

The Magazine for the materials handling professional

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A change is going to come

Prepare for revolutions in purchasing and delivery

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simply explained

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IN THIS EDITION

'Flexibility' is a key theme in Eureka 35. To succeed in a changing world, materials handling professionals and their businesses must be adaptable and willing to embrace new ideas. Eureka is always a good source of fresh thought and advice to help you adapt and improve.

Fundamental changes in consumer behaviour, including online shopping and a rising demand for home delivery, require the development of different business models and approaches. **Ruari McCallion** summarises those trends and explains why warehousing and logistics must adopt Fourth Industrial Revolution technologies.

Could blockchain technology be the answer to some of your logistic challenges? Now is a good time to find out what it is and what it does, so you can be ready to benefit from its growing use. **Mark Nicholson** offers a simple introduction to the subject.

Are you transporting a lot of air as well as goods? Flexibly adjusting packaging to fit the products it contains, and flexibly arranging packages to make optimum use of lorry or container space, can reduce costs substantially. **Gian Schiava** explores the variety of devices, machines and smart software tools available to achieve this.

We round off this issue by considering the advantages of flexible safety barriers. **Mark Nicholson** presents the case for plastic against metal.

We hope these articles will inspire you to make positive and profitable changes. Your feedback and questions are always welcome, and we will be happy to investigate any other topic you suggest. You can email comment@eurekapub.eu or message us via our website www.eurekapub.eu

Monica Escutia
Commissioning Editor

Eureka's Commissioning Editor is Monica Escutia, a Bachelor of Communications – Journalism. She is a Spanish national and fluent also in Dutch, English and Italian. Having previously edited a variety of international media, she has spent the last 14 years in the materials handling industry – the first four as a parts sales representative for several European countries, before becoming the EAME Manager Marketing Communications for Cat® Lift Trucks, based in the Netherlands.



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LOGISTICS MUST ADAPT TO CHANGES IN CONSUMER BEHAVIOUR

Changes in consumer purchasing habits require the logistics and materials handling industry to adapt, quickly, and adopt Fourth Industrial Revolution technologies, writes **Ruari McCallion**.

You can blame inadequate management; you can blame poor purchasing choices – and both must carry some responsibility for the decline in high-street sales. You can even blame the shoppers for “selfishly purchasing goods from the internet”, like the leader of a provincial town council in England¹. It is true that online retailers have widely reported strong growth in recent years, frequently in double digits.

Online retailer Boohoo, for example, said it was “pleased to confirm” revenues surging, by 43% to £564.9m for the six months to 31st August 2019. The UK was the EU 28’s largest e-commerce market² but Germany, the second-largest, and Europe’s biggest economy overall, saw physical, high-street retail sales nearly flat in 2019, while its e-commerce segment grew 7.8%. Online retail sales in the UK, generally, rose 9.4% year-on-year in December 2019, and 11.3% in Q4, according to the latest IMRG Capgemini Online Retail Index. It nonetheless described the full-year online sales growth figure of 6.7% as “disappointing”, compared with 2018’s 11.8%.

Disappointing it may have been to some, but not nearly as disappointing as the closure of thousands of retail units and the redundancies of tens of thousands of employees.

FROM HIGH STREET TO HOME DELIVERY

At some point, the reality must dawn that it isn’t simply bad management; it isn’t just poor purchasing decisions; it isn’t even a rise in ‘green consciousness’ and decline in consumerism; and nor is it shoppers being awkward and uncooperative. The model of purchasing and delivery is changing. This change is even more fundamental than the rise of the one-stop, ‘big box’ supermarkets in the past – and it will have a wider impact.

The current model of large warehouses delivering to big box retailers is being overtaken by events, and logistics providers have to adapt.

“The growth in the home delivery sector has been massive and, equally, the demands for accurate delivery lead times and narrow slots have driven the investment and development of technology that enables this. Supply chain efficiency is key,” says Don Marshall, Head of eCommerce and Fulfilment, Exporta, which is part of the Anchorpoint Group and specialises in racking, shelving and palletised transport and storage solutions. “The cost of home delivery supply chains, especially when you add in the cost of returns factor, is high and a lot more difficult to manage.”



