



COURIER, EXPRESS AND PARCEL 2022 OUTLOOK: CHALLENGES AND PERSPECTIVES

LETTER FROM THE DIRECTOR

Welcome to the 2021 CEP report. This is the 2nd edition of the report and we hope our findings will give you useful insights to help strengthen your CEP business in the year ahead.

What can we expect in 2022 for the CEP industry?

As the world hopes to emerge from the global pandemic, we are seeing complications starting to appear, particularly in the dynamic volatilities of supply and demand. Companies around the world are scrambling to reconfigure supply chains that are experiencing major disruptions and significant delays in deliveries, while e-commerce demands have not abated. The problem has led to more and more companies reducing their dependency on overseas suppliers, gravitating to local vendors and distributed inventories, calling for strengthened local distribution networks and supply chain diversification.

For CEP providers, these conditions are causing a change in their organisational priorities: price is taking a back seat while reliability becomes the key operational driver. To deliver faster, CEP companies are looking to improve local capacity with critically connected,

smaller networks that involve shorter distances. We expect to see an increasing number of decentralised hubs with smaller, localised distribution centres in the future.

The challenge for CEP companies continues to be handling higher and higher parcel volumes. Many are in a race to cope with capacity and will need to be careful to avoid ad hoc investments in their attempts to prevent losing customers. Many will find they simply don't have the time to build new hubs to cope with capacity issues and we anticipate seeing larger companies acquiring smaller ones as a means to bolster capacity. For others, it will be more cost effective to optimise their existing operations than acquiring or establishing new centres.

In light of this, we expect to see many CEP businesses making substantial investments within their premises, with the adoption of automation tools and advanced data analytics. We anticipate many will look to achieve greater operational excellence, using technologies to exploit every percentage of their existing capacities. We will see improvements in connections within centres, where much capacity is currently lost or the organisation is simply not aware of the possibilities for

optimisation. We may also see add-ons to complement existing infrastructure, such as pouch sorter technologies to deal with small parcels, and counterfeit software to help customers and generate new revenue streams.

For these reasons, we don't anticipate huge capital investments in the costly last mile and expect this will be left to low-capital, digital solutions that will undoubtedly eat into this share of the market. Efforts, instead, will centre on creating 'dark depots' (or 'lights out' centres) where automation will require less manpower.

Finally, we envisage the impact of end-consumer demands playing out in the sector. End consumers will not only insist upon sustainable and green practices, but improved social ways of working and ethical governance. Shareholder interest will have to make room for stakeholder interest.

I hope you enjoy reading the report.

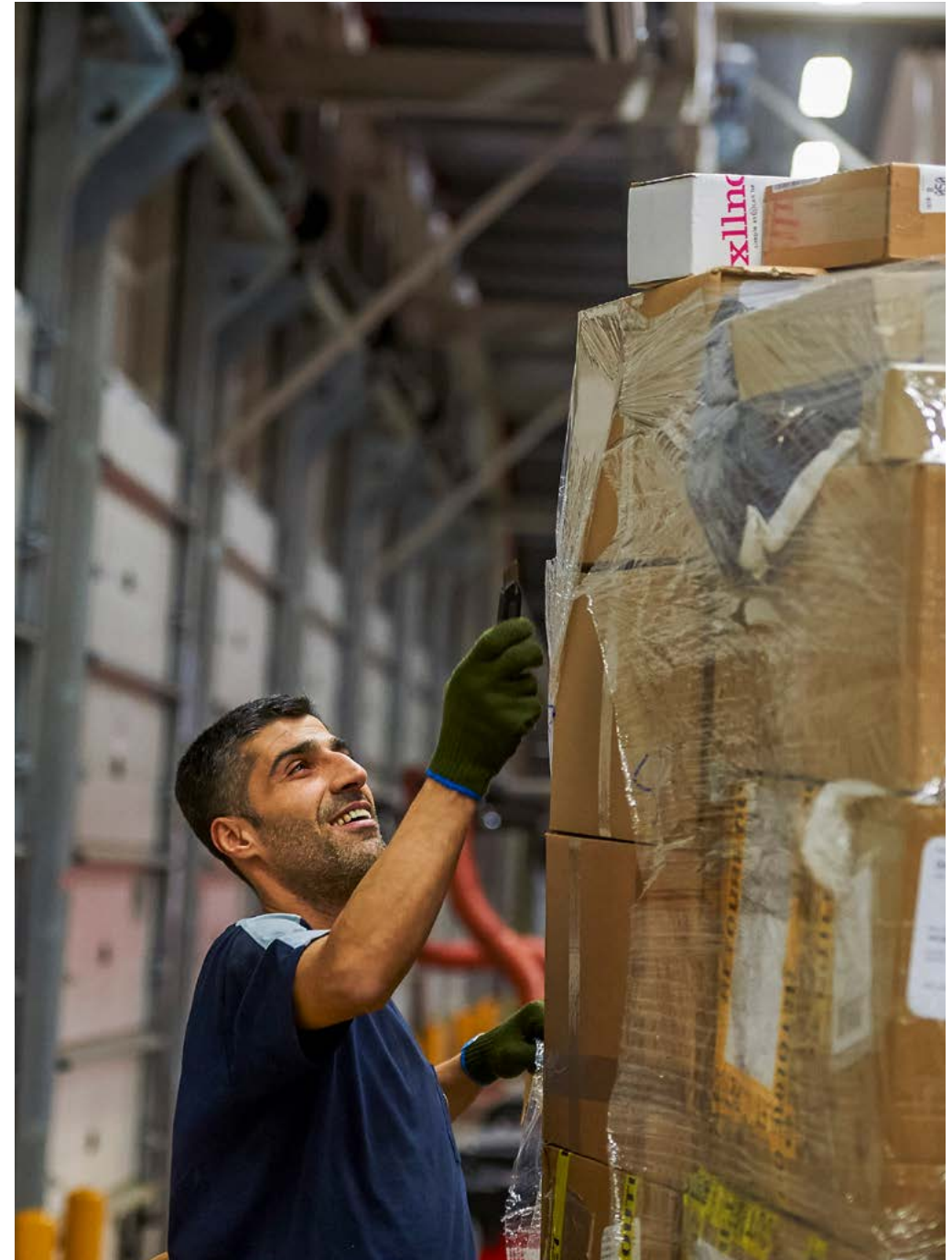
Best wishes
Stephan Heessels
Divisional Director Logistic Systems
BEUMER Group



