracking has tended to be based around satellite or cellular systems, which are usually high-cost, unsophisticated and incapable of delivering the most efficient asset monitoring possible.

As the world increasingly adopts solutions for the Internet of Things (IoT), asset tracking systems are becoming more important, more prevalent and more sophisticated. For example, thanks to IoT-based technology, it's not only possible to identify where an asset is but now users can have instant access to key data relating to that asset.

## Monitoring High-Value Assets

When dealing with on the move high-value assets it is vital that they get to their destination as efficiently and safely as possible. Because low-power, long-range IoT technology is also low-cost and straightforward to deploy in

comparison with alternative methods of connectivity, it represents the optimal asset tracking solution. Sophisticated platforms – based around a modular and configurable chipset – make it easy to change from monitoring indoor activity to outdoor activity, removing the requirement for different trackers that are dedicated specifically to one or the other.

Staying with outdoor and indoor asset management, even higher-tech platforms incorporate powerful battery-based tracking devices that can be used in such demanding applications as inventory and shipment management as well as keeping track of pallets and warehouse equipment.

## Cloud Monitoring

Clearly, it is vital for companies and organisations to be able to monitor not just high-value assets but also environmental conditions in their warehouses and facilities. However, sometimes it can be difficult to deploy – and expand – an asset monitoring system that delivers on its full potential because enterprise asset management solutions don't tend to be built into a facility's existing network.

Frustrated business owners looking for an all-in-one solution for asset and facilities management have turned to systems based around low-power, long-range sensors and the LoRaWAN standard as a cloud/Software as a Service (SaaS) offering. Now it's much easier for companies to identify those issues and opportunities that have a direct impact on revenue, worker safety and overall operations.

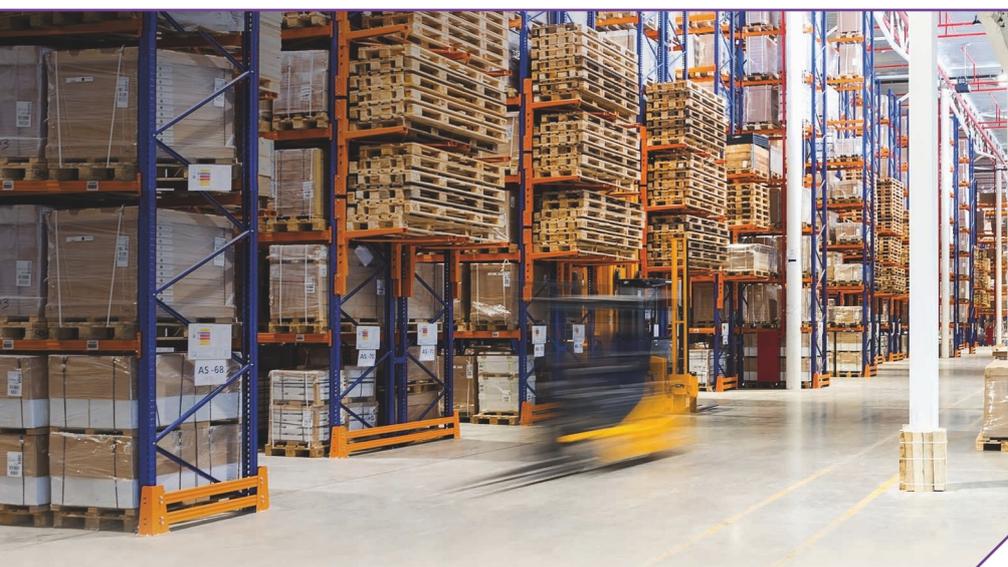
## Smart Mail Management

So far, we have focused heavily on using asset tracking systems to improve efficiency within warehouses or smart facilities. However, there are many other applications where this technology can provide significant benefits – including delivering the mail.

In Switzerland, the national postal service called The Swiss Post had a problem with ensuring customers in rural environments received their mail. The solution was to collaborate closely with top asset management systems providers to design an optical identification (OID) device that is battery-powered and eliminates any connectivity problems in remote areas. The solution improved significantly the reliability of the postal service for consumers and businesses, wherever they were located, with services now ordered by a simple click of a button or tap of a screen.

More and more industrial sectors have adopted asset tracking as they appreciate the benefits of being able to monitor the movement of goods and check safety levels within facilities. With the advent of low-cost IoT-based monitoring solutions, it has now become much easier for users to track high-value assets while delivering on safety.

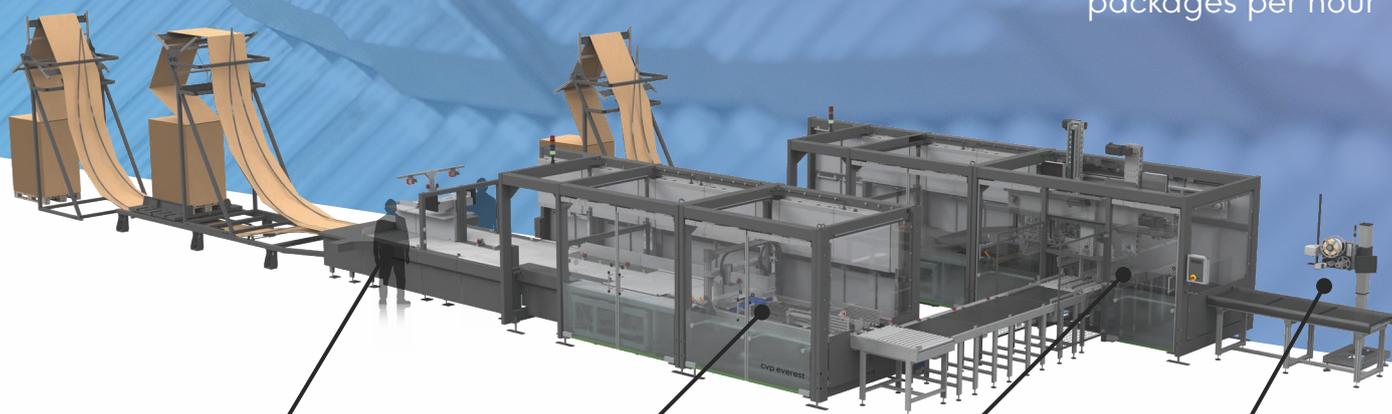
*Marc Pégulu is vice president of IoT product marketing and strategy at Semtech*



# Pack Parcels Like A Pro.

Automated packaging allows you to keep pace with the increasing numbers of online orders even during peak times. The CVP Everest is a high-speed automated packaging solution that creates fit-to-size boxes for every consignment while improving throughput and dramatically reducing a range of costs. This technology reduces shipping volume by up to 50% and decreases corrugate usage by 30%.

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# Changing the Rules

*Thorsten Mauritz* considers some of the key future trends in logistics – including the use of drones – and how they might impact the regulatory environment.

Industrial safety regulations are constantly evolving as new technology and new equipment are developed across the globe. Even countries not well known for extensive safety regulations have taken significant steps in recent times to protect employees working in potentially hazardous logistics environments.

India, for example, has made significant strides in its attitude to occupational health and safety and improving working conditions, and China has similarly introduced new regulations with reference to food safety. In Europe, specific actions have also been taken across various aspects of the logistics and manufacturing supply chain, including ISO 450001 (Occupational Health & Safety), BSI BS EN 415-6 (Safety of Packaging Machines), and ISO 13857 (Safety Distances).



The point is a simple one; that, regardless of industry category, it's important for facility managers to stay abreast of not only the newest safety standards, but also to be aware of what is possibly coming down the regulatory pipeline.

## Drone Deliveries

Several major players including Amazon (with 'Prime Air'), Google and UPS have already started trialling the use of drones to make home deliveries. In the UK, major organisations including Tesco and the Royal Mail have also announced plans, as has Just Eat, the food delivery service App.

Regulation in this 'last mile' of the supply chain is still very much in flux, due to safety concerns involving drones and manned aircraft. Whereas in the US, the Federal Aviation Administration (FAA) has limited the use of drones for now, that's expected to change in the future. UK regulators have also recently given the green light (April 2021) to delivery drone trials that will enable pilots to fly aircraft beyond their line of sight. This could significantly shake up the logistics industry. In Spain, for example, they are also lifting restrictions to allow trials in the city of Madrid.

## Smart PPE

The pandemic has impacted other regulatory spheres. In the area of personal protective equipment (PPE), the increasing use of 'Smart' PPE devices enable employers to monitor vital signs and blood oxygen levels, as well as blood alcohol, to keep their employees safe in an industrial environment.

While such Smart devices are undoubtedly a good thing, they create significant issues in relation to the collection, use and storage of personal data – and medical data at that. This in turn creates similarly huge privacy issues in relation General Data Protection Regulation (GDPR). Further regulation, or at the very least amendments to existing regulation, will be required as a result.



*Thorsten Mauritz is Marketing Manager for RiteHite Europe.*

## The Internet of Things

Another global regulatory challenge related to data gathering and smart devices is coming about through the Internet of Things (IoT). Industrial Internet of Things (IIoT) technology is undoubtedly a positive step forward for businesses. The data gathered from multiple connected devices gives facility managers real and meaningful insight into their operation, which in turn can be used to inform ways of further improving safety and operational performance.

Champions of IIoT will be well aware, however, of the potential threat that such new technologies pose as a potential entrée for cyber criminals with malicious intent. It is therefore encouraging to see new regulation already emerging in this field, not least with the launch of a new EU Cybersecurity Act which introduced a new EU-wide certification framework for ICT products, services and processes. The EU's Digital Europe Programme from now until 2027 will see €1.9 billion invested in cybersecurity capacity and infrastructure for EU businesses, people and government.

## Artificial Intelligence

Artificial Intelligence (AI) will be another area in which we can expect significant regulatory change in the months ahead, again primarily related to issues around data. AI is transforming how humans and machines interact in a shared environment. The availability of data about how people work, what their emotional state is while working and how they engage with equipment and the world around them will likely lead us to a whole new level of industrial safety, but also a whole new world of industrial regulation.

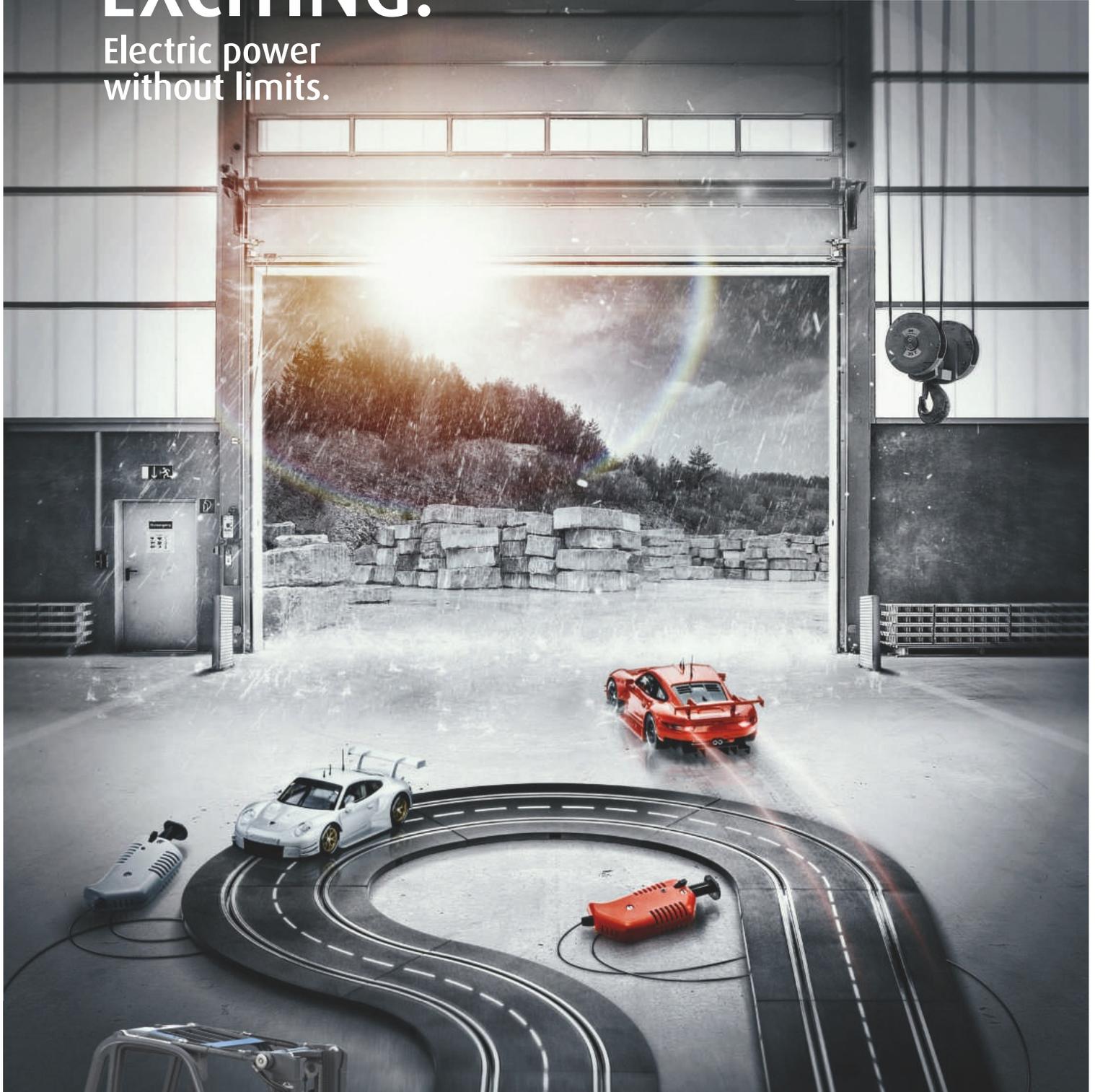
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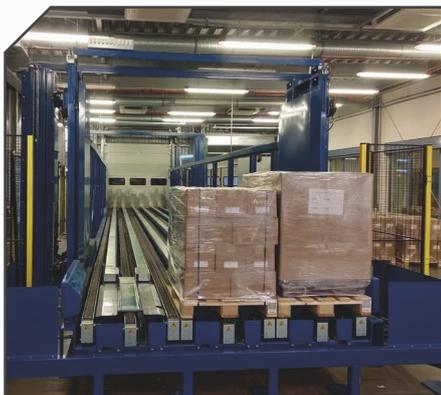
Are you looking for an automated solution to help you to load or unload trailers in one shot into standard trailers – and all in just a few minutes? Ancra Systems have the answers.