Led by Tesco, which had the most efficient e-tailing retail model in Europe, retailers have put a lot of work into making their supply chains more efficient and have successfully cut out a lot of waste. Don Marshall expects that retailers will continue to work with their third-party logistics companies to make store operations more

efficient, eliminating even more waste and moving to more of a just-in-time model. This will allow them to reduce overall stock levels but, in order to do so, they will need to invest in better stock control, movement and management systems.

GOING ‘GLOCAL’

Neil Ballinger, Head of EMEA Sales and Training and Development Manager at industrial automation supplier EU Automation, talks about what he describes as the ‘glocal supply chain’.

“Glocalisation is not really a new thing, since multinational companies have always been compelled to adapt their production to local requests. For example, automotive manufacturers have to diversify their offer based on specific regulations, the most obvious example being which side the steering wheel is on and whether the speedometer is in miles or kilometres per hour,” he says. ‘Glocalisation’ sounds like an alternative name for ‘think global act local’ but there is more to it, he maintains.

“What is new is the impact that a glocal business model is having on supply chain management, with manufacturers striving to achieve a supply chain that acts on a global level but adapts to local demand,” he says. Companies need distribution and inventory management systems that can trace products at a global level, which means providing visibility across all nodes of the value chain, regardless of geographic location. “However, these systems also need to be able to adjust to local trends, predicting demand for certain items in specific locations and managing stock accordingly. Automation technology can help create what is known as a ‘cognitive supply chain’, where all these complex operations are fully digitalised.”

“The cost of home delivery supply chains is high and a lot more difficult to manage.”



Exporta specialises in racking, shelving and palletised transport and storage solutions for today’s changing logistics world. Photo: Exporta

DIGITISATION FOR RESPONSIVENESS AND FLEXIBILITY

Digitisation is necessary because such a high level of traceability and flexibility requires data on consumer behaviour to be analysed in real time, and a supply chain that is able to rapidly move items where they will be needed. The Fourth Industrial Revolution, with highly digitised, connected units adding value, is not restricted to automated factories. Logistics and warehouse management must follow suit. But even the best management systems will not provide the solution if shoppers are moving from the centuries-old model of physically travelling to shops and 'buying after trying' to remote browsing and ordering for delivery at home. The problems being faced by the high street will not be solved by digitisation alone.

"It has become evident that disregard of local market conditions can negatively impact business, leading to operation and supply chain issues," Neil Ballinger readily concedes. Alongside changes in behaviour around where to shop are strong changes in what to buy, as well, and that trend is being strengthened by growing ecological awareness – which may end up simplifying supply chains.

"There is increased public attention to the necessity of supporting national and regional economies by sourcing raw materials locally,

Neil Ballinger, Head of EMEA Sales and Training and Development Manager, EU Automation



Traditional, large, regional warehouses still have their place, but 'last half mile' home delivery requires a different approach to maximise its efficiency. Photo: Exporta

which can also contribute in streamlining the supply chain and reducing freight fees," he continues. "Fully automated – or cognitive – supply chains can perfectly integrate into a global business model and provide a number of advantages."

PAST, PRESENT AND FUTURE COEXISTENCE

Traditional models that rely on historical statistical approaches to demand forecasts are not responsive or flexible enough. Big data can help but only if data processing is fast enough to react to rapid, swift changes in local markets. Does this mean that the days are numbered for traditional, large, regional warehouses acting as distribution nodes? The huge success of Amazon would say that the answer is no; its warehouses are among the biggest. They are also, increasingly, among the most automated, along with those of online grocery business Ocado.

For the foreseeable future, the two models will work alongside each other; the high street model is bruised and battered but not yet dead. In the home delivery model, logistical management focus has to be on the 'last half mile', which is the most expensive part of that value chain.