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CHAPTER 1:
The CEP industry
right now



In our 2020 report, we reported on the significant transformation that the industry had already been undergoing, driven by the surge in e-commerce and growing customer expectations.

We found that as a result, long-term projections looked very healthy, with the CEP market expected to progress at a CAGR of about six percent between 2020-24. We also reported on the disruptive impact of the global pandemic as an accelerant of that growth.

The current situation: A snapshot

According to a recent market study, the trend we saw last year will continue, with the CEP market expecting to exhibit a CAGR of over six percent between 2021-2026.

Source: Mordor Intelligence

In 2020, the global parcels market exceeded US\$500 billion in value, up from just under US\$450 billion in 2018. The market can be broken down into the following:

- Asia-Pacific is the largest regional parcel market by value, accounting for around 40 percent of the global market.
- North America and Europe together

represent a little over 50 percent.

- China is the key growth market, representing almost 62 percent of the Asia-Pacific regional total by value.
- The US is still the largest country market in value terms, although China has surpassed it in volume.
- In Europe, Germany is the largest market, with Poland and the UK being the fastest-growing markets of the main countries (experiencing 8.7 percent and 11.6 percent CAGR respectively between 2015 and 2020).

Source: Research and Markets

From the market research, it is clear that online retail is the main driver of growth in parcel delivery volumes:

- Global online sales were in excess of USD 4.2 trillion in 2020, having grown at an annual rate of 25 percent.
- The largest online retail country markets are the US, UK, China and Japan.
- China has had online retail growth of more than 30 percent per year.
- Growth is high in both emerging and developed economies.
- Globally, online now accounts for almost 20 percent of total retail sales, which is up from around seven percent in 2015.

Source: Research and Markets

Market snapshot



Figure 1 - Source: Mordor Intelligence

STUDY PERIOD:
2017-2026

BASE YEAR:
2020

FASTEST GROWING MARKET:
ASIA PACIFIC

LARGEST MARKET:
ASIA-PACIFIC

CAGR:
>6%

SOURCES:

One year on from our last report, we can see the soaring trend in e-commerce, fast-forwarded by the pandemic, continues unabated.

But while the parcel sector continues to look very healthy, some changes are occurring.

According to the 5th Edition of DHL's [The Logistics Trend Radar](#), global trade growth is slowing while regional trade is on the rise, creating new dynamics in the market. By 2025, it is expected that three major centres of gravity will dominate the global economy: North America, the European Economic Area and Greater China. Worldwide trade intensity will continue to decline as more commerce takes place within these blocs and less between them.

ADAPTING TO A NEW OPERATING ENVIRONMENT: LESSONS FROM THE PANDEMIC

There can be little doubt that the global pandemic contributed to the acceleration of e-commerce growth.

