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INDUSTRY 4.0

Industry 4.0 the truth behind the buzz word

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Is the supply chain about to break?

APEX

Julian Adams MD of Apex sits 'In the chair'



Lightening the load

In this month's article from the Automated Material Handling Systems Association (AMHSA), Wojtek Kordel, CEO of Joloda International, looks at the challenge of finding a competitive edge.

In business today it's those with a competitive edge who can count themselves as being ahead of the game. Such an edge can come with a unique product or from being able to offer high service levels combined with competitive pricing. No mass-market product can stay unique for long, so the majority have to settle for offering good customer service at keen prices.

The problem with maintaining a competitive edge for most companies today is that competitors have copied nearly all of the best advantages. On the logistics side of a business, for example, the goods-in area, storage systems, automated or semi-automated order picking systems and computer-calculated delivery routing have all been honed to a position close to perfection, yet are available to all. However, there is one area of logistics where big gains – for a reasonably low investment – remain to be taken up. This is automated delivery vehicle loading.

One-man operation

So, what are the reasons why you should consider automatic vehicle loading? Using automatic loading eradicates the need for fork trucks and drivers on the loading dock and this is where the highest cost saving comes from. An automatic vehicle loading system is a one-man operation. As the vehicle loading takes only a couple of minutes, the trailer turnaround is exceedingly fast. In addition, as the load assembly is made at a more controlled, less frenetic pace, the stock delivered is often more accurate, giving an enhanced level of customer service. Also, with fewer fork trucks and people in the loading bay area, a safer working environment is created. These benefits can give you your competitive edge.

Reduced damage

Conventional lorry loading with fork trucks takes around 30 minutes, whereas using an automatic loading system can reduce this process to a few minutes, so the loading process is greatly speeded up. Faster loading means a quicker turnaround and this can result in fewer vehicles – and drivers – being needed within the supply chain. The reduction in fork truck use and the lower total number of road vehicles in use also contributes to the underlying aim that virtually all companies are working towards of reducing their carbon footprint. With automated vehicle loading, the operation is computer-controlled and the vehicle is loaded in a single pass; this means that there is little or no damage to the product, which is often not the case when loading a lorry with a fork truck.

Phased automation

Many companies fear full-on automation of their distribution centre, thinking that Murphy's Law will prevail – if it goes wrong, it will go wrong on a huge scale, with the loss of long-term customers and a cash 'black hole' that might only be curable by selling the company. However, automation of the loading bay is one of the few logistics operations that can be implemented in isolation and in a phased way, without affecting other areas of the handling and storage systems. We assist our clients by analysing their specific logistics needs and then suggesting several alternative automated loading systems and calculating the return on investment for each. Following this, further negotiation concerning all the technical and commercial aspects

of the case leads to the perfect automated trailer loading solution. In addition, we work closely with the world's leading trailer and body builders, allowing us to ensure seamless dock and trailer integration.

There are various types of automated vehicle loading system, but there are three that are most suited to the distribution industry. The SLIPCHAIN system can transfer up to 26 pallets from dock to trailer in only 90 seconds. Designed for loading of palletised loads, this chain drive system incorporates a pneumatically activated rise and fall system of the drive chain, which gives a high-speed accumulation and loading of full pallets.

With the TRAILER SKATE automated loading system, a complete vehicle load is assembled on the accumulation conveyor system. The vehicle driver then initiates the loading by simply pressing a button on the operator control panel located on the conveyor, close to the rear of the vehicle. Once activated, the TRAILER SKATE system lifts the pallets and the drive system pushes the complete load forward into the waiting vehicle. Steel channels in the trailer floor guide the skates. The infill floor between these channels provides a non-slip surface to support the pallets in the trailer after the skates have been withdrawn. The TRAILER SKATE solution will load a 13.6m semi-trailer in less than 4 minutes, providing a cost-effective solution for loads up to 30 tonnes. A major benefit of this design is that the vehicle can be unloaded with a conventional powered pallet truck.

The MOVING FLOOR system is a low-profile and lightweight flexible slat conveyor, designed to load and unload mixed pallet loads and mixed unpalletised loads for high-speed, high-weight operations. Loading a trailer takes less than one minute using an inverter-controlled electric motor and gearbox, which matches the in-vehicle and on-dock conveyors with speeds of up to 30m per minute. An advantage of this system is that the end customer can unload a vehicle loaded with pallets via the trailer rear doors using a standard forklift truck. The moving floor in the vehicle brings each successive set of pallet loads to the rear doors.

ROI from 18 months

The choice of which automated vehicle loading system is right for each application depends on many factors that need careful evaluation. In most instances, the return on investment for an automatic loading system can be as little as 18 months. In the ultra-competitive logistics environment, Joloda International provides world-class solutions for truck loading. Active in the industry for over 50 years, Joloda is a market leader in industries as diverse as air cargo, newsprint, beverage and fast-moving consumer goods distribution, as well as just-in-time automotive deliveries.

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