"People have been talking about drone deliveries being a thing of the near future for a while but I cannot see this coming to fruition," says Don Marshall. "Drones are very limited in

what they can carry and where they can go; a fleet of delivery drones flying through cities is never going to happen – especially if you live anywhere near an airport."



Automation in the warehouse is already well advanced; Industry 4.0-level integration is the essential next step. The high street will survive, because people are sociable, fashion is social and the centralised model of shops to which consumers travel and collect purchases remains logistically efficient and has environmental benefits of scale. The challenge for logistics is to make the last half mile delivery as cost-effective, reliable and convenient as that traditional model. ●



See also our article 'The Last Mile' at www.eurekapub.eu

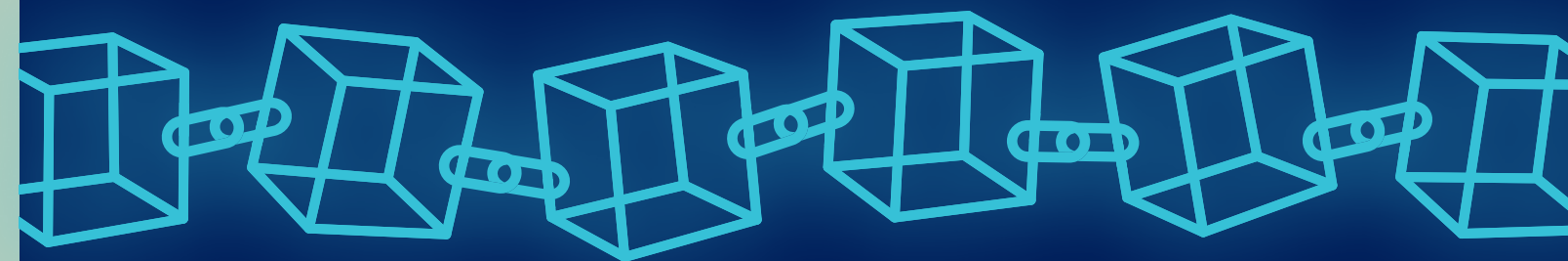
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1. Jeremy Nettle, leader of Salisbury City Council, reported in the Salisbury Journal, 19th December 2019.
2. Emarketer report: Germany Ecommerce 2019, July 2019.

AUTOMATIC TRUST

WHAT BLOCKCHAIN CAN DO FOR LOGISTICS

How can you trust the people and companies with whom you do business? And how can you be sure of the information on which your transactions are based? What if that confidence could be automatically assured? This is the promise of blockchain technology. **Mark Nicholson** offers a simple, non-technical explanation.



You may already have been offered a product or service using blockchain. If not, you will certainly come across it in the next few years, so it makes sense to have some understanding of what blockchain is and what it does.

WHY DO WE NEED BLOCKCHAIN?

Blockchain has the potential to make trade smoother, faster and more efficient by removing uncertainties, delays and costs. For example, it enables businesses and individuals to exchange money and goods confidently even if they don't know each other.

The traditional approach to establishing confidence in a transaction is much more time-consuming and expensive. It involves gradual development of trusting relationships, or establishment of good evidence that both parties can be trusted. Ultimately, it relies on verification of the deal by a bank or other third party, which requires time and payment of a fee.

Even then, can you be certain of things like the origin of the goods being moved, the dates and locations of each stage on their journey, and the conditions in which they have been transported and stored? The written details you hold may be different from those held by others in the supply chain – leading to disputes over payment and delivery. Human error is one source of such inaccuracy, but there is also the possibility of fraudulent activity – including outsiders hacking into insecure information. Blockchain can address all these issues.

Globalised manufacturing and trade, covering long distances, has increased the number of steps and participants in supply chains and added extra complexity. As each transaction potentially requires further checks, time and fee payments, and each additional step brings further risks, the attractiveness of blockchain-based solutions grows.

BUT WHAT IS BLOCKCHAIN?

Blockchain is a software technology that not only maintains an accurate and tamper-proof digital record of all transactions but automatically verifies them without the need for a third party. This record is shared with all who are authorised to see it. Although largely used for financial transactions, the same technology can be used for details of non-financial events and any other information.