In a pandemic-fueled 2020, consumers spent approximately USD 4.29 trillion online, up from roughly USD 3.46 trillion the year before. Global web sales increased by 24.1 percent,

compared to 17.9 percent growth in 2019. [Source: Mordor Intelligence](#)

According to McKinsey, the consumer shift to online shopping will persist after the pandemic recedes, although perhaps not with the same intensity as during the crisis. [Source: McKinsey](#)

A recent survey of British shoppers by UK-based parcel carrier, Yodel, certainly supports McKinsey's conclusion that consumer behaviour has been permanently altered. The findings showed that almost a third (31 percent) of those surveyed plan to do the entirety of their festive shopping online this year. This is more than a fourfold increase from last Christmas, when only seven percent opted for online-only gift-buying. CEO of Yodel, Mike Hancox, says: "The run-up to Christmas is always one of the busiest periods for online retailers, but this year looks like it will be particularly intense as consumer appetite for e-commerce continues to grow." [Source: Parcel and Postal Technology International](#)

To cope with constraints on physical proximity, sharp surges in demand and other sudden shifts that were required, COVID-19 caused businesses to step up their use of digital

E-commerce has grown two to five times faster than before the pandemic

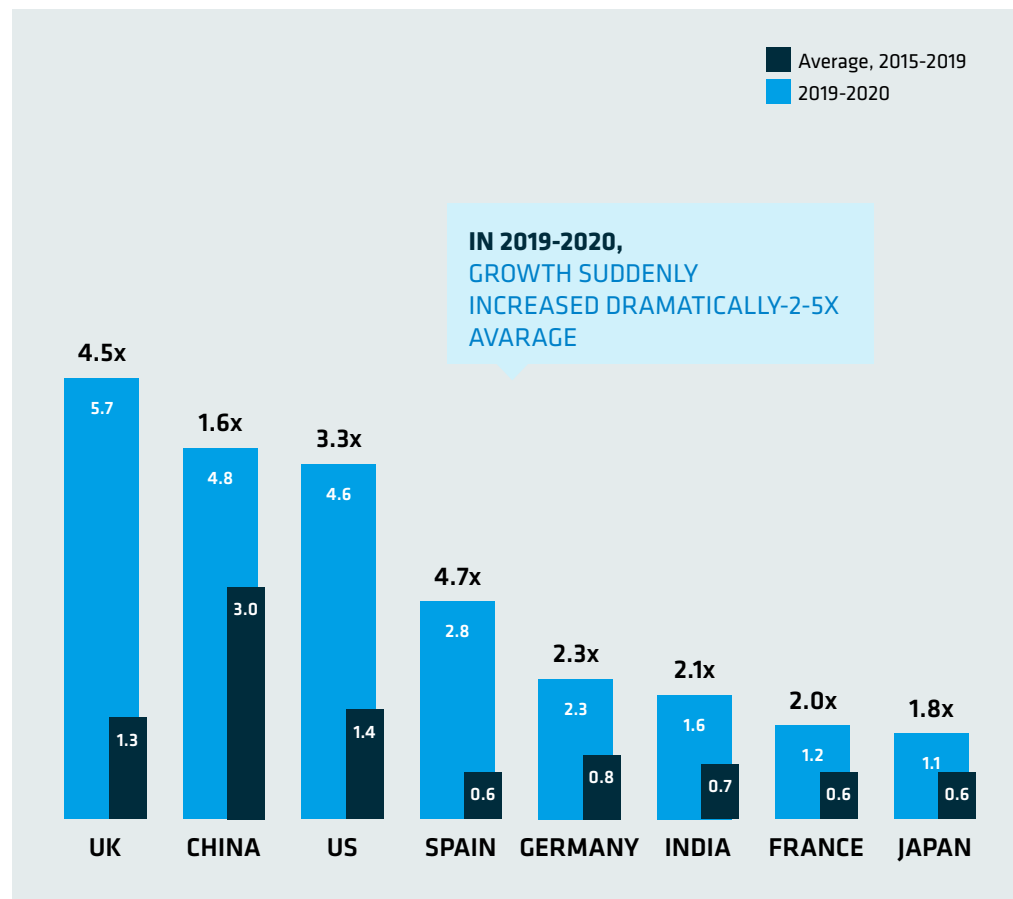


Figure 2 - E-commerce has grown two to five times faster than before the pandemic" from McKinsey article. Source: McKinsey

tools, automation and AI. For Swiss Post, for example, the pandemic has brought into sharper focus the need for robotic technology, as it realises it doesn't have the workforce to cope with the increased parcel volumes.

It is clear that digitalisation will be more omnipresent and critical to the success of individual companies and sectors.

The future

THE AGE OF E-COMMERCE LOGISTICS

Given these dramatic shifts, the CEP sector is now finding itself in the age of e-commerce logistics.

The rate of e-commerce adoption is likely to accelerate further and "anytime, anywhere" delivery models, driven by customer behaviour and expectations, will be a huge focus. Technology will continue to reinvent the parcel industry and be the crucial enabler for increased efficiency and responding to consumer expectations.