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If you have high volume inbound or outbound, standard palletised goods, slip-sheeted or Euro palletised goods, and need to reduce the inefficiencies, speed up the truck turnaround time at the dock, save labour and equipment cost, improved worker ergonomics and avoid goods damage – that's exactly what Ancra Systems can achieve. With our Non-Modified ATLS solutions, the overall loading or unloading cycle can be reduced from  $\pm$  30-40 mins to around eight mins with the benefit that a single dock door handles three up to four full trailers per hour.

Ancra Systems has inventoried the exact needs and understands the challenging situation at customer locations, allowing the company to offer the best Non-Modified ATLS solution. There are two types of Non-Modified ATLS solutions – Skateloader and LoadRunner Plus.



LoadRunner Plus

## Skateloader System

The Skateloader system was developed and engineered for the automated loading of non-modified trailers/trucks/containers. When trailer modifications are impossible, the Skateloader is the ultimate solution for one-shot loading of standard palletised goods or slip-sheeted goods for outbound transport. It's an ideal solution for a high-volume production facility or a distribution centre shipping to multiple end-users.

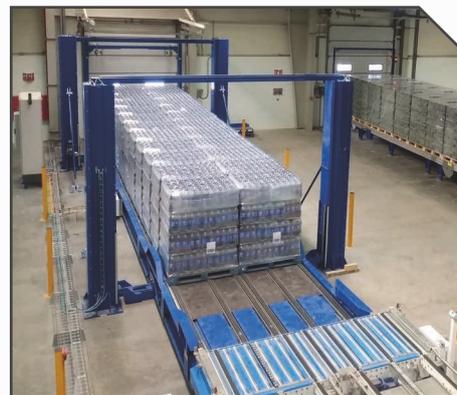
The total loading process only takes approximately eight minutes.

The Skateloader has special functionality for loading. It is equipped with a scanning system controlled by software to ensure the corrected and precise alignment of the loading system with the trailer.

It can follow the trailer's height which changes continuously while moving weight from the dock into the trailer, thus ensuring a flawless loading process. The system deposits the load on the floor of the trailer in a controlled way.

The Skateloader can be seamlessly integrated into any automated production or warehouse system. The Skateloader system increases efficiency by 400 percent, compared to traditional forklift truck loading.

The shorter truck turnaround time at the dock is accomplished while creating a safer work environment, for employees and reduce the damage of the products.



Skateloader



LoadRunner Plus

## LoadRunner Plus

The LoadRunner Plus was developed and engineered for automated one-shot loading and even unloading of Euro pallets, consistent pallets or racks with no bottom boards into non-modified standard truck/trailer/container. It's a refined solution for one-shot loading and unloading goods for inbound or outbound transport. It also can be applied at existing sites.

The LoadRunner Plus can load and even unload 33 euro pallets (short side leading, three pallets side by side) in one shot automatically. And as there is no queue pressure between the individual pallets, product damages during the loading (or unloading) cycle are also avoided.

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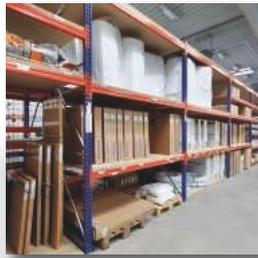


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# Digital Evolution

Linde's *Mike Hawkins* outlines the trends he expects to develop in warehouse handling in 2022.

With the ecommerce explosion accelerated by the pandemic, retailers are increasingly only looking to work with warehousing and distribution partners with the capabilities to meet ever-evolving customer delivery expectations.

For many warehouses dealing with consumer products, this means two things in the future. They will need to store far more goods and get them dispatched more quickly than ever before. And that, right there, is what's behind trends and technologies shaping the warehouse of the future.

## Demand for digital

The last year or two has been tough for the logistics sector – with a widespread fall in investment in new technologies. However, in 2021 the market began to pick up substantially.

We've seen major demand across the sector for new and improved ways to bolster the efficiency of the operational supply chain – especially in the build-up to the notoriously busy Christmas period. Meanwhile, Brexit is gradually reducing the UK labour pool and COVID-19 has impacted the reliability of human labour. For many materials handling companies, these changes are making things even more challenging.

This has led to a rise in demand for the latest innovations, including digital fleet management and automation.

## Cutting-edge technologies

Warehouses around the world are already being revolutionised by automation technology, which can streamline operations by taking care of many repetitive tasks where a person doesn't add significant value such as order picking. As many retailers are seeing, automated guided vehicles (AGVs) make life easier by fulfilling simple transport from one point to the other at the press of a button. This greatly improves staff morale too, by removing workers from low-value tasks and giving them more time to focus on higher-level ones.

Digitisation will also be key to success in the changing the world of intralogistics, notably with connected fleet management technology. This technology allows a company's forklift truck fleet to be controlled centrally. Modern forklift trucks can now continuously collect data, providing real-time performance information which can be analysed and used to optimise complex warehouse and transport processes. This results in the fleet and fleet management becoming intelligent, and better at detecting problems such as capacity bottlenecks at a much earlier stage.

## Market predictions

With the pressure on for the logistics industry to become increasingly efficient, we expect all markets to be affected by digitisation to some extent. For those warehouses operating within consumer retail goods, the changing face of the warehouse will see more automated trucks and connected fleet management.

Not every task in the warehouse can easily be automated and where there are tasks that need a greater margin for error, such as offloading pallets from a lorry, so human intervention will continue to be integral. The reality



*Mike Hawkins is Director of Logistics Solutions at Linde Material Handling*

is that technology will never replace humans completely – so the majority of future warehouses will consist of a mix between human labour and automated vehicles.

It's also important to remember that heavy investment in these new technologies isn't right for everyone – especially smaller scale operations. Whatever the scale of your logistics operations, it's important to find a solution that will allow your supply chain to be the best it can be.

Despite this, we can expect to see this technology becoming more and more commonplace in the average future warehouse. In fact, in the next three years there will likely be a major retailer that has a warehouse run solely by automated technology. Keep your eyes peeled.

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# Taking The Temperature

What is the state of the forklift market post-pandemic? *Paul Hamblin* takes the temperature with industry veteran, Clark Europe CEO Rolf Eiten.

It is too early to say 'post-pandemic' with any confidence, but it certainly feels like we can start to talk 'post stage-one', at the very least. How is the forklift and materials handling industry faring and what must it face up to?

Clark Europe CEO Rolf Eiten is refreshingly frank about both the challenges facing the forklift sector and the strong positives engendered by enforced changes.

"The overall picture is that the market is good. We've seen a big push in the market in 2021 and I would say that only a small part of that is attributable to catch-up from lost orders in 2020," he suggests.

The numbers back him up, as well as revealing where the current key challenges are. "Across the industry, shipments in the first half of 2021 are 22% up on last year, while factory orders are up by 68%," he points out. "The discrepancy in those figures reveals the problem that we as an industry are facing, which lies in obtaining the materials we need to feed the demand."

The well-known shortage of materials is the first of a trio of major issues that he believes present the biggest challenge to the sector post-Covid.



"The second is freight costs," he goes on. "The world is so dependent on sourcing from Asia and China. If I look at what we see every day worldwide at Clark: a 40ft container charge from Asia to Europe pre-pandemic would cost about \$4K US. Today it is \$16k. And that same container from Asia to USA, you're looking at \$20K US. Take one of our 3-tonne diesel trucks as an example, normally we can transport four in one container. That means the average container freight cost per unit pre-pandemic was \$1k US per unit, and today it is \$4k per unit. So this is another area of difficulty."

It doesn't end there, though. "The third challenge is cost of materials. Look at house construction, or the cost of wood, for instance, up 40%. Energy costs are much higher, steel is up 18%. It is a tough situation at this moment in time. If the automotive industry, the BMWs and Volkswagens of this world, cannot get the materials they need to keep their assembly lines running, with all the purchasing power that they have, then how can smaller companies manage?"

Does this mean inevitable prices increases for new forklift customers? "It will take time to overcome all this, and we must recognise that many of our dealers are medium and small family-owned businesses we have partnered with for a long time. We can't go to them with 20% price increases. So, while we may have to look at putting some price increases to the market, we will have to look at cost savings in other areas."

Customer demand remains strong, though, it must be remembered. And behavioural changes caused solely by Covid have brought huge benefits, he enthuses.

"I think at Clark we've always been strong in dealer and customer communication, but we are now even closer to the dealers and to the customers than we were beforehand, thanks to digital technology. That's



where Covid has been positive - if we are looking for a positive from a pandemic - because it made us change. It made us use the tools available to us more effectively. We are a lot more efficient and our flow of information is a lot better. And if I look at our orders compared to last year, we are 80% up. And the dealers love these tools, too, by the way. So I am very positive and look forward with confidence."

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# Damage Control

KOOI ReachControl has introduced a wireless Length Measuring System and Deflection/Tilt indicator to improve safety options in the warehouse.

Working safely with forklift trucks, especially in warehouses, is becoming ever more important as the workload increases and permanent employees are becoming thin on the ground. By providing the forklift operator with information, we can significantly reduce a lot of problems, such as damage to goods, pallets and warehouse racking.

KOOI ReachForks, hydraulic or mechanical telescopic forks are now commonplace in the world of pallet handling. The proven technology is used for loading and unloading lorries, and the double-deep stacking of pallets in warehouses. They can also be used as extension forks if more than one pallet has to be transported, two or more pallets behind, or when handling different pallet sizes.

## Wireless KOOI ReachControl – Always the right fork length for each pallet.

A common problem in organisations that use different pallet sizes, such as the packaging, paper and furniture industries, is that it is important to choose the most appropriate fork length. If forks are too long, they protrude from the far side of the pallet, which means the tips can pierce any goods that may be standing to the rear. This causes damage to the pallet and goods, and, in the worst cases, injury to personnel because the load to the rear could be tilted backwards and topple. If the forks are too short, an unstable load can tip over.

This year Meijer introduced KOOI ReachControl. This is essentially an app that can control various features, such as a Length Measuring System

for KOOI ReachForks. Although the Length Measuring System has been available for some time, the new system is now available with wireless connectivity. It is therefore not absolutely necessary to supply the system with external power. A simple battery pack (rechargeable and exchangeable) can power the hydraulic valve for the auto-stop feature. This wireless innovation means installing the system is even easier.

The specially developed app is compatible with standard Android and iOS devices and is used to receive and display data from the Length Measuring System (which is actually a highly accurate flow-meter). The system allows you to programme various pallet sizes as pre-sets, each with its own name. Once a pre-set is reached, the flow of oil to the ReachForks is shut off by a valve which in turn keeps the forks at the correct length to pick up the pallet in question.

Fitting the Length Measuring System to the forklift truck is relatively straightforward. An additional advantage is that the ReachForks do not require any modification, so each existing customer can purchase this system without the need to buy new hydraulic forks.

## Wireless KOOI Deflection System

To help prevent damage to pallets and goods, Meijer Handling Solutions has developed a sensor that detects how level the load is. When the forklift picks up a load, the system detects the



Wireless KOOI ReachControl Length Measuring System

angle between the blade of the fork and the floor. This allows any bending of the forks, deflection of the mast and distortion of the tyres to be taken into account.

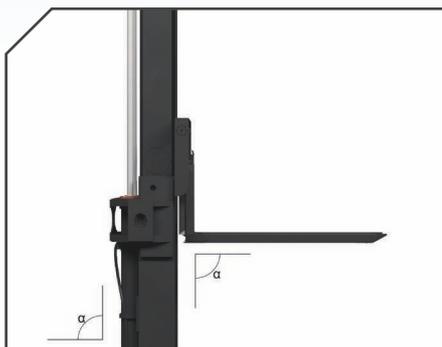
Non-horizontal loads can become unstable. The KOOI Deflection System is a small sensor fitted to the tip of the telescopic forks. Fully enclosed at the front of the KOOI ReachForks, the sensor is protected against damage and shows the maximum deflection at the tip of the forks. The sensor works wirelessly via Bluetooth and can easily be replaced. It can also be screwed onto the side of a standard forklift truck blade.