In many published explanations, a blockchain is described as a distributed digital ledger. Let's just make sure those terms are understood. A 'ledger' is an accounting book, as used by a company to record its business transactions. Some blockchain definitions call it a database rather than a ledger. 'Distributed' means that the ledger's information is not held on a central computer but is shared by a large network of computers connected through the internet.

Each user sees the same record. Depending on the individual blockchain's purpose, this may be open to the public or to authorised users only. The technology ensures that only computers with permission to join the network can participate in the addition and verification of transactions.

Whenever a user adds a new transaction, event or piece of information, the many computers examine it against a set of pre-agreed rules. If it is accepted as legitimate, they verify it and add it to the record as a new block. Further transactions are added, in date and time order, to create a chain of blocks – hence the name blockchain.

Once a block is in place, no one can alter or delete any of its content or change its place in the chain. Any attempt to do so would be rejected by the computer network. Blockchain also uses encryption technology to secure the information against unauthorised access. The result is a complete, true and safe record which avoids inaccuracies, disputes and fraud.

HOW CAN BLOCKCHAIN HELP YOUR BUSINESS?

By saving time and money, and overcoming a variety of risks, blockchain can benefit logistics, distribution and warehousing businesses, along with manufacturers, farmers, growers, retailers and anyone else in the supply chain.

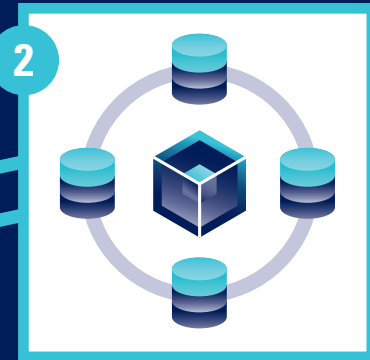
- **Transactions can become instantaneous – making deliveries faster and more efficient**
- **There's no need for third parties to check and verify transactions – so fees as well as delays are avoided**
- **Blockchain's accurate and secure record of all transactions gives much less scope for arguments or criminal activity**

A simplified summary of what blockchain does:

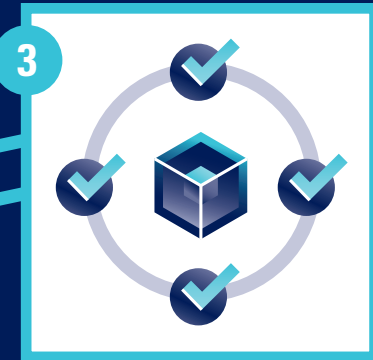
1 A user requests a transaction (or supplies a piece of information).



2 Details are shared with a network of connected computers.



3 The computers verify the transaction if it complies with their pre-agreed rules.



5



The transaction (or transfer of information) is completed.

4



Details are added to the chain as a new data block, which cannot be removed or altered.



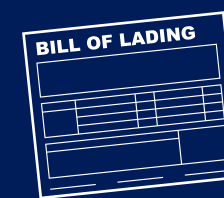
One obvious application is to make payments, securely, anywhere in the world. Blockchain is the technology behind digital currencies such as Bitcoin.



Some pharmaceutical supply chains are vulnerable to theft, and replacement of medicines with dangerous or ineffective counterfeits. By sealing each container and applying a unique serial number to it, the products can be tracked and authenticated at every stage of their journey. Use of RFID tags, barcodes or other scanning technologies simplifies their tracking, while blockchain maintains and shares a reliable record of their origin and history.



Tracking and tracing of food products, all the way from their producer to their consumer, is enhanced by tagging them and maintaining a blockchain record. This can be combined with Internet of Things (IoT) technology to give even better visibility. Sensors attached to a product can enable monitoring of temperature and other environmental factors during transport and storage, as well as the product's location.



When goods are moved between countries and continents, various documents need to be issued and processed. Much time can be saved if the companies and authorities involved agree to share full details of each shipment via blockchain.