We are already starting to see this in the transformation of last-mile delivery, with companies looking at alternatives offered by delivery lockers, pickup points, crowdsourced

deliveries, drone deliveries and autonomous vehicles.

[Source: Mordor Intelligence](#)

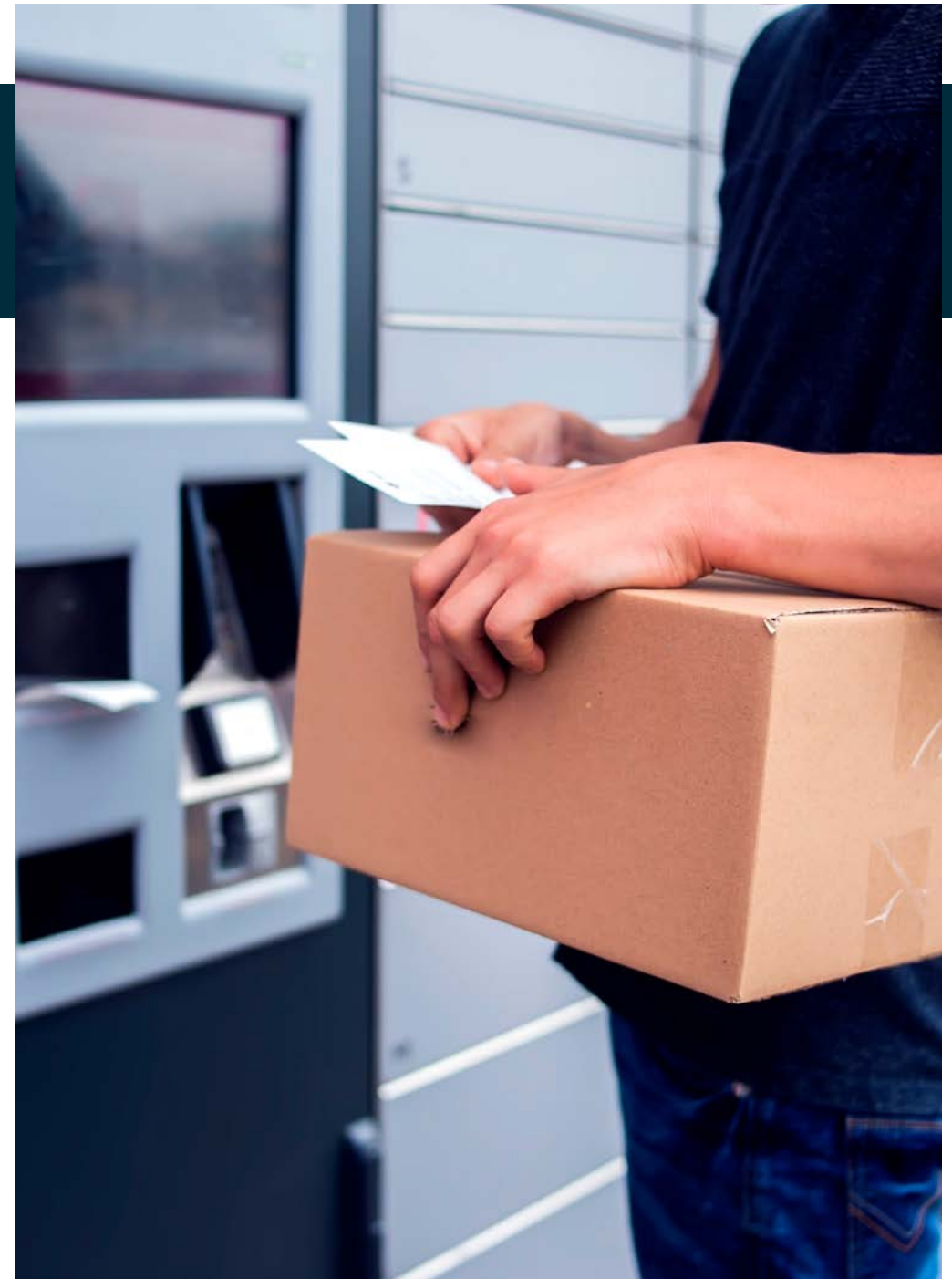
Austria Post, for example, has over the last few years rolled out 500 lockers, covering 100,000 locker compartments all over Austria; and In Post UK recently announced a new partnership with supermarket chain Tesco to install automated parcel machines at up to 500 of its largest sites by the end of November 2021.

[Source: Parcel and Postal Technology International](#)

In the future, e-commerce logistics will be able to accommodate customers with last-mile delivery changes, permitting modifications to where and when they may receive their orders.

[Source: DHL](#)

Croatian Post has already been implementing digital solutions – such as ProGlove, an intelligent wearable scanning device – to connect its end customers with its parcel handling processes. By digitalising its parcel sortation, Croatian Post customers can now make micro transactions with its systems fully able to respond with parcel delivery modifications 'on the fly'.