The KOOI Deflection System is wireless, no major adjustments to the forks are required, so the system is perfect for aftersales purposes. The universal design also allows the inclinometer to be used for other purposes as well as forklift truck blades.

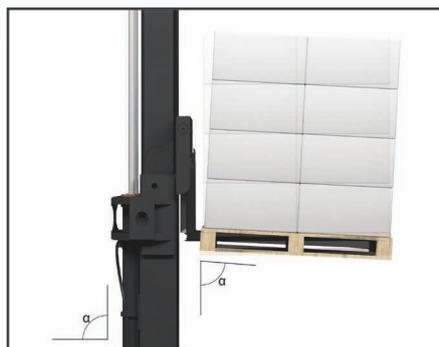
The KOOI Deflection System is also read out and operated with the KOOI ReachControl App. Meijer Handling Solutions supplies a display with an integrated connector as standard. The IP54-rated display is suitable for indoor and outdoor use.

The KOOI Deflection System can also be used in combination with a camera system.

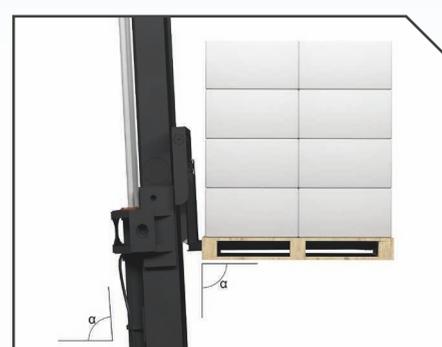
[www.meijer-handling-solutions.com](http://www.meijer-handling-solutions.com)



Mast is vertical and forks horizontal



When picking up the load, the forks bend downwards.



To keep the forks horizontal, the mast needs to be tilted backwards.

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# Planting Green Shoots

Calor and forklift truck supplier Carrylift have worked to support a leading horticultural products manufacturer to make a seamless transition to BioLPG for its forklift truck fleet. The switch has delivered long term sustainability benefits and improved the operating environment for employees.

**Vitax is one of the UK's leading manufacturers and suppliers of horticultural products. It supplies packaged products into the domestic market for use by amateur gardeners and bulk products such as fertilisers used in sporting environments.**

Its busy manufacturing site, based at Skelmersdale in Lancashire, contains several large-scale warehouses and the use of an efficient and reliable forklift truck fleet is essential to help keep on-site manufacturing activities running smoothly. The company has traditionally relied upon diesel powered trucks, but as a number were coming to the end of their operational life in 2019, the company began discussions with Carrylift to investigate potential options for replacements.

As a responsible business, Vitax also wanted to take the opportunity to further enhance its existing sustainability ambitions and were interested to see if an alternative, renewable fuel could enable the company to improve its environmental impact.

Howard Bond, North West Sales Manager at Carrylift, says: "We had very productive discussions with the Vitax management team. They were open to new suggestions about how we could assist them improve the environmental and operational performance of their essential forklift truck fleet as several of their older trucks became obsolete.

"In partnership with Calor we were able to present an integrated solution that used a new fleet of highly reliable TCM trucks which are fuelled by Calor's BioLPG. Electric powered vehicles were discounted as an option as we felt they were not suited to the robust operating conditions in which the trucks had to operate. In addition, it would have necessitated significant investment in charging infrastructure on the site which would have been cost-prohibitive."

Calor's BioLPG was specified and the transition period of swapping the fleet over from diesel to BioLPG was seamless. To underpin the fuel needs of the new fleet, Calor's Field Sales Professional Chris Teasdale supported Vitax with the siting of a new BioLPG bulk tank and alongside Calor's expert team dealt with the tank specification, all safety mechanisms, civil engineering planning and approval, installation, and commissioning.

Vitax operates an extremely busy manufacturing site and it was essential that there was no interruption to schedules as the work was undertaken and the new fleet introduced. Mike Aspinall, Health and Safety Manager at Vitax, comments: "The switch over was straightforward and Calor handled all aspects of the project very well. Working in tandem with Carrylift, they ensured that the transition from diesel to a BioLPG was managed on time and on budget. Since beginning operation over two years we have had no issues."

There are now seven TCM BioLPG powered forklift trucks on site at Vitax used for the movement of raw materials and finished products safely and efficiently. Thanks to the on site BioLPG bulk tank, each truck driver can refuel directly from the Calor bulk tank as required so that operational efficiency is optimised. This also eliminates the need to manually handle 18kg gas bottles during transfer from the forklift to a gas bottle store.

To further support Vitax, Calor remotely monitors the fuel levels within the BioLPG bulk tank using its telemetry system<sup>1</sup> and automatically schedules refuelling deliveries to Vitax as required, ensuring that the fleet always has enough fuel on site to support operations.

The switch to BioLPG has also improved the prevailing conditions found within the busy production and storage warehouses. Helping to reduce emissions and pollutants when compared to the previous diesel-powered trucks, both noise levels inside the warehouses and overall carbon emissions have been cut by using the new fleet.

[www.calor.co.uk](http://www.calor.co.uk)

<sup>1</sup>A telemetry unit will need to be installed by Calor, for the purpose of enabling Calor to remotely measure the quantity of LPG contained within the bulk tank(s) and schedule deliveries accordingly. Subject to the telemetry unit being able to receive signal. Direct-debit payment plan required.



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# Bulky Goods Automation

Hubtex has launched the first fully automated solution for long goods handling. Meet the customer-specific PhoeniX AGV.

The PhoeniX AGV is presented as the world's first fully automated electric multidirectional sideloader for handling long, heavy and bulky goods. Fulda-based specialist Hubtex is targeting the wood, sheet metal, glass and automotive industries, among others.

The basic model was designed by Hubtex for step-by-step automation utilising full electric steering, enabling longer operating times due to its lower energy consumption. Now the manufacturer has developed the fully automated PhoeniX AGV based on this core product. "We are not simply launching yet another AGV solution, we are entering a niche market where there are currently very few automated solutions – the handling of long, heavy and bulky loads," explains Hans-Joachim Finger, Managing Director of Sales and Purchasing at Hubtex. "The PhoeniX is a perfect example of how the concept can be transferred to our entire range of Hubtex trucks with electric drive."



The Phoenix AGV has a unique ability to recognise various long goods that protrude beyond the truck, crucial for multidirectional sideloaders. The truck also includes dynamic mapping, precise positioning, and block storage as standard.

## Object-based navigation

Using object-based navigation, Hubtex combines the data from navigation sensors, personal protection sensors and machine protection sensors. The personal protection sensors maintain a horizontal protective zone in the

The Phoenix AGV is presented at the Hubtex customer centre in Fulda, Germany.





No driver's cab, but clearly laid out operating terminals.



Certified sensors: the Phoenix AGV accesses vacant spaces to enable the fork arms to pick up the load.

direction of travel. Driving speed is automatically reduced until the truck comes to a stop if a person or an object appears in the warning field. In addition, the personal protection scanners are used to accurately steer the AGV into the storage aisle. As well as the personal protection scanners, the truck is fitted with machine protection scanners that protect against collisions. Since the personal protection scanner only monitors a one-dimensional scanning plane at a low height, objects protruding into the path of the truck, for example, cannot be detected. A further navigation scanner acts as an additional safeguard by identifying objects in the vicinity such as cantilever racks, walls or columns. The combined data from the scanners creates an interactive, virtual map of the warehouse. This map is then used to determine the precise position of the Phoenix AGV within the hall and pinpoint the position of the storage location.

### Reliable detection

The patented long goods detection function enables long goods to be reliably detected and picked up, with the travel range adjusted accordingly. Unevenly distributed loads or profiles of different lengths can be seen in the detection area of the certified sensors. The load contour facing the truck is scanned for this purpose. The truck detects barcodes to carry out a plausibility check of the transport order

and detects vacant spaces which can be accessed by the forks to pick up the load. Accurately determining the load length is of great importance. If the load is significantly longer than the truck, protection zones and routes will need to be adjusted accordingly.

### Customer-tailored

Hubtex therefore relies on an integrative concept whereby the solution is individually tailored to the customer. "With our broad range of automation technologies and

extensive truck concepts for various handling tasks, we adapt our designs to the requirements of our core industries such as woodworking, steel or automotive," says Hans-Joachim Finger. "Our consultants determine the suitable level of automation for each individual user and calculate the resulting costs. By asking intuitive questions right from the outset, we are able to provide a coherent and extremely cost-effective AGV solution."

[www.hubtex.com](http://www.hubtex.com)



Also included: patented HX steering from Hubtex for a smooth changeover from longitudinal to transverse travel.

# Cats and Dogs

Machine Learning, Neural Networks – big terms in modern logistics, but what do they actually mean? What we need is an expert to tell us. *Paul Hamblin* meets one.

**AGV and mobile robotics specialist Kollmorgen measures the performance and behaviour of AGV systems, both on a system level and on board individual AGVs. It collects information on motor drives, laser scanners, localization, traffic, and obstacle interference, thus finding trends and patterns which help it to improve products and system configurations.**

Highs and lows in productivity or daily utilization trends might be measured, and the data used to optimize routes, increase throughput and calculate smarter resource utilization. To the end-user, this translates into lower costs and higher revenue. The collected data can also give important clues to external processes that might disturb AGV performance. For example, pedestrians getting in the way of the AGVs, or manual forklifts driving in areas originally planned primarily for the AGVs.

How does it do all this, though? Samuel Alexandersson, Manager Product Management AGVs at Kollmorgen is our patient guide.

“An artificial neural network is a computational model that is loosely based on the structure of the human brain,” he begins. “Our brain cells, or neurons, are connected by an intricate network of nerves along which electrochemical signals travel. Simplified, we can say that if the weighted of input signals are strong enough, the neuron will fire, and the signal will continue on to the next set of cells the neuron is connected to. In this manner, the structure of the

connections between all the different neurons in our brain will determine how a signal is propagated, and when we learn new things, what is really happening inside our brain, is that the connections are restructured.

“In an artificial neural network, the signals are digital instead of electrochemical, and the strengths of the connections are stored in weights. Initially, these weights will have random value, meaning when we feed an input to the network, it will just output random nonsense. But in the same way we humans learn from experience, we can let the model learn from experience in the form of data. Each datapoint will be an input and an expected output, so these pairs are examples to learn from. Using these so called Machine Learning algorithms to gradually adjust the weights, will bring the output from the model closer and closer to the expected output, so that it can learn to make predictions.

“For example, if we are to teach a machine to see the difference between a cat and a dog, we need to construct a dataset with images (inputs), where each image has a label indicating if it is a cat or a dog (the correct outputs). After training the neural network on the dataset, we may feed it with a new

image, and even though this image has never been seen by the network before, it will tell us if it is a cat or a dog.”

Can he offer examples of how insights can be generated from data in a logistics context?

“Designing an AGV system can be a complex task that requires a lot of skill and experience,” he replies. “When designing the road network for example, there can be tens of thousands of individual road stretches that need to be configured correctly. Of course, it is easy to make a mistake and often such mistakes are not discovered until you run the system in a simulation.

“Therefore, we are currently developing tools that can analyze the road network directly, so that the user gets more immediate feedback. In internal AB-tests, we saw a 5x improvement in time it took users to find the root cause in a faulty configuration. A more anecdotal indication of the impact we can have with a data driven approach, is a support case where something that an engineer had been debugging for several hours with conventional methods were resolved within 10 minutes using a prototype that automatically analyses the configuration data.”

So there we have it – as always, it’s all about cats and dogs.

[www.kollmorgen.com/agv](http://www.kollmorgen.com/agv)



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# 500 Million Picks

Locus Robotics is primed for expansion across the UK and Europe after a significant acquisition and the opening of its Amsterdam HQ.

The opening of a European headquarters in Amsterdam is the culmination of a busy autumn for US Autonomous Mobile Robot (AMR) specialist Locus Robotics, which has seen it conclude its first major acquisition and complete its second major funding deal in the space of 12 months.

Rick Faulk, CEO of Locus Robotics, said: "Our decision to expand our presence in the European market was a logical step in our business growth strategy. Choosing Amsterdam gives us a central location that is ideal for serving our customer base, as well as giving us access to a vibrant and diverse talent pool to recruit from."

Fresh from a successful Logistics Business Show, the company is now primed for sustained growth as it looks to capitalise on new opportunities emerging in the warehouse fulfilment sector. The strategy has been boosted by the completion of a significant step in the company's expansion programme, the acquisition of Waypoint Robotics, an industry leader in industrial strength, autonomous, omnidirectional mobile robots.

The acquisition broadens the Locus product line of proven AMR solutions designed to address use cases from e-commerce, case-picking, and pallet-picking to scenarios requiring larger, heavier payloads and fulfilment modalities.

Rick Faulk said: "Locus is the proven leader in the development of highly productive and innovative AMR technology that efficiently solves our customers' needs for total warehouse optimisation.

"As order fulfilment and labour shortages continue to grow around the world, the acquisition of Waypoint Robotics will accelerate our ability to meet these global needs in just months rather than years, helping us drive the digital transformation of the warehouse."