Even something like a diamond can be given a unique number – in this case inscribed by a laser – to certify its origin. The precious stone's blockchain record confirms its legal ownership, deters theft and helps buyers to avoid 'blood diamonds', sold to fund civil wars and conflicts.



Smart contracts can be written into a blockchain, allowing payments to be made or goods to be forwarded, automatically, when the computer network confirms that all contract conditions have been met. Automation may be taken further using IoT devices. For example, sensors and transmitters connected to a shipment might report that it has reached its correct destination and is still in good condition.

Although blockchain is still in its early stages, we all know how quickly technologies can develop. In the future, it will affect your life – whether you realise it or not. If one of your supply chain partners gives you the opportunity to take part in a blockchain-based development, will you embrace it? You could gain important competitive advantages by being one of its pioneers. ●

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AIR IS THE LAST THING YOU WANT IN YOUR SHIPMENT

INCREASE PACKAGING EFFICIENCY FOR LOWER-COST LOGISTICS

Transporting air only makes sense if you are flying a zeppelin. In modern logistics, managers leave no stone unturned to reduce costs and boost efficiency. In this article, **Gian Schiava** looks at how you can make your shipment packaging more efficient whilst seeking to minimise expenses.

Early last year, Eureka's Mark Nicholson wrote a great article* about greening up the packaging side of your logistics. He showed that improving its sustainability can actually make good business sense and described various ways in which you can achieve a reduced carbon footprint. Today we will dive into packaging from another angle: how can you optimise your packing and loading process?

TRANSPORTING AIR WITHIN THE PACKAGING

Perhaps the first question to ask should be: is the primary packaging 'made to measure' for the product inside? Many companies have added an e-commerce sales channel to their operation, resulting in an incredible increase in shipments, but package volumes have diminished considerably. Take just one country, the Netherlands: last year saw delivery of 250 million packages by e-commerce players alone! Transporting air can then become very costly, hence use of standard boxes with filling materials or wedging no longer makes sense.

The simplest option is to invest in smart packaging machines. Manufacturers like Sealedair, CMC and Savoye (see boxout illustrating how a machine can adapt the box to the contents) see a growing number of competitors entering the market. This in itself demonstrates the recognised need for these solutions. However, for such a machine you need to be shipping in volume, otherwise the ROI (Return On Investment) can become challenging.

Working smarter could lead to wins, even without a machine. Choosing flexible packaging is a step forward. The Dutch e-commerce organisation

Thuiswinkel.nl recommends first designing the whole fulfilment process, including choosing the right boxes. You may find that manual height adjustments can work just as well. Working with a limited number of fixed base sizes (with variable height) also has a positive effect on stacking and filling in the rest of the supply chain.

The manual packaging process can be supported with smart software tools like the eBox Range Optimiser (eBro) from DS Smith. This calculates the ideal number of different boxes, determines the best box sizes and shows the effect on costs and durability of various alternatives. There is also software to help determine how best to stack products in a package (Stack Assist from FPC). Another software solution works out how your products can fit into each other within a package (PackNet.DIM). It seems there is already a great variety of tools out there to help companies fill their boxes more smartly.

Naturally, packaging needs vary from industry to industry. When it comes to clothing, for instance, we see products being rolled up. Boxes are replaced by plastic bags, or products are vacuumed to reduce their size to an absolute minimum. If vacuuming becomes too expensive, or a product is too vulnerable for this, sealing combined with use of a pressure roller is an alternative.

Pressure from the large players is also forcing the industry to reduce the transportation of air. For example, when Amazon wanted to get rid of unnecessarily large packaging it prepared special guidelines for sellers. Those who do not adhere are now fined!

TRANSPORTING AIR IN THE LORRY

It's not only the boxes that need to contain as little air as possible. The same is true for the lorry or any container. How can you reduce the amount of space that sits above and around the pallets? Common sense tells us which pallet sizes fit our lorries best and how many are needed to fully utilise the floor, but we have to look further.