What's more, the choice, competitive prices and convenience offered by online commerce is starting to make a mark on business-to-business purchasing as the consumer experience of e-commerce is carrying over to businesses transactions. In the next decade, business-to-business e-commerce may transform the procurement of industrial equipment, automotive spare parts and many other goods.

Source: DHL Report

Most CEP companies will therefore be looking for flexible operational capabilities that will expand or contract easily to meet customer demand.

OUTCOME-BASED SERVICES: THE TRANSFORMATION OF TRADITIONAL PRODUCT-BASED BUSINESS MODELS

Enabled by digitalisation and affordable IoT technologies across industries, outcome-based service delivery models will feature significantly in the logistics industry's new normal within a decade. Rather than purchasing expensive equipment such as airplanes and AGVs, companies will want to pay for equipment usage (by the hour of operation or items successfully picked), and not when equipment is sitting idle or broken. Source: DHL Report

A Synchron Research report finds that 98 percent of surveyed end users want equipment manufacturers to offer service agreements for maximised product uptime.

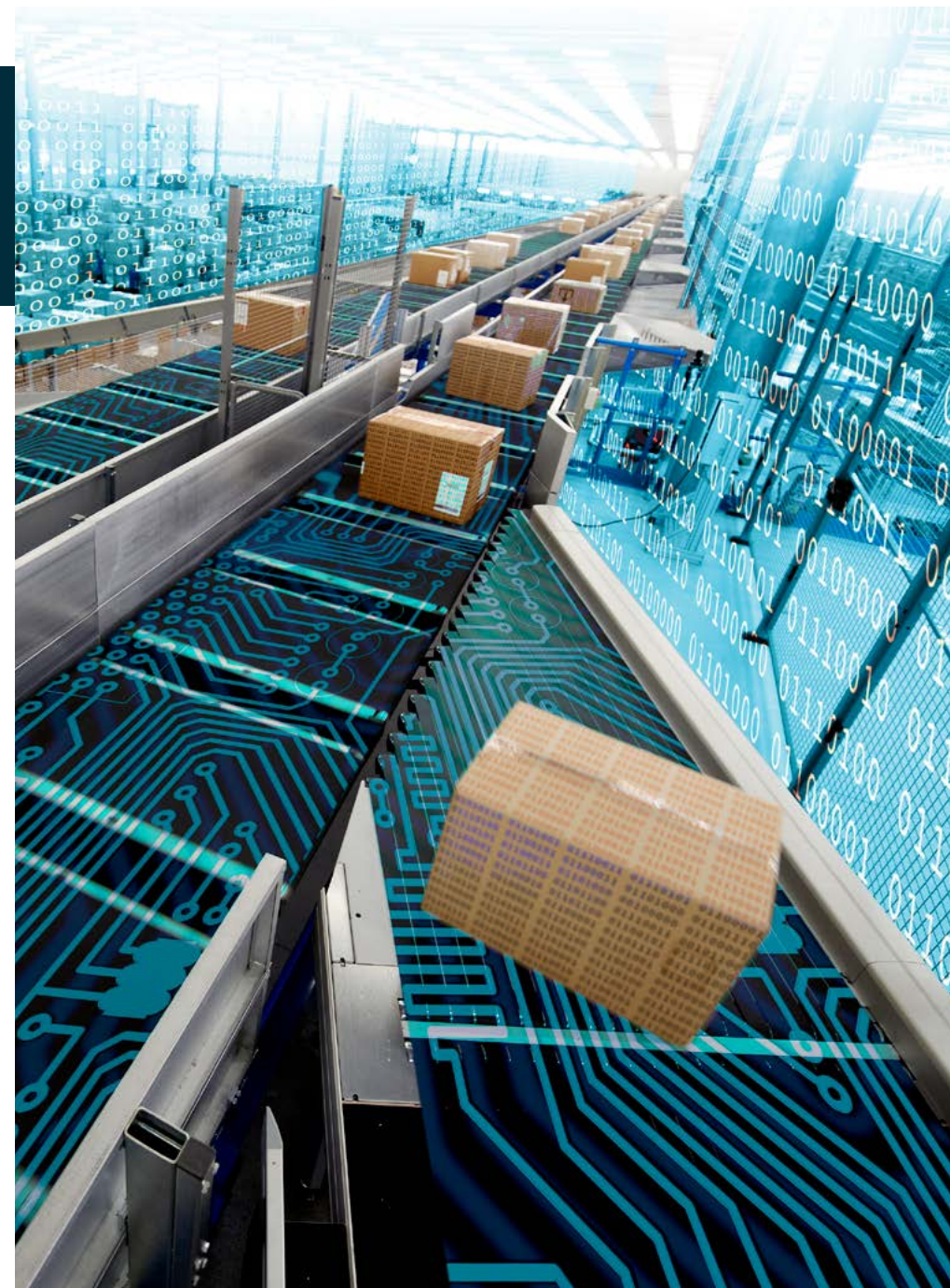
Source: DHL Report

New user-centric rather than product-centric customer engagement models will appear with outcome-based service delivery models in B2C and B2B relationships. Service providers, in return for gaining access to users through more touchpoints which will create new opportunities to enhance user loyalty and add value, will need to accept greater risk and responsibility for parts, technicians and knowledge.