Waypoint Robotics, based in Nashua, New Hampshire, develops and manufactures omnidirectional autonomous mobile robots for automated material transport. Like the LocusBot, its robots can be put to work immediately, supporting an existing workforce, increasing their efficiency, and improving productivity.

Waypoint's innovative Vector and MAV3K are industrial-strength, flexible mobile robot platforms that feature omnidirectional mobility, and can be fitted with a wide variety of modules and attachments, making them versatile and scalable for a host of applications. The Vector has two payload options – 136kg (300lbs) or 272kg (600lbs), while the MAV3K is for more heavy-duty lifts with a payload capacity of 1,360kg (3,000lbs).

Creating synergy with the LocusBot, they are interoperable with other robots and can easily communicate with machines and IoT devices throughout a facility.

With the ability to offer customers a choice, or a combination of robots, the acquisition gives Locus the opportunity to target new sectors, such as the manufacturing sector.

Investors have also been keen to support Locus's expansion. Tiger Global Management is an investment firm that focuses on private and public companies in the internet, software, consumer, and payments industries. Earlier this year it was one of group of investors that pumped \$150 million into Locus. Tiger Global Management has now injected an additional \$50 million into the business to facilitate continued growth and expansion into new markets.

The Locus AMR solution is very much one of those to be proven, helping businesses cost-effectively double, even triple their productivity when compared to traditional fulfilment options.

The innovative and award-winning technology behind the company's multi-bot solution has now helped to pick more than half-a-billion units in warehouses around the world.

Such has been the rapid adoption of the fulfilment solution by logistics operators globally, together with the explosion in online order volumes over the past 18 months, that the latest landmark was attained just 94 days after Locus reached its 400-millionth pick.

The 500-millionth pick was made at a VF Corporation Fulfilment Centre in Prague, Czech Republic and the item picked was a pair of Vans Old Skool shoes.

[www.locusrobotics.com](http://www.locusrobotics.com)





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# Good Works

TGW says it is more than a systems specialist, with a specific mission to do something good in the world. *Paul Hamblin* meets David Hibbett, CEO Northern Europe.

Austrian-founded TGW now has a growing global footprint, spearheaded by its successes in Europe and North America. It has shrugged off the challenges brought by Covid by also capitalising on the opportunity offered to the automated logistics sector as consumers fled online. In September, the Group announced that incoming orders surpassed €1 billion for the first time, while EBIT cracked the €50 million barrier. Over €200 million is being invested in location expansion.

Yet TGW says it is more than a successful integrator with a keen eye on the bottom line. Meaning and values matter at TGW. It is committed to giving something back to both its employees and the wider world. A chunk of profits is spent by its charitable foundation to provide educational chances for deprived youngsters, while a unique Dual Employee Participation Scheme returns 10% of profits (if targets are hit) directly back to staff. They can choose how they wish to take this share – as money, as extra leave or a new, beneficial offer focused on health. In 2021, €7 million was shared in this way among 3,766 global employees.

David Hibbett, CEO Northern Europe, is very proud of the scheme. “We are here to help our people develop and grow, it’s the core mission of the company,” he tells me. “It helps us to gain very good people, too, because they like the value that it adds.”

Hibbett’s domain comprises the UK, Benelux, Scandinavia and an expanding base in Lithuania. He is bullish about growth opportunities globally, but is particularly excited by what his own territory can bring to the Group.

“In the past, we saw Scandinavia as an export market, but it wasn’t consistent for us. So we have built local infrastructure, presence and knowledge to bring that consistency. Our ambition is boundless, frankly. Yes, it is geographically challenging, due to the large land mass but that is more than compensated by the rich economies, working and social standards and regulations, all of which point towards greater automation. We’ve been there two years now, and we’re there for the long haul.”

In terms of product offering, TGW is strong in fashion and grocery as well as industrial goods, scoring big successes with its FlashPick offering, launched in late 2016. David Hibbett explains how it fits in to the broad strategy: “We have product categories, then we have solutions and systems. In product, we have lifecycles that we manage, so miniloads, for instance, are more mature products that are likely to come to an end of life at some point, as they are transplanted by newer

technologies. We also have shuttle and alternative technologies that sit elsewhere in the product lifecycle.

“But the core base of our system – our system being a collection of products and hardware, including software – is FlashPick, essentially a goods-to-man shuttle engine system. From that we offer variants around it and our development program aims to fill in the gaps on the inbound towards that system and the outbound from it. It has been a fantastic commercial success for us and operates at a very competitive price point.”

Globally, TGW will invest over €30 million in Research and Development the current year. David Hibbett confirms that software, robotics and AI are absolutely key to the company’s future and that, should there be any appetite for acquisitions, it is most likely to focus on this area in order to feed into TGW’s existing proven systems capability.

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# Single Source Solutions

Two new solutions are set to play an important role in AGV and robotic cost-effectiveness and safety. *Dominik Kübler* explains the technology in detail.

Conductix-Wampfler has developed the **Wireless Charger 3.0** for transmitting energy to individual vehicles and for charging their onboard energy storage systems. Compared to existing offerings, this new generation of inductive chargers for contactless charging of autonomous, battery-powered vehicles features higher efficiency and better performance at a smaller size. The **Wireless Charger 3.0** meets all Industry 4.0 requirements and enables automated, contactless charging.

Thanks to the wireless charging option integrated into the process flow, it is possible to use smaller and lighter energy storage units on AGVs and AMRs. Lithium-ion batteries are conserved, which contributes to significantly longer service life of this still relatively expensive component of a robot. This charging philosophy also contributes to higher system availability and greater cost-effectiveness. Last but not least, a wireless or non-conductive solution offers advantages in terms of safety. Inductive technology scores particularly well in challenging environmental conditions, such as cleanroom applications or applications with a heavily polluted environment. Since there is no contact between the vehicle and the charging infrastructure, wear and tear is significantly reduced, human interaction becomes unnecessary and the entire process is made completely autonomous.

## Scalable and specific lithium battery

Since the system performance of AGVs and AMRs is dependent on each individual component, Conductix-Wampfler offers the entire energy system. In addition to the **Wireless Charger 3.0**, Conductix-Wampfler also provides the onboard energy storage systems suitable for the application as a complete package. The scalable lithium-ion battery modules are designed to meet application-specific requirements. Voltage levels

of 24-60V and capacities of 30-400Ah are available to enable fast charging and discharging with high charge cycles. All battery modules include an integrated battery management system (BMS) that can be flexibly arranged to make the best use of limited space. The BMS communicates battery status information to the charger and, where required, to the higher-level peripherals. Since it is always necessary to consider size when designing AGVs, the high energy density of the battery cells used and the very compact and scalable assembly method offer clear advantages for designing new vehicles.

Combined with the unique features of the **Wireless Charger 3.0**, it is possible to reach a recharging current of up to 3C. This allows for the battery to be charged at a multiple of its capacity, minimizing non-productive time. The opportunity charging philosophy of the **Wireless Charger 3.0** guarantees 24/7 use of AGVs and AMRs, resulting in a strategic advantage at highly-automated production lines and logistic hubs. The combination of charging technology and energy storage solutions eliminates costly adaptation processes and integration problems for customers, resulting in a coordinated, complete solution.

## Safe emergency stop

The ever-increasing number of AGVs and AMRs in plants can make it difficult to control individual devices, which poses a challenge to safety and security. In particular, handling global emergency stops of autonomous robots within a defined area is a critically-important task. When



AGV fleets from different manufacturers are moving in a network, this becomes even more complex. Compared to those with a hard-wired data link and continuous power supply, wirelessly controlled vehicles with onboard energy storage are notably more complex. *Jay RadioSafe* from Conductix-Wampfler has been developed to intelligently meet this exact challenge.

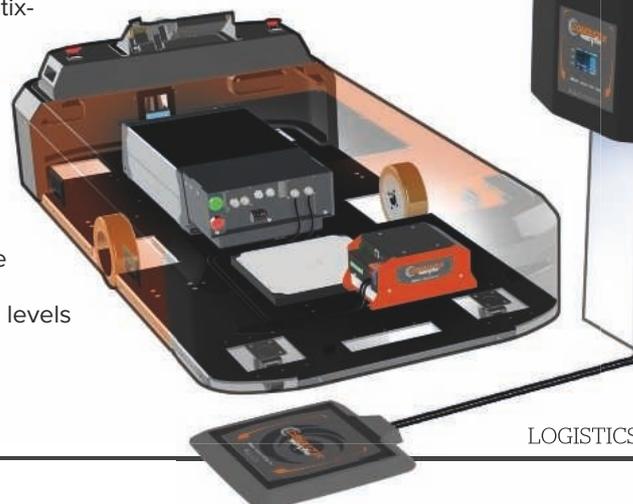
The solution includes a wireless safety stop for mobile vehicles in industrial production lines. The system handles the transmission of a safe stop command between a non-moving controller and various mobile vehicles such as AGVs or AMRs. It consists of a safety radio transmitter and numerous safety radio receivers, allowing even large fleets to be handled with careful precision. *Jay RadioSafe* is a fully type-tested system with SIL3 and PLe safety levels, certified by TÜV Süd.

Beyond a safe emergency stop function, the system can transmit controlled stop functions or delayed stop functions. The delay ensures that vehicles do not stop and block fire doors or evacuation routes within a facility.

Whether designing or adapting the existing energy transmission philosophy, charging and energy storage in autonomous vehicles or safe emergency stop concepts – Conductix-Wampfler provides integrators with intelligent solutions from a single source.

*Dominik Kübler is Global Business Development Manager at Conductix-Wampfler*

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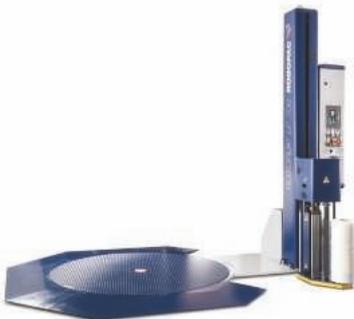
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# Green Doors

Europe's most modern bus depot in Hamburg has paved the way for the future by equipping its facility with 32 Efaflex high-speed doors.

Greenery is growing on the roofs of the huge steel carport of the Alsterdorf bus depot in Hamburg. Thick electrical cables with plugs, like filling station nozzles, hang from the ceiling structures. Through these cables and plugs, 20,000 volts of operating voltage flow into the batteries of the many electric buses parked onsite. Germany's first bus depot completely designed for e-mobility has been in operation since April 1, 2019. Buses pass through Efaflex EFA-SST Premium high-speed spiral doors for cleaning, maintenance, and repairs in the halls on the 45,000 square metre area at the 'triangular junction' between Alsterdorf's U1, urban railway and freight bypass line.

## Emissions-free site

Premium, high-speed Efaflex doors are part of an overall concept for an emission-free site. Thanks to their rapid opening and closing speeds, they ensure that the least amount of energy is lost when the buses enter and leave the maintenance and repair hall. Furthermore, they provide safety in the XXL workshop. These areas can only be accessed by employees familiar with the special drive-related features of the ultra-modern e-buses. Likewise, the adjacent personnel and escape doors cannot be accessed from outside unless authorized.

As the leading industrial door manufacturer in the world, Efaflex offers thermally separated EFA-THERM® insulation laths as standard for the EFA-SST®. This allows for outstanding thermal insulation values of between 0.66 and 1.52 W/m<sup>2</sup> K to be achieved depending on the door size. The new door leaf for the Efaflex industrial doors is extraordinarily robust, durable, sealed and sound-insulating. As the bus depot is in the city district, noise protection

for nearby residential areas plays a significant role, while the EFA-CLEAR® transparent laths allow natural daylight to flood the halls. The quantity of transparent laths can be customised, with the Hochbahn bus workshop choosing to feature them in the upper sections only in order to avoid the dazzling effects when the sun is low.

The spiral track of the door's mechanism is designed to guide the laths entirely without contact, without wear, and with minimal noise. Under even the heaviest industrial loads, the EFA-SST®-Premium doors can effortlessly manage up to 250,000 opening cycles per year.

## Door layout and features

One EFA-STR-L and one EFA-SRT-FR respectively were mounted to separate the warehouse and workshop as well as emergency escape route door. All doors are equipped with the patented EFA-SCAN® laser scanner; a safety device which detects movement better than any other technology on the market. The laser scanner covers the entire area in front of the door and using a complex software algorithm prevents triggering during rain, snow, and extraneous light. Therefore, EFA-SCAN® is one of the few laser scanners which are also suitable for outdoor installation.

Should a laser scanner gives the command to open one of the 30 doors, the bus makes its way within seconds into the workshop with 14 tracks and the most modern rooftop workplaces for the Hochbahn e-bus fleet. Up to 60 employees work in the maintenance and repair hall as well as in the paint shop and the environmentally friendly carwash, which uses treated rainwater.



Approximately 600 bus drivers have found their new professional home in the bus depot where their e-buses are charged overnight. This is ensured by the first Hochbahn-owned transformer station connected to the Hamburg power grid. It converts the voltage from 110 kV to the required 20 kV. The total connected load is 25 megawatts which corresponds to the requirements of a small town with 40,000 inhabitants.

The facility has been designed for the maintenance and charging of 240 vehicles, with 26 additional vehicles to be added to the electric fleet, and another 30 due to follow. They may cost roughly twice as much as diesel engine buses, but by 2030, Hochbahn aims to have replaced the last diesel bus with the environmentally friendly emission-free vehicle.

