

AGILE, AUTOMATED AND PROFITABLE

SO WHAT DOES THE PLANT OF 2025 LOOK LIKE? IN THE FOLLOWING ARTICLE, LARS ENGEL, MANAGING DIRECTOR OF BHS CORRUGATED, OFFERS A VISION OF HOW THE INDUSTRY MIGHT OPERATE, WITH 'INDUSTRY 4.0' AT THE HEART OF AN EFFECTIVE MANUFACTURING PROCESS.



Lars Engel

There is an awful lot written about disruption, particularly when it comes to utilising new technology in an established manufacturing environment. Disruption, thanks to digitalisation. We want to start thinking about the plant of 2025, but you might think that seems a long way off.

Let's look at industry giants who possibly ignored disruption, which had a massive impact on their businesses. Think about Nokia and Blackberry – neither believed in touch screen phones and over the space of a few short years, they lost 90% of their market share. Then there is Kodak – they invented the digital camera,

Death and birth of champions over only 5-6 years

NOKIA

BlackBerry

... didn't believe in touch screens ...

90 % loss of their market shares

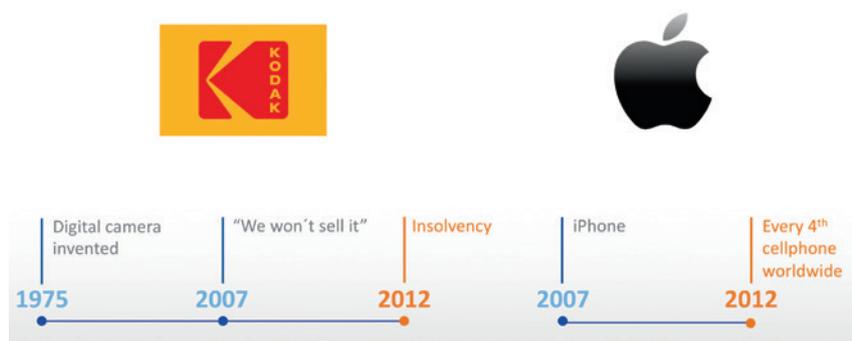
阿里巴巴 
Alibaba.com™

... only active in China ...

1,200 % sales increase in only 6 years

THE BIG QUESTION YOU NEED TO ASK YOURSELF IS THIS – WILL A MYSTERIOUS NEW PLAYER PREVAIL AND TAKE YOUR MARKET SHARE AND HOW WILL THEY ACHIEVE THIS WITH A NEW BOX PLANT?

Death and birth of champions over only 5-6 years



but decided not to cannibalise their roll film business and five years later, it was that business unit that went bankrupt.

Now let's look at businesses that saw opportunity and prospered. Alibaba, the online retailer. Having launched in China only, within six years, their sales increased over 1,200%. Then there is Apple. A successful computer company already, they decided to disrupt the music business. Once successful in music, they then decided to build smart phones in what was a totally new sector for them – the result, number one in just five years. These examples show that in reality, five years is not that long, but if you ignore the changing landscape, you could be left with an inefficient business or worse still, no business at all.

The big question you need to ask yourself is this – will a mysterious new player prevail and take your market share and how will they achieve this with a new box plant? That plant will have possibly 50% fewer people, thanks to automation. There will be digital print, integrated to the corrugating process. Fully automated logistics within the plant and the entire

process steps will be minimised thanks to digitalisation that will go far beyond the physical factory.

What you have here is a totally different approach to box making than we have today. As it stands today, the industry is struggling to achieve incremental improvements in brownfield sites. We are trying to find savings in paper, electricity, space, steam, starch and even people. We are also struggling to find more saleable square metres and trying to work out exactly what board grades customers are willing to pay premium prices for. With these factors, we can find incremental growth, but it is modest. If you really want to make a big difference, maybe you need a complete step-change.

A Big Leap

We need to re-think the production process all together. Today, it takes up to five days from order entry to despatch. We need to cut this in half; but the key factor isn't the corrugator, as a box only interacts with the corrugator for less than 30 secs. We need to start looking at the whole plant.

By 2025, a lot of things will change.

For example:

- digital print will be integrated into the box plant;
- roll storage will become part of the corrugating workflow;
- no more stereo storage;
- intermediate storage will be reduced;
- possibly no printing in the converting department;
- reduced finished good storage area;
- despatch area scaled down;
- fully automated plant;
- digital die-cutting.

In all of this, logistics will play a massive part. At BHS Intralogistics, we are already developing iMotion, a system that 'thinks' ahead and offers logistical solutions. Within this, we have, for example, iLifters and iShuttles that handle paper reels off the trucks and through the entire plant directly to the corrugator. These automated loading and unloading systems work within an efficient workflow system and enable perfect tracking of materials and finished goods. It also helps create an error-free and efficient material flow, allowing the plant to optimise its staffing.

Digital print – either on or near the corrugator – will be at the core of a plant of the future.

By integrating digital print, you will improve production in three ways:

- flexibility to produce one piece;
- reduce manpower in the converting department by at least 50% and reduce intermediate storage;
- minimise waste and damage to paper.