To fully enable outcome-based service delivery concepts, companies will have to adopt condition-monitoring technologies and service billing models.

SUSTAINABLE LOGISTICS

According to the World Economic Forum, by 2030 the growth of e-commerce alone will



result in 36 percent more delivery vehicles, generating an additional 32 percent of carbon emissions. It also states that the equivalent of a full truckload of plastic, from product parts to packaging, currently enters the ocean every minute and will quadruple by 2050 if no action is taken.

Source: [World Economic Forum](#)

In the face of such predictions, CEP companies will have to take steps to eliminate the environmental harm of ‘business as usual’. This will demand the use of efficient energy sources, improved material substitutes, optimised buildings and processes and effective environmental policies. Creating greener alternatives for customers will become a competitive edge and preferred path forward. DPD Group has noted that in the UK, for example:

43% of e-shoppers are likely to switch to a different e-tailer offering wider sustainability delivery options.”

Dominique Mamcarz,
CSR Director at DPD Group

Some CEP businesses are already taking firm steps to make their operations greener. Just recently, DHL Parcel UK announced it is investing a further USD 3.8m to add 50 new electric vans to its fleet across UK cities, before the end of 2021. Swiss Post also is starting to electrify its parcel fleet, looking at energy efficiency options for all new equipment and has installed solar panels in all its parcel centres.

Source: [Parcel and Postal Technology International](#)

To create a sustainable logistics model, CEP businesses will need to develop in new ways in the following areas:

PROCESS OPTIMISATION:

Delivery routes will have to be optimised using historic traffic data, travel times, delivery windows and vehicle types. Nordic postal house PostNord, for example, is already developing a digital twin of its long haul transportation in order to optimise its routes and reduce mileage.

ZERO-EMISSION FLEETS:

Demand for zero-emission vehicles will drive deployment of electric vehicles, more efficient batteries and fuel cells.



LOGISTICS FACILITY DESIGN AND PLACEMENT:

With buildings using 41 percent of the total energy in the US – 12 percent more than transportation – companies will have to adopt sustainable building materials, better insulation, and IoT devices to optimally manage utilities, lighting, heating, ventilation, air conditioning and machinery in their service facilities. Building placement will also be crucial, such as placing centres near import hubs and destinations, as well as near public transport lines for facility workers.

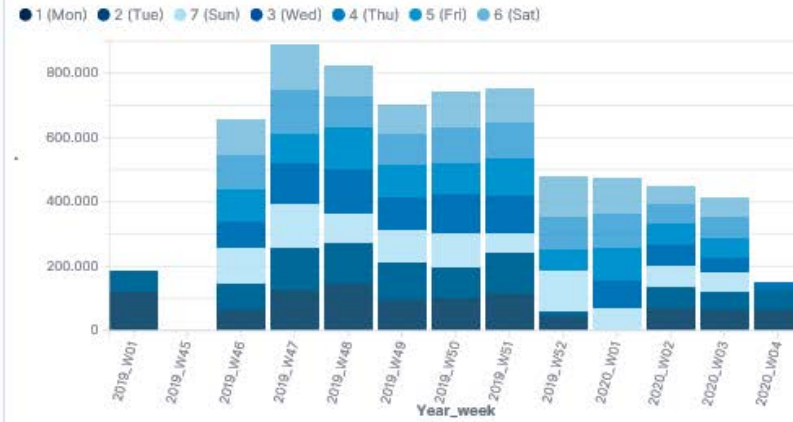
Source: DHL Report

In summary, the future strategies of CEP companies will need to balance an improved customer experience with sustainable business development goals. They will be reconciled through technology solutions, the e-commerce opportunity and ways of leveraging CEP capabilities to reduce operating costs and improve sustainability.