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# Stacker Crane Upgrades

It is a challenge to maintain and upgrade automated warehouses designed, manufactured, and installed over the last 40 years.

*Joerg Marx* explains why stacker crane replacement could be the right choice.

Stacker cranes for pallet storage and retrieval in rack systems were developed in Germany in the early 1960s. Early versions were operated via on-board control cabins from which an operator controlled the crane much like a forklift, but with taller reach heights and increased product density. By the mid-1970s, automated stacker crane systems were being deployed around the world, produced by a wide range of equipment manufacturers. These systems enabled storage at heights exceeding 100ft.

## History of AS/RS applications

Through the late-1970s and into the 1980s, a large number of systems were installed throughout North America. These early systems were designed with an emphasis on providing increased reserve-stock inventory at the manufacturer level. The systems were not designed for fast performance and high inventory turns. The primary business driver was providing stock on-hand near point of production, while minimizing warehousing space and maximizing space available for production, especially at locations where land for plant expansion was limited.

In the 1970s and 80s demand planning was in its infancy, sophisticated ERP systems and flexible manufacturing weren't yet buzzwords, and inventory on-hand is what fed the manufacturing machine and kept orders rolling out the door. This period was the heyday for pallet ASRS in North America. As a testament to their durability, many of those systems are still in use today – companies reliant on systems and machines designed, built, and installed four decades ago.

In the 1990s 'inventory' was a bad-word and 'just-in-time' was the new business mantra. With reduced stock on-hand, there was a drive toward increased system performance. At the same time businesses were working to reduce inventory on-hand, the world began shifting to production based in China, Mexico, Eastern Europe and other lower-cost countries around the world. Just-in-time supply chain planning became the norm, with safety stock measured in days, not weeks or months. Supply chain flexibility was a valued attribute and large warehouses to store inventory did not fit the business attitude of the day.

Automated storage and retrieval systems in the 1990s adapted to meet the needs of the new business environment. There was a rapid focus on increasing system performance, allowing higher levels of inventory turns and faster order fulfilment. Promotional literature of the day nearly always touted crane speed as a key product attribute. If your crane didn't boast speeds of 900 ft/min, you weren't a real player. Never mind that at those speeds the cranes were hard to control and to regain system reliability the equipment was inevitably slowed down. Cranes of this era are often plagued with structural issues (mast cracking, wheel and rail wear, for instance). The rush to increase performance often outstripped engineering budgets, abilities, and tools available at the time.

The systems of the 1990s and early 2000s were smaller in size (number of load units stored), but were often high-performance systems deeply integrated into users' production and/or order fulfilment operations. This is both the advantage and Achilles heel of the technology. System reliability and availability was critical – systems down for service often meant that entire production lines came down with them. If you want a technology to get a bad rap, just take down production! From the 1970s through the late 1990s, most systems were installed at the manufacturer level, including a large install base in food, automotive, manufacturing, chemical, and pharmaceutical industries.

In the 2000s, systems began to be installed by companies in warehousing and distribution, with a number of systems installed by companies for grocery distribution in ambient, chilled, and frozen. The beverage industry (soft drinks and alcoholic) also installed a number of systems, both purely for distribution and as plant-attached warehouses. Through this period, a number of systems were installed for the automotive industry, but most systems were used for sequencing buffers, rarely for reserve stock inventory.



Fast forward to 2010s and today, and new industry verticals are adopting ASRS technology for both old and new reasons. The cold storage industry has rapidly embraced the technology. Finding people willing to work in a cold storage warehouse has become increasingly difficult (and expensive). Robotic machines that don't mind the cold are a compelling business case when the alternative is lack of workers at nearly any price. Energy saving is the cherry on top. Ever present is the need to hold inventory (small as it may be) close to the manufacturer, whilst preserving all available space for production expansion.

Grocery distribution has been an aggressive adopter of the technology over the last 10-15 years. Margins are famously tight in the grocery business and automation provides an avenue to squeeze the last few points of cost out of the equation, especially in chilled and frozen applications. The next decade or two is sure to see a resurgence in building supply chain resilience (a.k.a. more inventory) and reshoring manufacturing to be closer to the end consumer. Both factors point toward increasing adoption of automated storage and retrieval systems.

Operators of automated storage and retrieval systems from the 1970s through the early 2000s are ready for upgrades, to new machinery that increases reliability and serviceability. Replacing old machinery means designing new machines to fit the engineered designs from years ago. In the automated warehousing industry, Dambach Lagersysteme is the expert at designing new cranes to fit old rack systems, including removal of old equipment and installation of new equipment in live/running production environments.



### Challenges of crane replacement

There are several challenges that make replacement of these old machines difficult.

One, new crane models must be designed to fit the racking systems of 20, 30, 40+ years ago – including first load level, top-load level, aisle widths, top-guide-rails, and clearances. Modifying old rack structures (especially rack-supported-buildings) ranges from cost-prohibitive to impossible. Most new crane manufacturers are focused on building standard models for new systems. There are only a handful of crane manufacturers with the engineering ability and manufacturing capability to build drop-in replacement cranes. In the case of speciality aisle-changing cranes, the vendor list worldwide only has a single name on it: Dambach Lagersysteme.

Two, many cranes were installed as part of new building construction years ago. Now old equipment must be removed from existing buildings and new equipment installed. Dambach has removed and installed cranes using in-rack winch-systems with new cranes built with custom-length mast sections to keep lift weights in a reasonable range. Often adding to the challenge is that over the years, buildings have been expanded and changed, land-locking equipment with surrounding structures. Dambach has replaced cranes using helicopters to lift old cranes out and put new cranes in.

Three, these systems are mission critical for nearly every company that uses them. Projects are always split into phases where cranes are removed and installed one at a time. This adds an extra challenge scheduling crews and managing installations, especially when parts of the installation are weather dependent and managing shifting schedules on installation of 400 to 500 cranes per year around the world. It won't be easy, but it's not our first rodeo.

*Joerg Marx is Head of Sales at Dambach Lagersysteme Inc.*

[www.dambach-lagersysteme.de](http://www.dambach-lagersysteme.de)



# Aiming For The Stars

Warehouse robotics is becoming more versatile, as expert manufacturers address the vexed issue of squeezed warehouse space.

Up to now, it's been fair to visualize Autonomous Mobile Robots (AMR) as ground-level operators. From the sci-fi robot canon, the model would appear to be R2D2 from *Star Wars* – think squat-sized workhorse performers built to move goods from A to B from positions at ground-level, or near to it, at least.

The warehouse automation world may now be set for a significant change, with the news that globally growing AMR specialist Geek+ has launched the RoboShuttle RS8-DA, an 8-metre high flexible arm robot. With a firm eye on the industry's unstoppable drive for height to seek out more storage space from squeezed site physical footprints, the new robot that will enable customers in the warehouse automation sector to – literally – aim higher in a way they've not been able to before. Compatible with 8-metre-high racks, and totes, cartons, or boxes of varying width, the Chinese-founded innovator says the robot can improve space utilization by 5x.

Liu Kai, co-founder and VP of smart warehouse products at Geek+ says: "With e-commerce and warehouse rental spikes, businesses need a flexibility and space utilization that traditional automation does not provide. Our engineering teams are continuously developing innovative solutions to meet this demand and allow our clients to remain competitive while providing a safe working environment to their employees."

Built on a slim and robust chassis design, flexible doorframe, and double deep telescopic fork arms, it is significant that the robot can navigate narrow aisles. With a hitherto unreachable maximum height of 8145mm using its fork arms, the robot can access inventory rows at depths as low as 285mm and as high as 7820mm, targeting horizontal as well as vertical warehouse space.

Equipped with an intelligent depth camera and high precision sensors, the robot can adjust its arms to pick boxes of varying sizes, optimizing overall shelf space. The storage location can also be allocated according to the size of the box, improving inventory organization. Connected to the WMS and driven by intelligent algorithms, the robot autonomously transfers up to eight totes to and from the workstation, automating picking, replenishment, reverse logistics, and inventory checking processes.

The launch follows hot on the heels of another recent first for the company, with the news that its forerunner of the new model, the RoboShuttle R5 (denoting a 5m height capability), which was launched only in September this year, has won the European Product Design Award.

Jackson Zhang, President of Geek+ Europe, says: "We are very proud to receive this award and see it as a recognition of the ability of our engineers and designers to develop products that solve actual logistics bottlenecks by targeting the physical issue of space as well as a more e-commerce-driven business environment. Today, RoboShuttle has been deployed in over 10 countries. There is exponential interest in the solution, which optimizes space, ensures the safety of employees, and brings accuracy and flexibility to warehouse operations."

The Double Deep RoboShuttle can operate 1m narrow aisles, reach 5m high shelves, and use its extended telescopic arms of 1.5m reach to access totes of varying depth in one location.

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# Automation Enabler



A UK specialist is bringing a new business model to the automation and integration sector, which could be good news for SMEs.

Until now, automation projects have largely been for the mega players only. Only the Amazons, Tescos and Wal-Marts of this world have had the heft in terms of investment, capacity, footprint and staff resource to take expensive projects on with a clear ROI goal in mind and without disrupting their massive day-to-day operations.

But now the world is changing. Customer service requirements in terms of delivery speed, accuracy and personalization are requiring SMEs to think like the big players – and that means automation and digital transformation. The problem for smaller concerns and ecommerce start-ups embarking on such projects often lies in not having the staff bandwidth and expertise to make the jump with any confidence and without incurring damaging disruption to the core business.

This is where Big Box Group comes in. Initially a strong business as a storage and racking specialist, some five or so years ago its founder Iain Gillard began to embrace a new vision of where warehousing was going, in which scanning efficiencies, AGVs and robots and a greater automation emphasis were front and centre. He forecast that SMEs would need someone to help them through the process, to be a reliable expert partner guaranteed to get the job done – and, crucially, to be a single point of contact.

Jason Dyche, the company's Head of Automation, is himself a veteran of the German warehousing logistics optimization field. He bought fully into Iain Gillard's concept, joining Big Box Group in summer 2020, at the height of the pandemic and in the full knowledge that the need for such skills as Big Box could offer would be accelerated by the world emergency.

"What I liked about the Big Box concept was that, with our wide expertise, we could walk into almost any business and we could help them with anything, within reason," he reveals. "It could be racking, it could be a mezzanine floor, it could be a temporary building, it could be a scanning solution."

Does that not make them just another consultancy service, though? "Absolutely not," he shakes his head. "We are not consultants. We don't charge a consultancy fee. The idea is that we work in partnership, that we are trusted to get the job over the line. And for the client, the beauty is that they have one phone call to make each time, because we will do the rest for them. If the project is a small one, we know we can go back in confidence a few months later and they will want us to do another, larger job."

Big Box Group's automation suite of solutions has led to partnerships with AGV supplier Balyo, narrow-aisle UK forklift specialist Flexi and goods-to-person AMR provider GreyOrange. A

fruitful relationship has been established with fast-growing Munich-based wearables innovator ProGlove.

"The beauty of ProGlove is that it can provide a very quick fix in terms of ROI, perhaps 3-6 months compared to other automation solutions," explains Jason Dyche. "There's a fast turnaround, too - orders can be ready in a matter of weeks, whereas AMR and AGV implementation can be, say, 12-18 months."

He says the company will look at any project within the warehouse, from Goods-In to Goods-Out. With that flexibility in mind, how does he go about assessing what is right for a new client?

"I'll start by asking, 'What are your objectives as a business?' Let's be honest, the answer is usually going to be: 'We want to increase our turnover without adding to our overheads, in fact we would prefer to reduce those overheads'. My job is to establish how to do that for them most cost-effectively and appropriately," he says.

It means no two projects are the same. Currently he is working on a large asset-tracking project for a successful manufacturer which has grown so fast that its inventory has become haphazard; on developing a way to move butter from a pallet to a conveying system more efficiently; and on a scanning project (with ProGlove) for a major British supermarket chain.

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# Don't Forget The Floor

What is the first thing you think of when planning a Very Narrow Aisle (VNA) warehouse operation? Personnel? Trucks? Racking? Warehouse Management Systems? What about the floor?

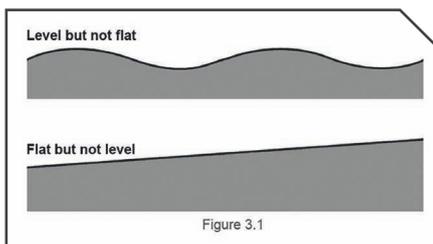
The floor? Of course, we need a floor - all warehouses need a floor to put stuff on. How would the Materials Handling Equipment (MHE) get about, or my staff? Would my roof and walls fall down without a floor?

Joking aside, you'd be amazed how many times Cogri experts hear people say: "Oh, I never thought about the floor. I came here to look at this racking system/forklift truck etc., and I never thought about what it would operate on!"

Concrete floors are the CoGri Group's business, so naturally, it would argue that the floor should be the first thing you think about when planning a new warehouse (or refurbishing an existing one). However, read on and let them explain why it should be your first consideration and, more specifically, why your warehouse floor should be flat.

## How do you define a flat floor?

A flat floor is one without any noticeable high or low points. So far, so easy. However, does that mean it is level as well? The image on this page shows that it can be otherwise.