As with optimising the packaging, there are smart software tools to assist in optimally filling a truck or container. The programme Cape Truckfill asks you to enter details of the products, pallet loads and container sizes into the appropriate database. It then analyses the possible arrangements and gives you an optimal filling plan. Another app, from start-up Value Engineers, seeks empty space from other companies to arrange combined shipments – bringing demand and supply of extra cargo capacity together.

There are various other software solutions that can help, and you may even engage with consultants to design the perfect process.

Taking a step back, we can see that physical tools may also be used to optimise the filling rate. Pallet load optimisers are devices which allow you to stack loaded pallets on top of each other with minimal space in between. Some lorries can be fitted with sliding aids, adaptable intermediate flooring or mechanised solutions resembling drive-in racking.

SAVE THE PLANET TO SAVE THE BOTTOM LINE

It seems many industries have already found their way of reducing empty space in their packages or are well advanced in tackling the challenge. If the argument of sustainability is not compelling enough, then the potential to reduce costs considerably should make any logistics manager want to look into this.

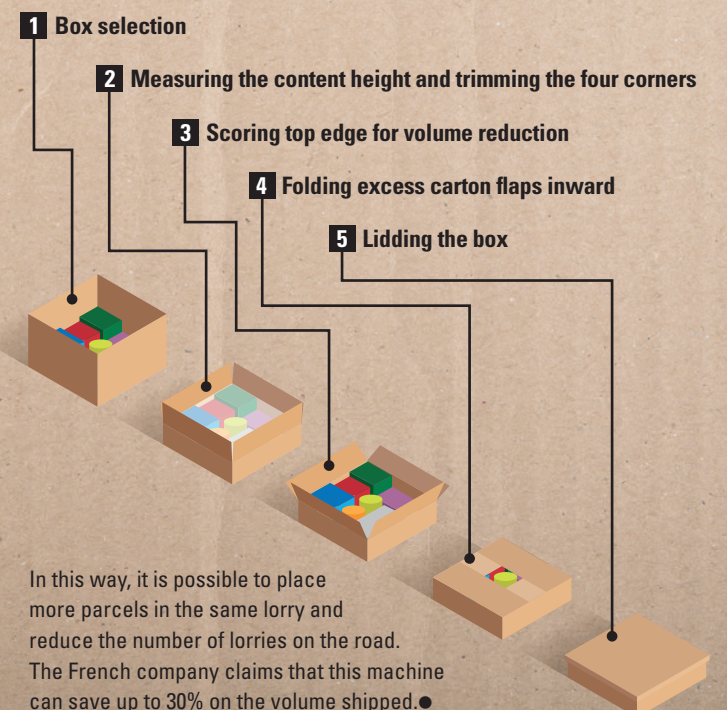
French-based Savoye is a logistics system integrator that has built its solutions into more than 1,000 warehouses all over the world.

When it comes to packaging efficiency, Savoye believes that sizing the parcels to fit the products is essential. Incorrect sizing of parcels results in a need for extra pallets to be handled in the warehouse and extra space to be bought for additional transport. It also means insufficiently protected products, which bang into each other in the unused space. Perhaps most importantly of all, it leaves a bad impression with the customer.

Savoye's Jivaro (the name is derived from an ancient South American tribe, ill-famed for its habit of decapitating enemies) is a closing machine which adapts the height of boxes according to product dimensions, to reduce the size of shipments.



In the picture below you can see the various steps:



*See our article 'Wrap up green for healthier profits' at www.eurekapub.eu

Article feedback is welcome: editor@eurekapub.eu

PLASTIC AGAINST METAL

THE CASE FOR FLEXIBLE WAREHOUSE SAFETY BARRIERS

Can plastic safety barriers really match metal structures in protecting against forklift truck collisions? With the right materials, design and technology, yes, they can. What's more, their flexible solutions offer important advantages over traditional solid defences. **Mark Nicholson** reports.

When the power, speed and sheer weight of a lift truck are misdirected, their potential impact on people, equipment and buildings is huge. Not surprisingly, warehouse designers have tended to rely on the strength of metal for protection. This often takes the form of steel crash barriers, railings and bollards, with bases either bolted to the floor or set within the concrete itself.