THE BOX OF 2025 WILL BE CONNECTED - PEOPLE, MACHINES, LOGISTICS VEHICLES, AS WELL AS THE REELS OF PAPER AND THE CORRUGATOR. ALL OF THEM WILL COMMUNICATE CONSTANTLY. WHAT'S MORE, LOGISTICS WILL BE SO INTELLIGENT, THE SYSTEM WILL LEARN TO OPTIMISE ITSELF.

With digital print, there is a digital workflow, from the original file owner, right through to delivery of the finished product - all with no manual interaction.

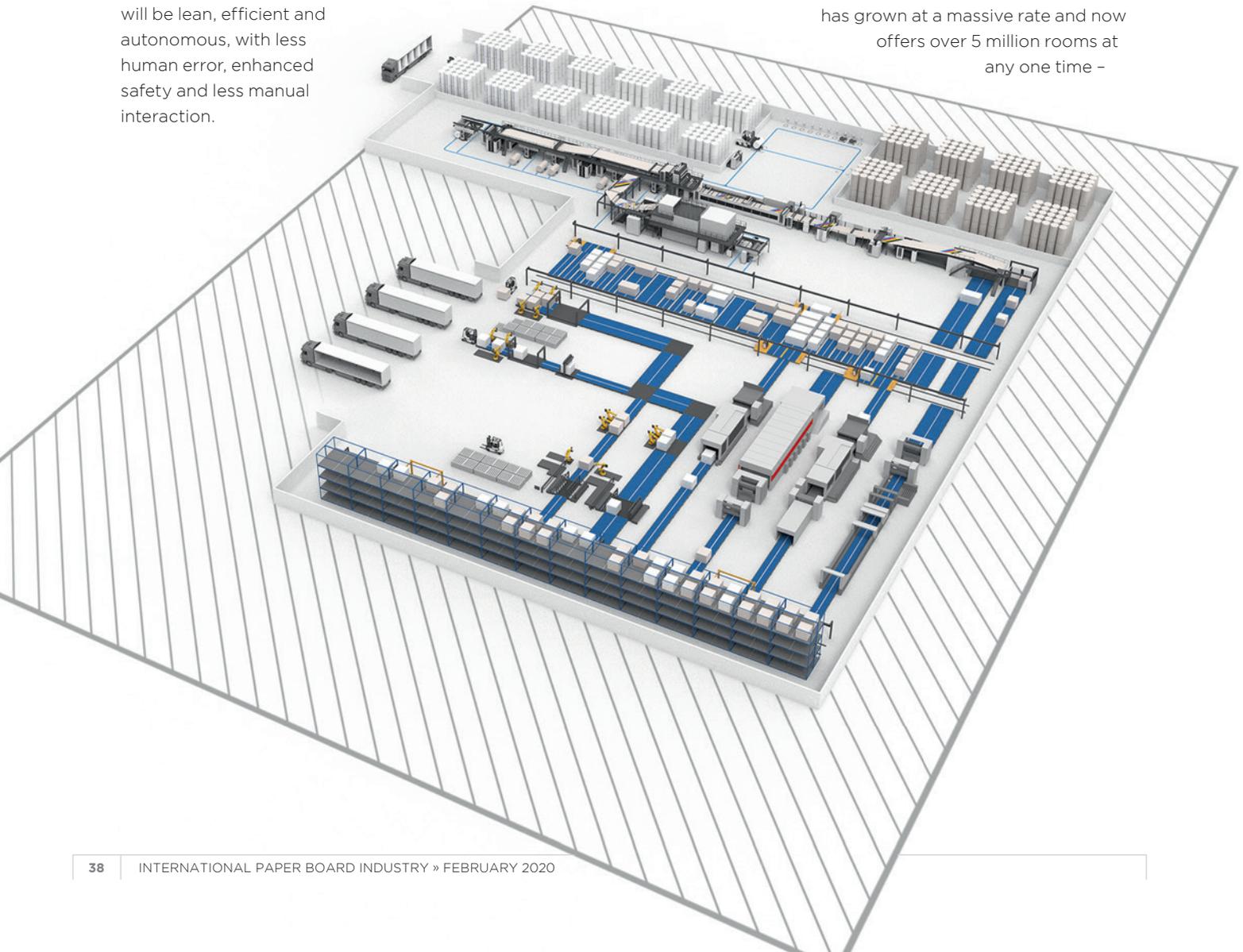
Connected Plant

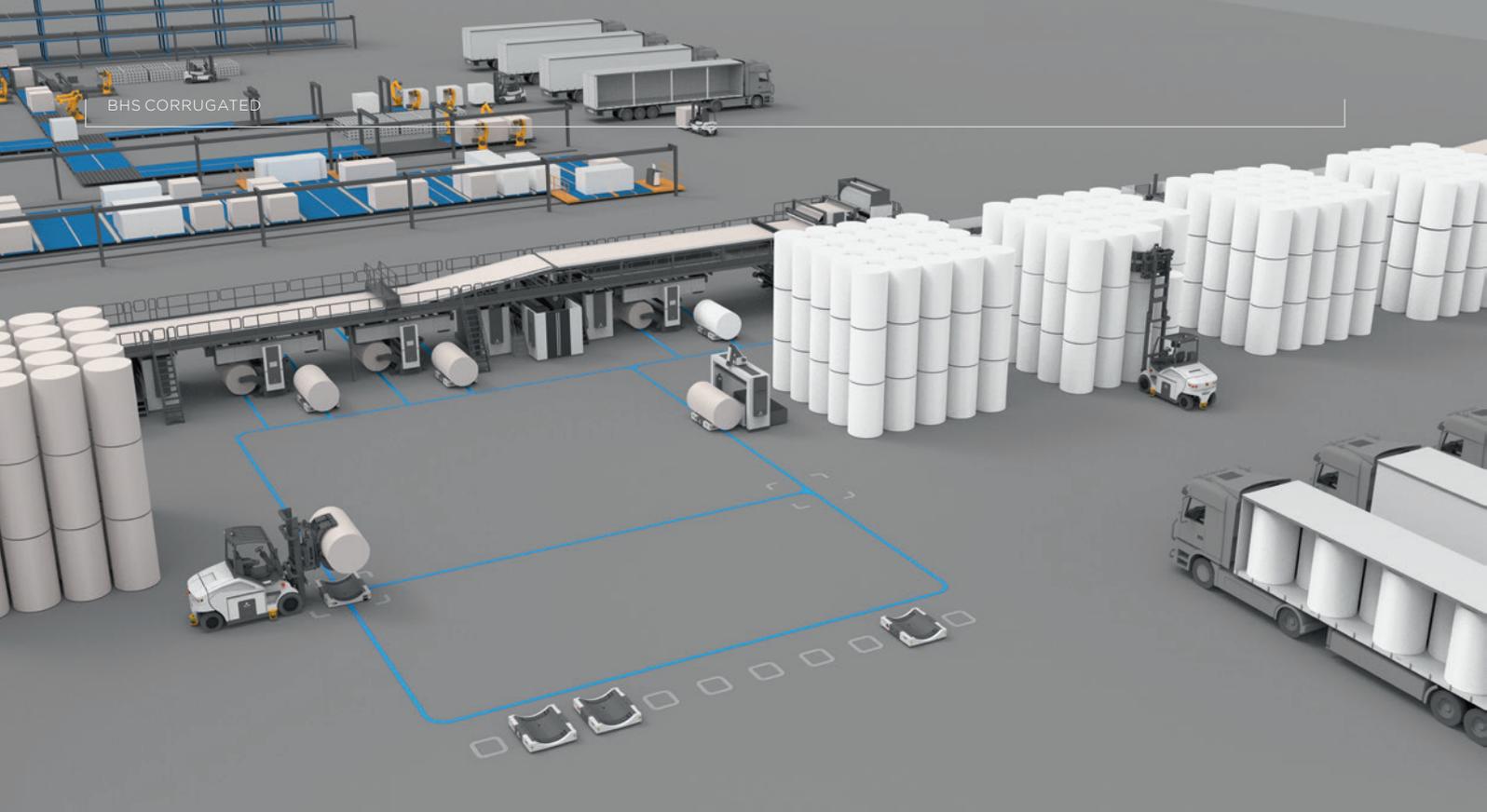
The box of 2025 will be connected - people, machines, logistics vehicles, as well as the reels of paper and the corrugator. All of them will communicate constantly. What's more, logistics will be so intelligent, the system will learn to optimise itself. We will simply need to feed it enough data. The box plant of 2025 will be lean, efficient and autonomous, with less human error, enhanced safety and less manual interaction.

We see a significant reduction in manning levels as well. For an average plant, we would see about 15-20 people per shift only - this means saving half of your wage bill. If you were able to reduce your staffing level by 40 people, you could save around €2.5m per annum comfortably. This assumption is based on a plant that is running a 2.8m corrugator, producing 175m sqm per annum at 400m per min, with all output being converted into boxes... and with digital print integrated at the corrugator.

Incremental Development?

For the plant of the future, you could always just make incremental upgrades to your existing factory. Such incremental steps will help secure your competitiveness today and for the coming years, but is this enough? Do you really want to leave the 'big step' to a real disruptor? Do you believe strongly enough that no-one can come from outside our industry and disrupt? Let's take a look at some examples from other industries. AirBnB is a good one - when they launched, this 'phantom' business has grown at a massive rate and now offers over 5 million rooms at any one time -





yet they own none of them! They are bigger in spread than Marriott, Hilton or Intercontinental groups, who have less than 700,000 rooms each.

How about parcel delivery? Back in 2013, there was a blizzard in the US, which meant that cargo planes were stuck on the ground and no parcels could be delivered. One company was

not happy with this – a company that buys millions and millions of boxes every year – Amazon. As a result of this one snow blizzard, Amazon set about creating its own cargo fleet. The established players, UPS and FedEx, thought that Amazon would fail in their attempt to build a network of planes, as it would cost too much. A fatal under-

estimation by both of the established players! And who is to say that Amazon won't enter the box making industry?

The time to act is now, because it could easily take you four or five years to build and equip a plant that will satisfy your objectives. The reality is that NOW is the time to build the plant of 2025. ■