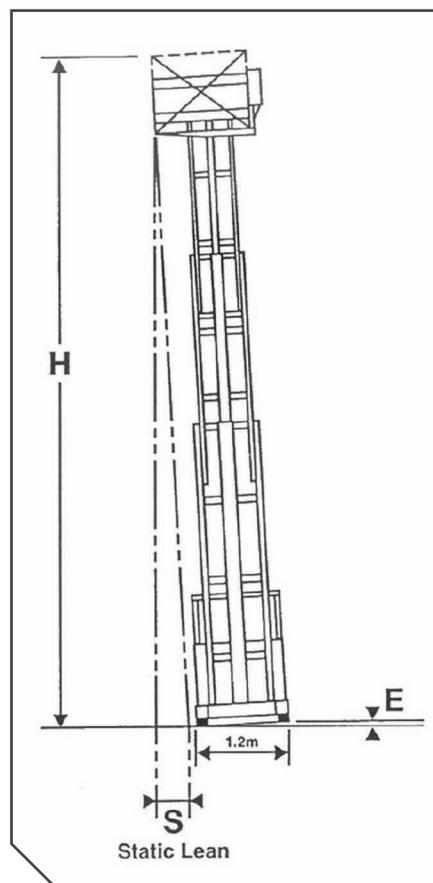


## Why does my floor need to be level and flat?

MHE used in VNA aisles usually operate in very confined areas, with minimal clearance in the aisles between the truck and racking. The floors need to be flat and level as any deviation may cause your forklift, reach, or VNA truck to tilt and sway. The higher the truck has to reach to pick inventory on the shelves, the flatter the floor needs to be to eliminate tilt from happening. With some trucks now reaching up to 18+ metres, the need for a flat and level floor has never been greater.

For example, if racking is 18m high and the unevenness of the floor creates a difference in elevation between the right and left-hand truck wheels of 12mm, the static lean would be 180mm, (assuming the mast is rigid and the centre-to-centre distance between the load wheels of the forklift truck is 1.2m). Engineering tolerances in the mast and the dynamic force when the truck is moving could even increase the static lean by up to three times that amount. Now, imagine sitting in a VNA truck that leans that far to the side.

With limited space, the truck's room to manoeuvre is reduced, often resulting in damage to the trucks, stock, and the racking due to collisions. Not only this, but the lift trucks cannot operate at maximum speed, which results in a loss of productivity and, therefore, cost-efficiency.



When floors have a poor surface regularity, it can also cause excessive vibration, increasing downtime and maintenance for the truck and leading to driver fatigue. Fatigue can mean more driver downtime and reduced morale.

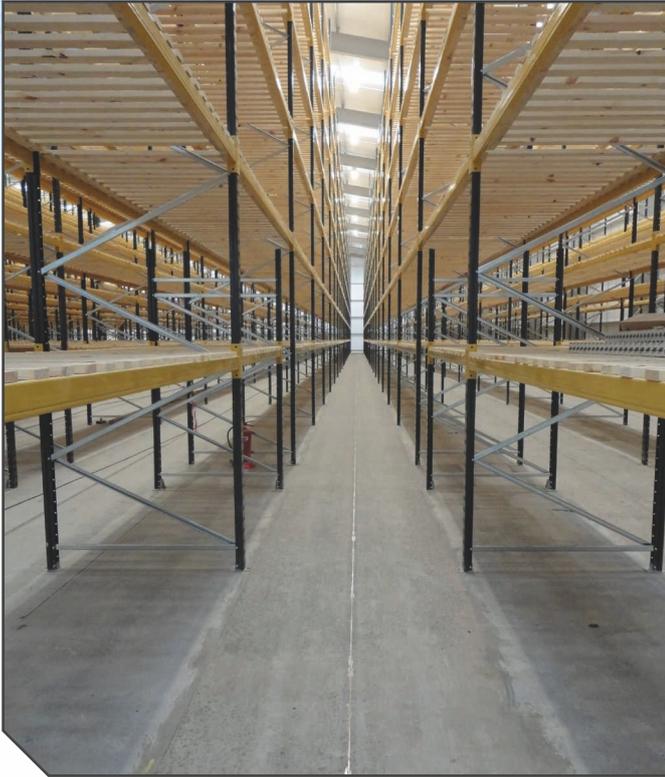
## How Do I Get a Flat Floor?

### STEP 1 – Defined Movement (DM) Survey

The first stage is to test the floors (new and existing) to assess compliance to Defined Movement flatness specifications. (Defined Movement floors are those where specialised MHE run on defined fixed paths within aisles.) The flatness specification the floors must comply with varies according to the height of the racking system serviced by the VNA trucks. For example, the previously mentioned 18+ metre racks would require a DM1 floor, as defined by Concrete Society's Technical Report (TR34) for when the racking top beam exceeds 13m. Other specifications may require different criteria to be adhered to.

Independent floor testing organisations, such as Face Consultants Ltd, use a profileograph to measure the continuous profile of a forklift truck's defined wheel paths. They then report on the areas which do not comply with the flatness specification.





**STEP 2 – Grind it Flat**

Once the flatness of the floor has been assessed, the most appropriate grinding method is determined. Manual grinding is used for minor irregularities, otherwise, Concrete Grinding Ltd use the world’s most advanced laser-guided floor grinding system – the Laser Grinder. Developed to operate in a working warehouse environment, the grinders do so with minimal disruption.

Laser Grinder and Laser Grinder XPT (‘Xtra Precision Technology’) machines are designed and manufactured in-house and capable of grinding floors to exacting standards of flatness and tight tolerances, far exceeding the requirements of any Defined Movement flatness specification.

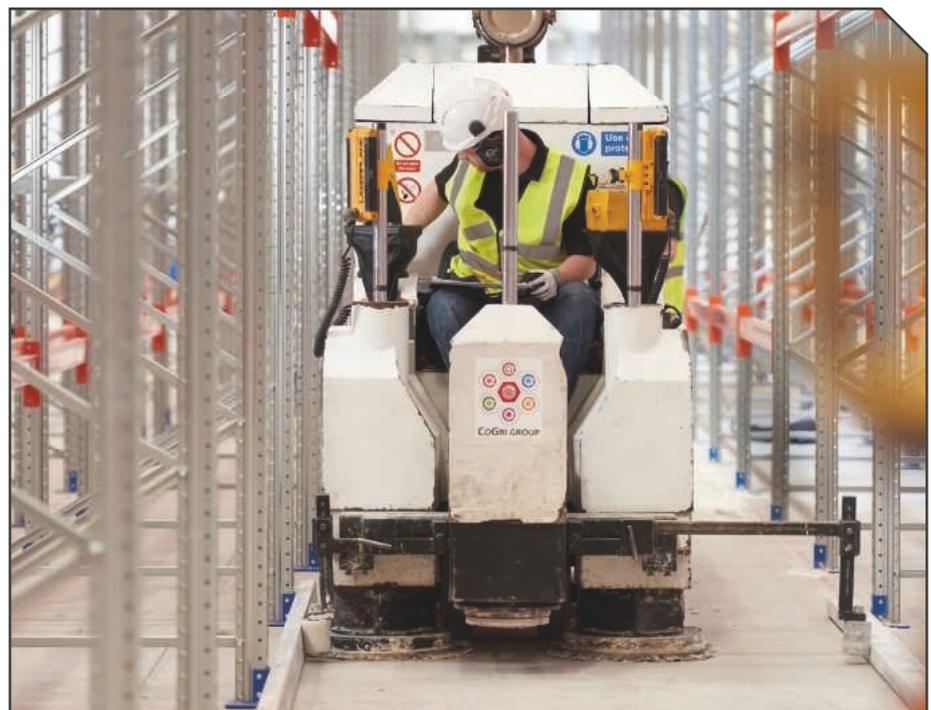
As Laser Grinders don’t need power cables or water pipes, they are completely self-sufficient, meaning they can work in one aisle at a time. They are also clean and flexible, delivering a wet, vacuum-enclosed grinding process. Therefore, airborne dust isn’t a problem and the machines can operate alongside stocked racks – even those stacked with food or pharmaceuticals. Not only that, but floor surfaces can also be used as soon as grinding has finished, meaning emergency stock retrieval isn’t a problem if needed.

No matter the MHE you now use or are planning to use in your warehouse, the floor your equipment is running on needs to be flat and level for cost-effective, productive, and safe warehouse operations. Cogri advocates making the floor one of your first (if not the first) considerations when adapting or planning a new VNA

warehouse operation, as you may save yourself a lot of time, effort, money (and grumpy truck operators) in the long run.

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# Collision Impact Protection

Creating and maintaining a safe warehouse environment is not just about traffic management, safety equipment or even training. It's about a comprehensive program that considers every option to prevent accidents and injuries to people, equipment, and facilities.

The warehouse is a hub of activity for storing, shipping, receiving, and circulating goods through the facility on the way to a destination. It's a vital link in the material handling chain. It's also a prime area for accidents.

The warehouse environment presents several potential safety hazards. Forklift and pedestrian traffic, noise, material handling, the amount of activity, distractions, tight spaces, blind corners – all are ingredients for cooking up an accident.

Several 'hot spots' in the warehouse are extremely vulnerable to collisions. One is a blind corner intersection. Pedestrians move in and out of the forklift driver's operational field of vision. When there is no separation between pedestrians and vehicles or when vehicles are moving at a higher rate of speed, the risk of accidents increases. Poor lighting, lack of warning signs and no barriers at crossing points further increase the risk.

Prevention measures include marked and designated accepted traffic routes, optimal lighting, warning signs, mirrors, barriers, railings and installing a collision warning system. Sentry Protection Products' Collision Sentry Corner Pro 211 is designed to create a

safer working environment by reducing or eliminating 'blind corner' collisions. Infrared motion detectors 'see' around blind corners and flash a warning to forklift drivers and pedestrians that a collision is possible. The product is self-powered, portable and deploys immediately.

Heavy lift truck traffic moving in and out of the warehouse at varying speeds, presents a danger to the building columns as well. The force of the tow motor impact can significantly damage structural columns, surrounding supports and – again – people and equipment.

Forklift vehicles need weight to lift heavy objects, but that weight isn't always easy to control, especially in tight quarters. The typical forklift system carries its load in front of the driver; a good idea for picking up and moving objects, but one that can lead to a severely obstructed view near the ground and in front of the vehicle. That obstructed view makes columns a prime target for repeated hits and significant damage – to the column, the forklift, and the operator. Underestimating the distance required for a forklift to come to a safe stop can lead to additional incidences of impact with structural columns.



Collision Sentry Corner Pro 211

What about racking systems? Racks are continually subjected to abuse and most of the damage is caused by impact from forklifts. Damage to the racks compromises the integrity of the structure; shifting the alignment of the stored materials and causing them to fall, leading to additional damage, breakage, and costs. The compromising effect of dings, dents and buckles accumulates until the structure can become unstable enough to collapse. Racking is made to hold up shelves; it's not made to withstand impact. In reality it has to do both.

Impact-absorbing products like rack protectors and column protectors provide excellent protection from lift truck/structure collisions and have the ability to sustain repeated impacts. Through research and development, Sentry Protection Products create and manufacture the highest quality column protectors (Column Sentry and Column Sentry FIT) and rack protectors (Rack Sentry and Rack Sentry CONTOUR) to absorb impact and reduce the severity of the collision damage.

Make safety a priority. Develop a comprehensive safety program for your facility, then implement and enforce it daily. The results will benefit you, your employees, and your business.

[www.sentrypro.com](http://www.sentrypro.com)



Rack Sentry rack protectors



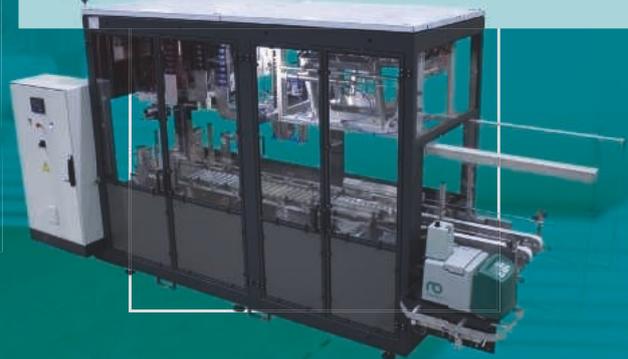
Column Sentry FIT column protector

Sealed Air<sup>®</sup> brand **I-Pack**<sup>™</sup> and **e-Cube**<sup>™</sup> void reduction systems, cut logistics costs and provide short payback with any order profile



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# Life Aware

The latest workforce management technology can be an important tool in boosting staff morale and retention. *Paul Hamblin* talks to a major provider.

Recent research for human capital management specialists UKG reveals 87% of UK employees are being propelled into the future of work by accelerating digital transformation projects. Tellingly, the research claimed that 86% of these workers are enjoying the benefits of these new innovations, calling for organisations to recognise this adjustment and respond accordingly.

Neil Pickering, Industry and Content Manager EMEA for UKG, says that choosing the right digital solution to support your HR department will not only help to control costs and boost productivity, but can also work to enhance employee engagement and drive true cultural change.