METAL'S ONGOING COSTS

Although undoubtedly effective, metal has side-effects which you may wish to consider when weighing up the long-term costs of different barrier options. The first is the way it reflects and transmits impact forces.

A relatively inflexible object like a metal crash barrier directs much of the collision shock straight back into the colliding vehicle. In the case of a car or van, this will result in substantial damage. A forklift may suffer some damage, but due to its more robust nature it is more likely to pass the shock on to its driver and load. This could lead to whiplash injury or a heavy fall for the driver, and damage to goods thrown from the forks.

At the same time, force is transmitted through the barrier and into the floor. In the heaviest collisions, that force is enough to break the concrete – which is expensive to repair. Less serious incidents may just dent or bend the metal. Cutting and welding to deal with structural damage is also costly, so bent and twisted but still functional metal is sometimes left unrepaired.

Here we come to a further downside of metal safety barriers: they don't keep their looks. They may look neat and tidy when new, but scratched and worn paint, rust and accident damage soon spoil the view. If your business needs to give a good visual impression, you will have to spend regularly on refurbishing and repainting them.



Not a pretty sight. Bent, rusted metal and flaking paint give a poor impression.



iFlex double traffic barrier.
Photo: A-SAFE

FLEXIBLE BENEFITS

Instead of becoming permanently deformed themselves, or turning impact forces against the vehicle and floor, the best plastic barriers are designed to absorb and dissipate shocks. Absorption is achieved partly through plastic materials which deform temporarily under impact and then return to their original shape. They also have additional components which flex or cushion in response to impacts. Meanwhile, their whole system works together to disperse impact energy harmlessly over large areas.

Vehicles, drivers, goods and floors escape damage, and so do the plastic barriers, provided the right specification is chosen. There is no need to paint or repaint, and no rusting. What's more, they are comparatively easy to relocate if premises are restructured.

END-TO-END POSSIBILITIES

The market offers an extensive choice of flexible plastic safety barriers meeting all needs. Key categories include:

- **Crash barriers** – linear defensive features providing effective protection of walls, equipment and people in the areas they enclose or block off
- **Handrails** – segregating pedestrians from lift trucks, sometimes in combination with crash barriers
- **Bollards** – placed at strategic points such as entrances, or in high-traffic zones and other vulnerable areas; this category includes 'goal posts' to protect doorways
- **Racking protection** – including barriers placed at rack ends and guards attached to uprights
- **Column protection** – enclosing or attached to columns which support the building

It's not Eureka's job to tell you which manufacturer's products to choose, but the examples below should help illustrate the technologies available. As a starting point for your product search, it would make sense to look at A-SAFE, Boplan and McCue, which are amongst the market leaders for plastic safety barriers. Each of these manufacturers offers modular systems covering the range of barrier types above, and more, with variations to suit every specific situation.

A relatively inflexible object like a metal crash barrier directs much of the collision shock straight back into the colliding vehicle.

A-SAFE

A-SAFE barriers benefit from the company's unique Memaplex plastic material. This is produced by custom-built machinery which stretches the molecular structure of polymers and orientates their flow at the point of formation. The resulting grid structure, within which molecules are realigned, creates an inbuilt memory, allowing components to recover their shape after deforming to absorb impacts.

The barriers are connected by a patented coupling system which adds strength and absorbs impact energy in three sequential stages. As well as cushioning the force, their design dissipates energy through the barriers' length and away from their fixing points on the floor. Examples of A-SAFE iFlex crash barrier, handrail and bollard designs are shown here.



iFlex cold storage bollard. Photo: A-SAFE

BOPLAN

Boplan's Flex Impact range of safety barriers is based on another high-quality, high-performance polymer which matches metal in strength but has elastic properties. Again, they are designed to absorb shocks and dissipate them through the body of the barrier.

A wide choice of modular products is offered. For instance, the Flex Impact handrail selection includes light, medium and heavy versions with varying rail arrangements. One interesting option is the TB Plus barrier, which combines the functions of a handrail and a crash barrier. Safety gates can be incorporated, encouraging personnel to stop and think before moving from a protected pedestrian zone into an area with forklift traffic.