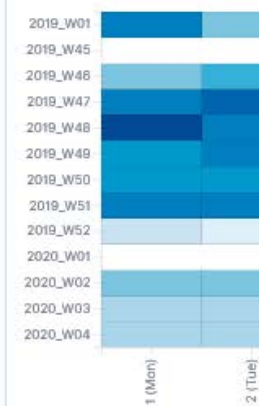


CHAPTER 2: Digitalisation: The continued case for digital technologies

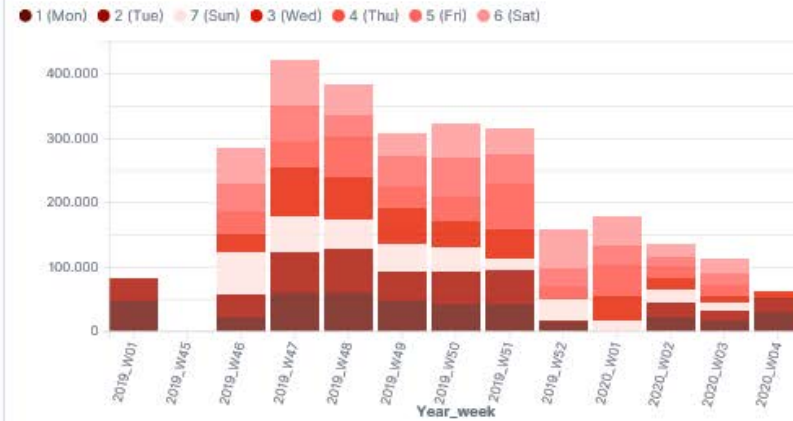
Inductions per week



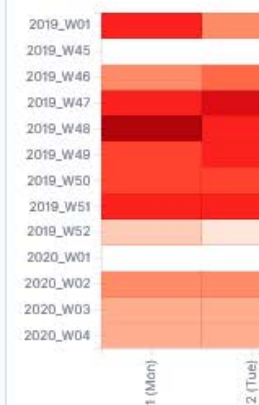
Inductions heatmap



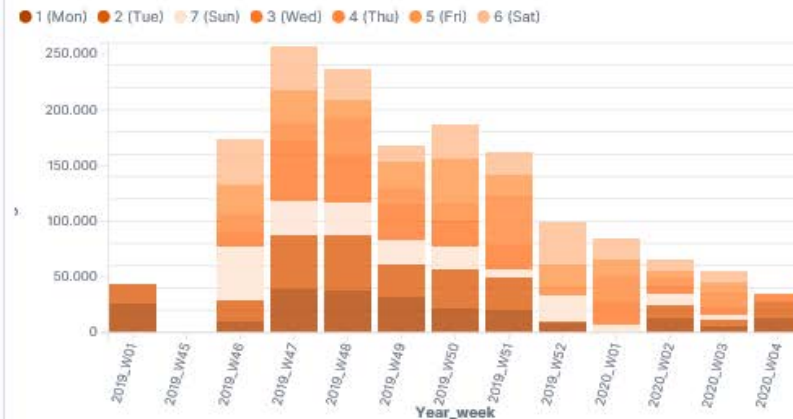
Recirculations per week



Recirculations heatmap



Discharge failures per week



Discharge failures heatmap



Last year, we covered the potential of digital technologies for the CEP sector to deal with their capacity constraints while generating revenue in an otherwise low-margin industry.

We maintain that the sector must step into the digital age more than ever in order to stay competitive. Innovation in technologies such as big data and advanced analytics, artificial intelligence, robotics and automation and the Internet of Things will be critical to staying ahead.

There are many logistics technology trends on the radar that will shape the logistics landscape, aptly depicted by DHL's [The Logistics Trend Radar](#).

In our view, two technologies that have great potential to impact efficiency in CEP operations will be advanced data analytics and blockchain.

Advanced data analytics

According to BEUMER Group's Lead Software Product Architect, Anders Lildballe, data analytics tools are garnering increasing interest in the sector, as awareness of the value of data grows and cloud-based solutions become more affordable. That so many companies are pressed for capacity from the confluence of

