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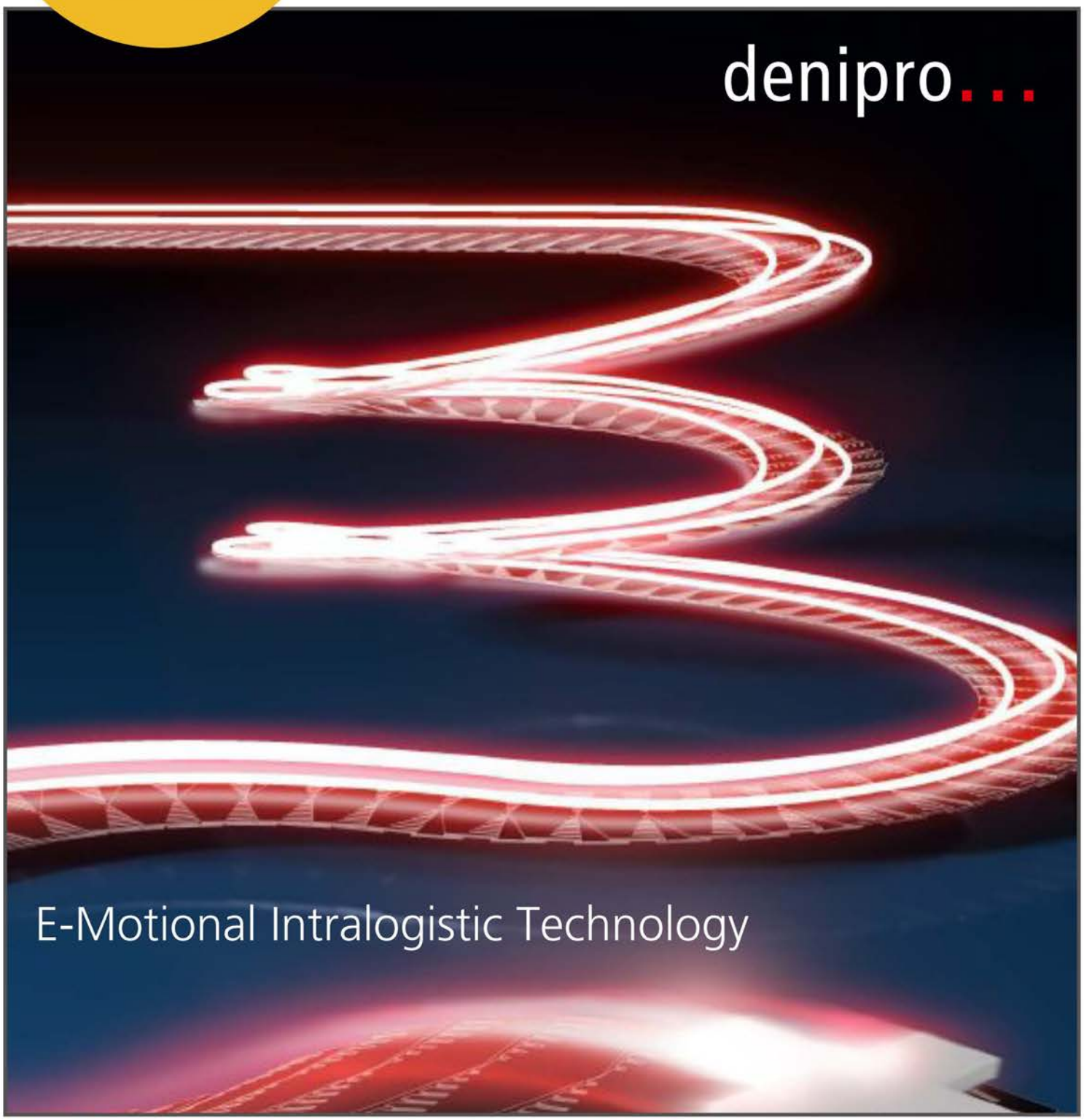

DENIPRO
Launches the Denisort, the game just changed!

IMHX
We take a look back at this year's event.

E-COMMERCE
In our largest feature ever, we look at how you can do it better.

Cardboard: green or mean?

In this month's article from the Automated Material Handling Systems Association (AMHSA), Roberto Matteis, Business Development Manager for George Utz UK, considers the relative merits of plastic returnable transit packaging and its cardboard rivals.

It's an anomaly of that the human condition that people have a tendency to cling to untruths for decades after logic and science prove them wrong. One such myth that UK consumers cling to is seeing plastic as environmentally 'wicked' whilst paper-based goods are held up as being benign. The truth, however, is that – when considered over the entire lifetime of, say, packaging – paper and cardboard products represent far more greenhouse gas than their plastic counterparts.

Environmental costs

The first environmental consideration is that paper-based products take a substantial amount of energy to process – including cutting down a tree, hauling the timber to a processing plant, crushing the wood into small pulp fibres, mixing the pulp into a slurry and forming the slurry into paper by passing it through a series of huge heated rollers. In addition, there is the further energy-consuming process of turning the paper into useable products such as corrugated cardboard boxes.

The second environmental factor to consider is that most paper and cardboard ends its life in local authority landfill sites where it rots down, creating the 'greenhouse' gas methane, whereas plastic does not rot and therefore harbours its own carbon content for ever. In contrast to paper, plastic is light and durable, and its manufacture is generally not particularly energy intensive. Some 85% of delivered household packaging is paper-based yet most of the green vitriol is saved for the small amount of plastic packaging used, such as the plastic punnets that strawberries are packed in. Of course, consumers could be

encouraged to recycle more of their cardboard packaging rather than letting it end up in landfill – and the same could be said of plastic packaging.

Distribution sector

Turning our attention to the logistics industry, surely here logic and science must prevail – for profit and loss wins over outdated beliefs. Plastic transit packaging offers a number of benefits for the distribution industry. Firstly, cardboard is hygroscopic – that is, it can absorb moisture from just the air around it, let alone actual water such as rain. Damp or wet cardboard not only adds to its weight but also means loss of strength. Plastic, however, is waterproof and therefore can retain the structural strength designed into it, allowing it to take superimposed loads and stack better. Plastic can even be reinforced with metal to increase its strength for certain applications. A further benefit is that plastic can be washed to suit its reuse as returnable packaging, whereas used cardboard is almost impossible to refurbish. Add to this the fact that plastic boxes or crates can be designed to fold up flat to save on return shipping costs, and the argument in favour of returnable packaging starts to become clear.

Custom design

As the plastic crate can be moulded to virtually any shape, delicate items can fit into purpose-designed recesses so that they do not require any further 'cushioned' wrapping. The design can even include ergonomic features – such as grab handles – and a recess suitable for an RFID tag. Plastic packaging can be charged for and credited on return, thus ensuring a high proportion of reuse whereas used cardboard is not seen as having any intrinsic value. Finally, plastic can easily be colour coded, thus assisting with distribution processes – for example, blue totes for frozen goods, green for chilled produce and red for items kept at ambient temperatures.

Automation

When automation is involved in the supply chain, there is a further argument for using plastic transit packaging; automated handling systems favour the uniformity of plastic containers – compared to cardboard packaging, which is easy to damage – to operate successfully. In this way, use of plastic crates enables the supply chain to take advantage of automation and thereby secure the financial benefits of labour savings and higher levels of throughput. Over time, this can add substantially to the profitability of any system.

Savings

What is clear is that suppliers in the B2B distribution business need to do the maths for the argument of cardboard versus plastic. If just ten reuses were possible for each box or crate – a fairly conservative figure – the savings would be enormous.

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