Historically, workforce management from a business perspective is about driving efficiency, cost control and productivity and also about ensuring compliance. Neil Pickering argues that while those factors are still a core part of the jigsaw, they can also serve an important need, by giving some very welcome control to employees – which in turn benefits the employer. Happy staff are staff who will stay, and it only takes a brief glance at recent news headlines to see how vital a stable workforce is to efficient, effective supply chains.

“It’s about improving lives for businesses, by boosting productivity and efficiency, but it’s also about employees, giving them autonomy and choice,” he explains. “We call it being Life Aware. By considering employee needs, perhaps by giving them more control, it will affect positively how you attract and retain those people. This is where our future is. So our technology is not just at the service of the organisation but at the service of people, too.”

It sounds great in theory – but what does giving staff more control look like in practice? “Self-service, easy-to-use apps enable staff to arrange shift swaps at short notice, or to arrange holidays; these apps can also proactively suggest and help arrange training needs, for instance. A manager’s time is freed from the paperwork to focus on productivity,” he suggests.

Such self-service actions are possible because the technology is always ensuring that an organisation’s resources are being used as effectively as possible, that the right number of staff are in the right place at the right time (both temporary and full-time accounted for) with forensic forecasts based on precise historical data ensuring that rotas and schedules are accurate, up-to-date and efficiently resourced. It is also – and this is another important factor in staff morale scores – making sure that staff are paid the right amount at the right time, with overtime accurately measured.

UKG’s view is that employers have begun to consider how to attract people other than by just paying more money. It has coined a term for it: Life-Work Technology™. “We work with over 50,000 customers globally,” says Neil Pickering. “Our software has to be flexible enough to cope with local needs, local legislations, there is no one-size solution because every organisation’s need is different.”

UKG is a new name for a seasoned business, comprising 43-year-old workforce management specialists Kronos and HR delivery experts Ultimate Software, who merged in April 2020. “It’s the perfect marriage,” reports Neil Pickering, “Very little

customer overlap, about 5000-6000 employees each, two US-founded businesses with a strong global footprint.”

The logistics industry – from ports to 3PLs to warehouses – has led the way in adopting innovative workforce management processes, he relates. “It’s the backbone of the supply chain and it is the logistics sector that businesses have had to turn to to change business models.”

His message is that digital transformation is about people processes as well as a piece of technology. His advice? “Engage openly with your chosen supplier. Make sure both parties agree on what you’re endeavouring to do. In UKG’s case, we have a lot of experience, so we’ve usually got pretty good advice on what will work and what won’t.”

Whatever the circumstances, there’s no time to waste. “You can’t wait for digital transformation to come to you,” he urges. “If you haven’t started the journey soon, it will be too late.”

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# Customs Skills Shortage

Labour shortages across logistics functions have been hitting the headlines. Lack of Customs compliance expertise might be next to cause delays, explains *Leigh Anderson*.

According to the National Audit Office, as a result of Brexit 145,000 companies whose international trade has hitherto been solely within the European Union are now having to master Customs procedures for the first time, generating over 200 million extra customs declarations, each of which comprises multiple documents.

The British International Freight Association (BIFA) estimates that 40–50,000 extra staff are required. However, there is nothing like that pool of talent available. Much of the existing skill base is concentrated, understandably, around ports and airports, so businesses seeking to establish their own Customs functions are competing for staff against freight forwarders, customs agents and of course HMRC itself, which has been looking for several thousand extra bodies. Salaries for anyone with even slight experience in the field are, inevitably, being driven up.

Brexit isn't the only pressure, though. The proportion of UK trade with non-EU countries, with all their individual Customs requirements, has been growing for many years. New trade agreements with non-EU states continue to be signed, all with subtly different provisions and implementation dates. A new complication is the establishment of 'Freeports'. The detail of how these will work is still sketchy, but is potentially important even to firms who aren't located within the designated Freeport area.

Arguably, companies, and the nation, should have seen this coming, though there are mitigating factors: quite what the post-Brexit arrangements would be was unclear until very late and few anticipated the strict 'letter of the law' approach that the EU has adopted – not just in Northern Ireland trade. Even now, stages two and three of the 'Border Operating Model' have not come into force, although they may do so by the end of the year.

More fundamentally, when the Union Customs Code, which regulated and simplified all trade into, out of, and through the EU, came into force in 2016 it was understood that the whole process would be digital by 2020. The European Commission is now talking about 2025. Europe, and HMRC, continue to trial elements of the required software. Meanwhile, imports and exports are still governed by a mass of physical paper, which must be completed in the correct colour of ink!

Outsourcing the problem to customs agents, forwarders or 3PLs isn't an answer – they too are struggling for capacity – and will charge accordingly. Nor is it a question of training up a few clerks in additional skills. For most companies a whole new full-time function will be required – we have been speaking to one company that has been trying to recruit 300 staff across five offices.

So at the administration and clerical level, many companies will have to recruit and train up staff with absolutely no previous experience in Customs administration. There are no specific qualifications in this field, but training can be sourced through a number of commercial providers, and also through bodies such as BIFA, and the Institute of Export and International Trade. The Apprenticeship Levy can be applied to some courses in international trade, although sadly HMRC's Customs Training Grant scheme for SMEs was closed in July.

More fundamental, though, is the management and direction of a new Customs compliance capability. We see two distinct requirements.

Firstly, businesses will need managers who understand the Customs environment and how it is likely to evolve in the future. What are the workflows? Which trades should be managed in-house, or



*Leigh Anderson is Managing Director at Bis Henderson Recruitment.*

are there particular circumstances or complications (bonded goods, perhaps?) where use of an agent is preferable? How many staff are needed and in what roles, from clerks and administrators to international trade specialists? What are their training requirements now and in future? What would future career progression look like? Are these roles prime candidates for flexible working/ working from home or even working from another country?

Managing the creation of the new function this way might be a case for an Interim Management appointment. Once the function is up and running a very different skill set may be required. Effective Customs administration demands scrupulous accuracy against inflexible timescales, with all the capacity for error that the current manual systems and the complexity of the task inevitably bring.

Here, beyond understanding of international trade, the most relevant experience may not be in the minutiae of Customs clearance, but in the motivation of operations such as call centres, customer service centres, or remote teams. The pool of relevant talent may be much wider than it first appears.

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# Self-Employed Soother

The recruitment and onboarding of self-employed workers can be a slow and painful experience for logistics firms. A new software solution claims to make the whole process easier.

Regardless of industry, companies are always looking for ways in which they can improve efficiency and help their workforce to get the very best results. This can come in many forms: changing ways of working, streamlining processes and of course by harnessing technology and innovation.

One key area of strain for the logistics industry at the moment concerns recruiting and onboarding new self-employed subcontractors. The issue has, of course, been exacerbated by the dearth of available self-employed drivers following Brexit.

Traditionally, recruiting new self-employed delivery drivers has involved advertising the role, finding potential candidates, contacting each of them individually and then after an interview process manually sorting all of their documentation including driving licence, ID, toxicology, tax and right-to-work checks. All of this can be extremely laborious and time-consuming for staff and an area of accepted inefficiency for firms across the UK.

Now, this recruitment and onboarding process, as well as other areas such as route-optimisation and finance, are being reinvented with software and

platforms to reduce the workload on staff and provide further protection to each business around finance and compliance.

James Orton is Chief Product and Technology Officer at Wise, a Birmingham-based technology firm that specialises in self-employment and works within the logistics sector. He said: "Following the launch of the Wise platform in April, we've seen first-hand how logistics firms of varying sizes across the country are adapting and are working tirelessly to meet the ever-high demand from businesses and individual customers across the UK.

"As we approach the peak period for deliveries ahead of Christmas, there will be an understandable surge in demand and therefore even more emphasis on delivery service providers to recruit and onboard more self-employed drivers.

"We're aware that with the current shortage of available drivers and a long backlog of new drivers going through the DVLA testing process, this peak period is going to be unrecognisable from any in years gone by. However,



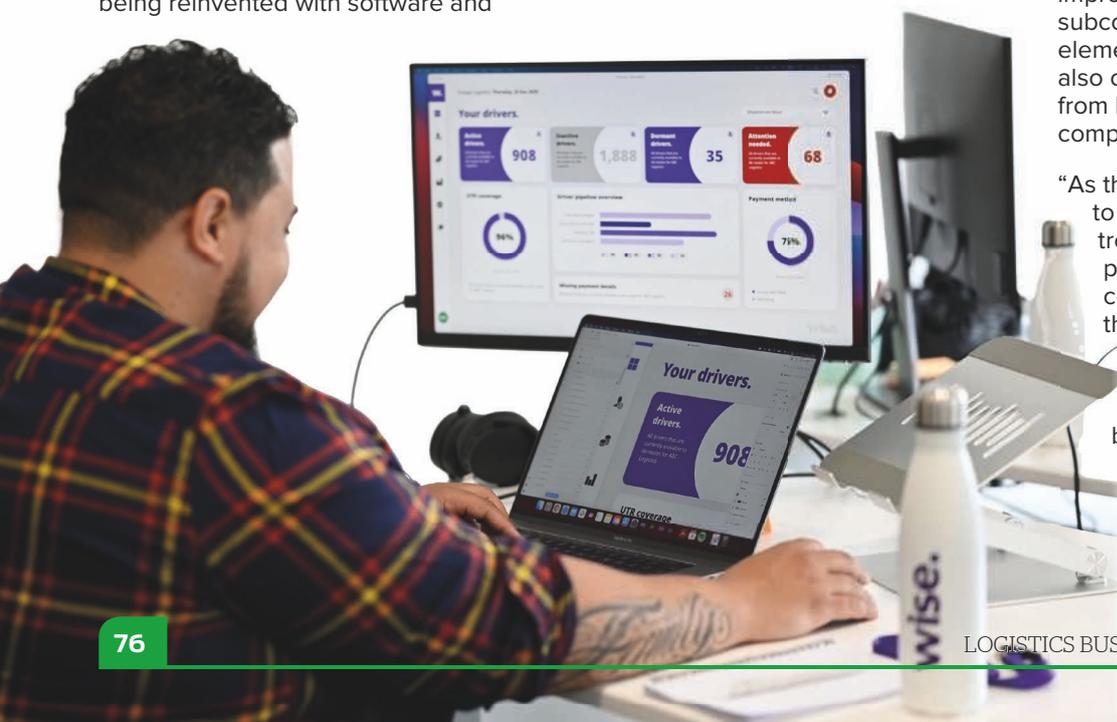
as the industry is beginning to truly embrace technology and digital innovation, this is already providing much-needed relief to firms regardless of their size."

Trade bodies and member organisations across the industry are continuing to lobby the government to make changes to ease the driver shortage. Amid worrying headlines about food shortages at Christmas, the Confederation of British Industry (CBI) has said that the UK's economic recovery is at risk of being undermined if rules around new work visas for foreign workers are not relaxed.

Among this external wrangling and uncertainty, businesses must ensure their self-employment experience is positive and stress-free to try and retain their current subcontractor workforce in a competitive environment. Orton claims that, by harnessing cutting-edge software, firms are now able to improve the way they engage their subcontractor workforce across all elements of invoicing and finance, while also creating "rock-solid protection" from HMRC enquiries around compliance.

"As the sector continues to adapt to this changing landscape and troubled outlook from a personnel perspective, businesses that continue to integrate and welcome the latest technology into their processes will unquestionably benefit from a natural competitive advantage through boosted efficiency," says Orton.

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# Printing Sustainability

*Amine Soubai* explains how top manufacturer TSC Printronix Auto ID is addressing the growing importance of sustainability.

With over 65 years of combined industry experience, TSC stands for reliable thermal printing solutions with its two strong brands, TSC and Printronix Auto ID. Our diverse products range from cost-effective entry-level printers, flexible mobile printers and efficient desktop models to high-performance industrial printers and RFID printing solutions. The portfolio is complemented by innovative, cost-effective colour label printers and a wide range of consumables perfectly designed for the different printing systems.

Our solutions are renowned and respected for robustness, performance, safety and, above all, durability.

Our product development takes place in our own research facilities, we manufacture in our own factories and we sell our products via a global network of qualified partners, distributors and resellers. By doing this, we ensure that we have regional representation in most countries around the world so that our customers are never too far away from a support and maintenance resource.

## Printing systems

Long-lasting components and operating cycles reduce environmental impact and conserve precious resources. With excellent service and customized service packages, we also ensure smooth operation throughout

the entire life-cycle of our printing systems - and thus also extend their service life.

We also focus on the circular economy. Components and raw materials used should be returned as complete as possible to the production process or disposed of in appropriate recycling cycles.

In parallel, we are continuously working to reduce energy and material consumption through intelligent battery, energy and print management. Many of our printers are ENERGY STAR® certified. Thanks to our innovative "Thermal Smart Control" printhead technology, the working area of each individual pixel can be precisely tracked and the best time calculated to produce more sustainably precise printing and therefore clearly legible labels. Our latest models already use our Thermal Print Head self-diagnostic tool - the sophisticated mechanism detects the current status of the printhead in real-time and ensures permanently high print quality with maximum efficiency.