McCUE

McCue uses a variety of different materials and engineering solutions to deflect, disperse and absorb impacts. Its FlexCore bollards, offered in a range of diameters and heights, are a case in point.

First, a rotating HDPE (high-density polyethylene) cover absorbs any glancing blows. More direct impacts are absorbed by a flexible load ring and transmitted to the bollard's core. This has a high tensile steel shaft which bends slightly to absorb heavy impacts and then flexes back unharmed. The anchoring system features a stress-relieving polyurethane damper which protects the floor from damage. Similar elements are used in McCue's pedestrian barriers, crash barriers and other protection systems.

Although some plastic barrier systems may be higher-priced than their metal counterparts, warehouse operators must always think in terms of total cost of ownership. When you add up the costs of metal barrier and concrete floor replacement or repair after each accident, you may find plastic becomes more economical. You should also look at how much routine maintenance they will need. Then factor in the damage and injury that metal barriers may do to your forklifts, goods and drivers, and the time lost as a result. On that basis, you might decide that plastic not only looks better but makes best economic sense.

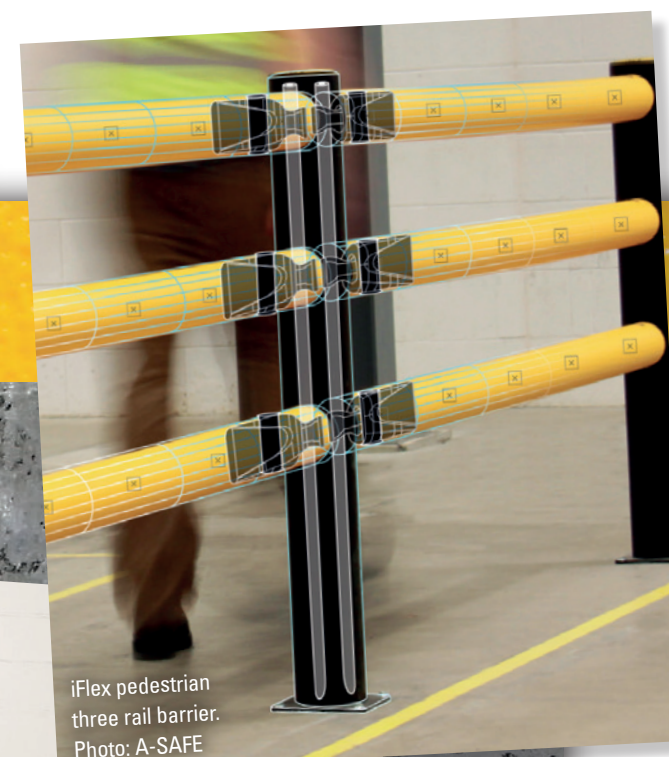


iFlex double traffic barrier+. Photo: A-SAFE

DRIVE CAREFULLY!

Remember that the collisions discussed in this article are caused by poor driving. If operators drive too fast, or without enough care, they will collide with something or someone. Your first line of defence against such behaviour should be to train them well and enforce a strong safety policy. Safety barriers need to be effective, but your aim must be to avoid hitting them in the first place. Here are some tips:

- **Slow down when driving close to people, racking, other equipment and vertical building structures**
- **Keep a clear distance from all the above**
- **Slow down at turns**
- **Look in the direction you are travelling**
- **Make sure your load doesn't block your forward view (if it does, travel in reverse – except up slopes – or ask a colleague to guide you)**
- **Beware of rear-end swing when turning**



iFlex pedestrian three rail barrier. Photo: A-SAFE



Driver error can be reduced by advances in precision steering, controlled operation and automated safety, as found on the award-winning Cat® EP14-20A(C)N(T) electric counterbalance. Nevertheless, strict safety rules, thorough training and effective physical barriers are still vital to minimising risks of collision injury and damage in the workplace.●

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