## Labelling process

Incorrect or illegible barcodes are a wasteful burden on the environment, as are damaged labels. The high-performance industrial printers of the T8000 and T6000e series of our Printronix Auto ID brand are therefore also available as ODV models. These



*Amine Soubai is Managing Director, TSC Auto ID Technology*



*The DA220 is perfect for printing on linerless labels*

optional devices automatically verify 1D and 2D barcodes, such as Data Matrix or QR codes, as the labels are, depending on the model, and immediately remove bad labels from circulation. ODV is the industry's first fully integrated system that prints, verifies and validates 1D and 2D bar codes in one step. The built-in data verifier evaluates each barcode against ISO standards 15415, 15416 and 15426, ensuring only 100 percent readable barcodes enter the supply chain. Up to 50 barcodes per label can be verified. Thanks to advanced functions, the verifier can be easily and quickly integrated into existing applications. These models also feature an intelligent temperature management system for longer printhead life and excellent print quality, even at the highest print speeds.

## Labels

When it comes to labels, the rule is: as little material as possible and as much as necessary! In principle, a



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Alpha-2R

Alpha-4L

TDM-20

TDM-30

lot of information can be included on a label, even on smaller formats - even miniature - with 300 or 600 dpi printers. Packaging and its labelling therefore do not have to be oversized. Furthermore, label manufacturers are working flat out to develop even thinner labels.

With regard to the material itself, the ideal should be for the packaging and label to be of the same substrates. This way, they can they be fed into the appropriate recycling streams and reused. With PP-, PE- and also with bio-based materials, there are already a number of options available today,

as well as an established recycling economy. However, we do not see their exclusive use in the future in labelling for various reasons.

Even though PET, in particular, is highly valued, widely adopted and also very cost-effective - we need a real mix of different solution approaches, materials, technologies and recycling processes, particularly in reducing plastic waste.

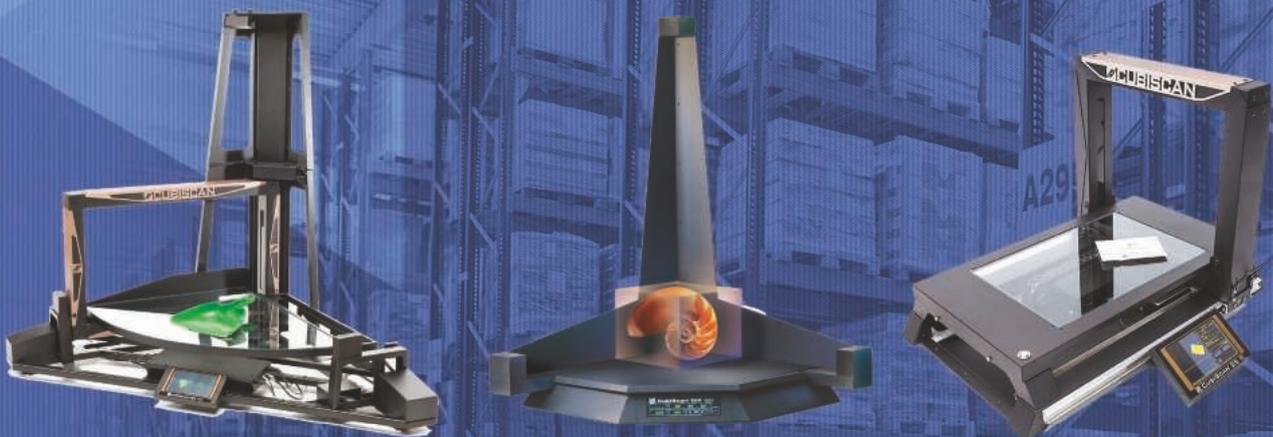
In addition, we already offer a wide range of linerless labels, on a roll with no backing sheet between the adhesive and the label itself. To

prevent labels from sticking together, they have been surface-treated, usually with a special silicone layer.

Linerless labels are limited by temperature sensitivities, but companies can reduce their waste and increase their efficiency, as up to 40 percent more labels can be produced on a roll. Their production is also resource-friendly, as fewer raw materials are used compared to conventional self-adhesive labels, which are widely used. Less storage space and transportation is required.

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# Service and Security

When a major European consumer electronics supplier needed to hit a wide range of packaging objectives in one hit, Sealed Air stepped up.

Esprinet describes itself as more than the leading European distributor of IT and consumer electronics – it is the point of reference and meeting point for producers, suppliers and users of such technology.

Italian-founded but now with a substantial footprint principally across southern Europe, Esprinet supplies over 130,000 technology products (including PCs, printers, accessories, software, smartphones, audio-video, TV, gaming, home appliances and much more) from over 650 manufacturers to consumers and around 31,000 business resellers. The company prides itself on a best-in-class e-commerce platform, with cash & carry stores backed up by first-class service in the field. In addition to the sale of products, it offers an extensive catalogue of advanced logistics, warehousing and transport services.

## Wide and challenging objectives

With this customer-first mentality at the forefront, in 2019 Esprinet identified a need to improve the quality of service it provided in terms of product packaging. Managers had several challenging, but important objectives: first, to boost the speed of order preparation and thus improve productivity; second, to eliminate completely the consumption of plastic at the company's production centres; and third, to reduce CO<sub>2</sub> emissions thanks to maximum optimization of truck loading capacity.

At the time of embarking on this project, Esprinet's existing packaging method comprised a manual team dedicated to putting together the standard boxes necessary for the pick and pack of the goods and for the closing and sorting of the same, with the use of air cushions for void fill, scotch tape and heat shrink ovens. It is important to bear in mind that the items packed are very varied in size (eg video gaming consoles, sim cards) and frequently very small, with highly fragile electronic components.

In November 2019, Esprinet approached Sealed Air and another supplier specializing in the production of logistics automation to come up with a packaging solution to meet these high-reaching objectives.

Sealed Air was Esprinet's packaging material supplier in Italy and Spain, supplying the company with the machines and consumables for the production of air cushions for void fill.

"Our choice landed at Sealed Air because we preferred their better pre-sales and process design approach," reveals Fabrizio Corso, Logistics Manager at Esprinet Italia. "We also liked their flexibility with the technology options. We were able to see, by visiting other sites, that what we were planning and studying actually corresponded to our needs."



## Bespoke automated solution

The definitive solution was installed in October 2020 and comprises a bespoke blend of Sealed Air brand I-Pack and UltiPack efficient packaging automation products. Esprinet's model includes three lines of machines for producing boxes (trays) of four different sizes and three lines for closing them, all with the additional ability to seal the tray by glueing the lid. The I-Pack technology automatically allocates the correct size of box by assessing the filling level, marking and folding on all four sides before glueing a lid on the top. This process eliminates all superfluous empty space, without using any knives, and with no wear and tear.

Regarding product protection, the fragile product is secured firmly inside that same construction, in the case of big boxes via the insertion of a wedge





folder also glued to all four sides of the box. For little boxes, an anti-slip glue is sprayed on the bottom to prevent products from sliding inside the box.

Everything is connected to a line of conveyor belts and automatic labellers tasked to apply a label with the customer's address and sorting the packages according to the appropriate departure point of the goods.

"In the first three months we had on-site technical and training support that allowed us to perfect the automation setting and to adequately train the staff to use it," explains Fabrizio Corso. "The project was designed and installed in a period of full health emergency and yet despite this, also thanks to the use of new technologies and

platforms for web meetings and occasional meetings carried out following strict prevention protocols against coronavirus, it was possible to define and conclude it within the established times we had set."

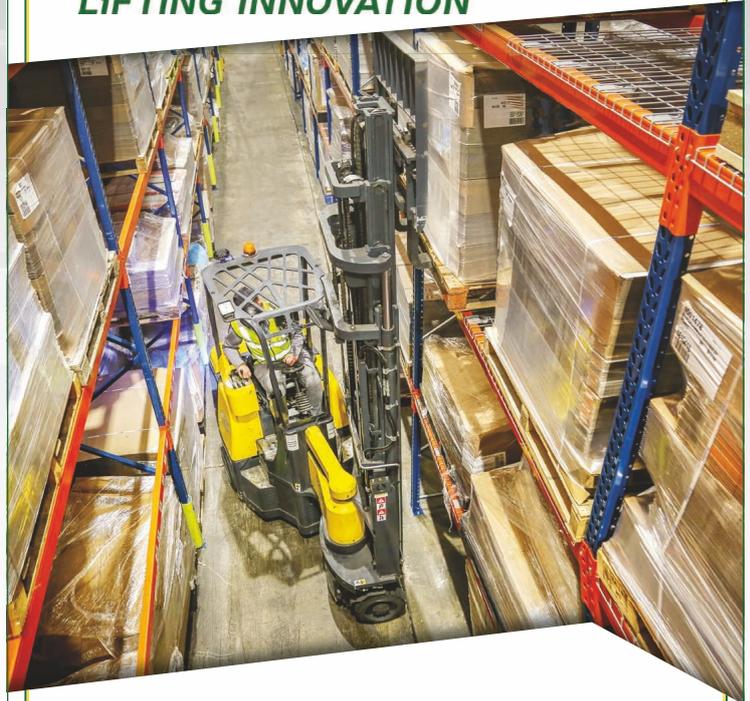
Thanks to this solution, the productivity of picking, preparation and closing of boxes has increased significantly, operators are more focused on the quality of the service provided, leaving automation to carry out repetitive work but with maximum efficiency and quality. It also means that, because boxes are optimized with far less void fill, trucks are loaded far more efficiently. Safely and evenly-packed boxes and parcels reduce carbon miles for the transport fleet.

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# Tracking Optimiser

Asset tracking with electronic theft protection can help optimise packaging-heavy logistics.

Top German electrical wholesaler **FEGA & Schmitt** wanted a new shipment process that ensured fast, reliable and safe delivery to the customer, with recyclable packaging options.

Previously, screens, lamps and refrigerators were packed on Euro pallets daily and wrapped with stretch film. The pallets were then picked up by various freight forwarders and transported to the relevant regional distribution centre. From there, the packages were loaded onto the respective transporters.

From now on, items from the central warehouse in Heilsbronn will be transported to distribution centres in roll cages and racks.

FEGA & Schmitt conducted research on loading equipment, which brought them to Wanzl. "We were impressed by the references and the diverse range. After contacting Wanzl Account Manager Anna Fischer, their customer service convinced us straight away," confirms Roland Huber, Project Management Logistics at FEGA & Schmitt. The collaboration is also important to Wanzl. Cassandra Hieber, Product Management Digital Solutions Material Handling & Retail and Project Manager Asset Tracking, explains: "Wanzl acts as a solutions provider for optimising the entire shipping process, from concept creation, supplier

screening in the partner network to project management, training of the customer's employees and ultimately roll-out support."

Wanzl's parcel roll cages provide FEGA & Schmitt with a solution for all their requirements. "Damage to the parcels is prevented, transport on the truck saves space, we save on packaging aids such as film, transport to the individual areas is faster and the process steps are streamlined," says Huber. In addition, guard plates prevent damage to the castors when transporting with forklifts and the closed four-sided design ensures optimum load securing. The locking device prevents the cage from rolling away during loading and unloading. Load capacity is 500kg.

## Digital fleet management

FEGA & Schmitt is the first electrical wholesaler in Germany to optimise its processes using tracking. An asset tracking solution developed with Wanzl partners Box ID Systems reduces the loss of entire containers and optimises the return of empties and inventory management.

Asset tracking can be as economical as it is effective. A small tracker is attached to an asset, such as a load carrier, roll cage or the goods themselves. This radio transmitter enables seamless tracking and analysis of the position and use of the asset



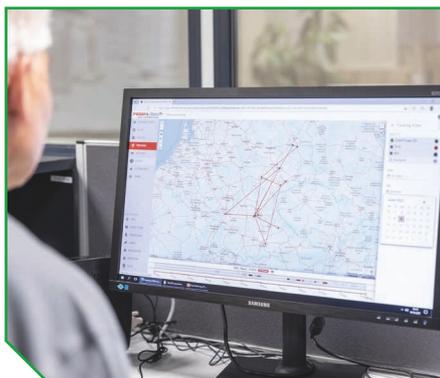
– at any place at any time. Via a web application, shipping employees can access the data and, if necessary, initiate necessary measures. This data not only enables full control over the logistics process, it also forms the basis for the analysis and optimisation of delivery processes. The tracking takes place via the 0G-Sigfox network.

Once the goods have arrived at the right place, the empty roll cages are folded into an L-shape, pushed into each other to save space and sent back to FEGA & Schmitt. Thanks to the continuously monitored circulation system, the roll cages are safely returned to FEGA & Schmitt. "The advantage of the tracking system is that we are always able to keep an eye on the loading equipment fitted with such a transmitter. Asset tracking allows us to reduce expenses for new loading equipment by 75%," explains Huber.

Furthermore, FEGA & Schmitt employees can even record the status of a load carrier using a smartphone or other mobile end devices by scanning a load carrier's QR code. This forwards it to a web application where the status of the load carrier can be managed, e.g. 'Damage Report', 'Service/Repair' or a distinction between 'Full' and 'Empty' (empty goods identification). Photos of damaged load carriers or required spare parts, for example, can also be recorded in the web application, which makes spare parts management significantly easier.

Wanzl has already delivered a total of 400 parcel roll cages to FEGA & Schmitt. The customer intends to order around 800 other types of loading equipment with trackers for 2021/2022, such as parcel roll cages, lamp roll cages, long goods racks and system pallets.

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