At a Glance: The Logistics Trend Radar

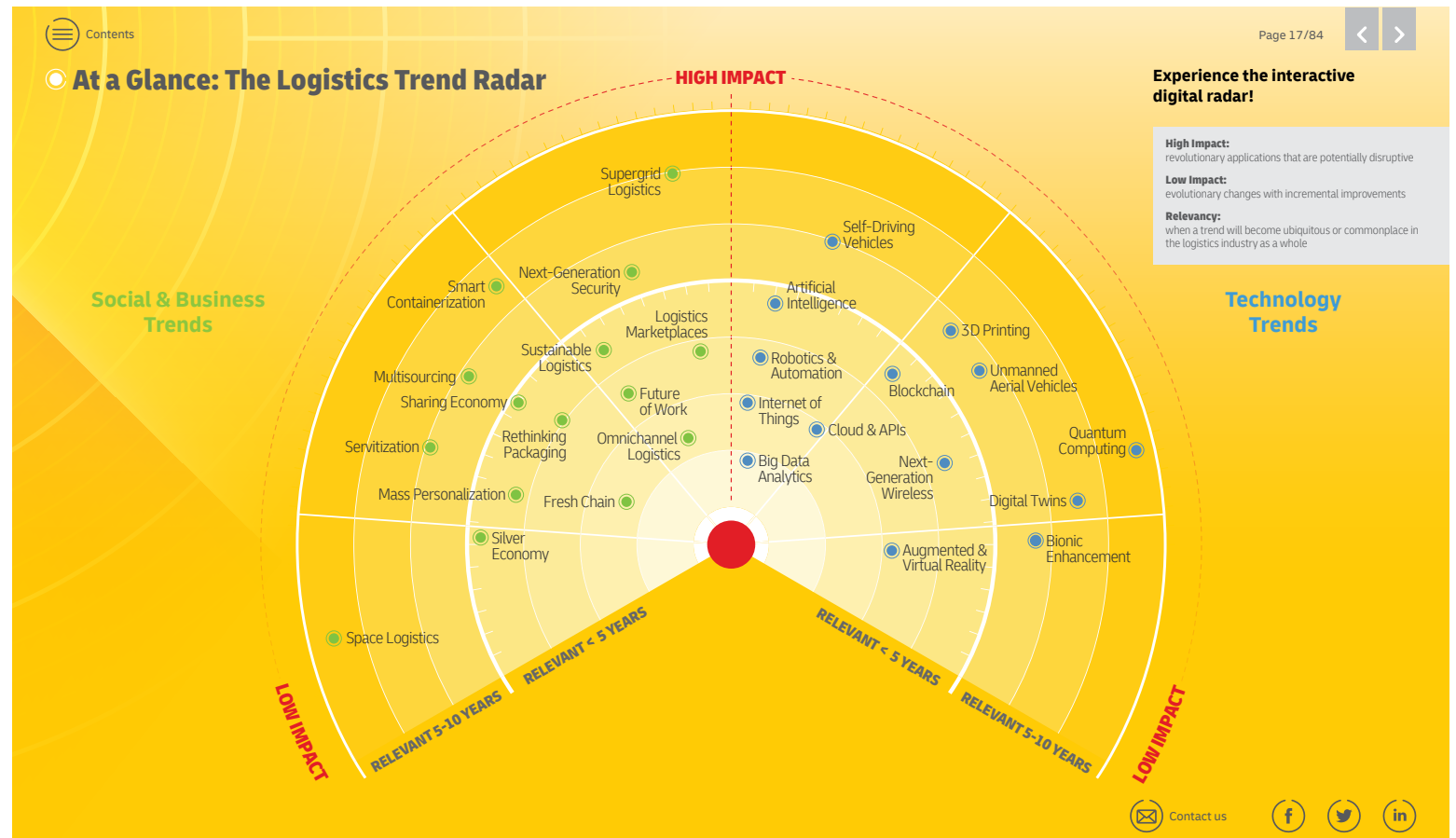


Figure 3 - Source: DHL

e-commerce and the global pandemic is further influencing this awareness.

Yet many logistics professionals still struggle to systematically and effectively make use of their data. For the majority of operators, says Lildballe, data use relates more to their customers and end consumers than their sortation processes. But facilities can be so much more efficient if they start to use their sortation data. In fact, in overlooking their sortation data, many facilities are running at just 60 or 70 percent of their theoretical capacity, Lildballe says.

Using the data captured in a hub's typical processes – from sorters, scanners, scales, cameras, conveyors, chutes and inductions – can provide CEP professionals with visibility into how operations inside their facilities look.

REAL-TIME PROCESS OPTIMISATION AND SIMULATION

Billions of data points can be condensed into a whole new way of looking at operations – at the maintenance, operational and management levels of the business. With data analytics tools, Lildballe says, CEP companies can uncover hidden issues that are not so obvious, gain invaluable insights and discover more efficient ways of addressing their challenges.



Visualisation dashboard showing data analytics results.

Managers can make better decisions with granular visibility of processes which can become transparent in live dashboards. Uncovering patterns and anomalies in real-time data can enable operators to better allocate resources and focus on areas most requiring attention.

Simulation models take optimisation one step further by allowing CEP professionals to test the impact of various levers that could be costly to execute on the ground. Nordic postal house, PostNord, for example, has created a digital twin of its sortation system to help it optimise its operations.

Companies can leverage analytics in this way to help fill in many variables as input and derive forecast models. Output can then inform future strategies and policies.

Source: DHL Report

For further information on how data analytics tools help CEP companies optimise their systems, read our articles [Digitalisation of the distribution centre: An Introduction](#) and [Why data analytics is the next big thing in CEP](#).

THE FUTURE OF DATA ANALYTICS TOOLS

In implementing data analytics tools, says BEUMER Group’s Lidballe, parcel handling

Data Analytics

A brief introduction

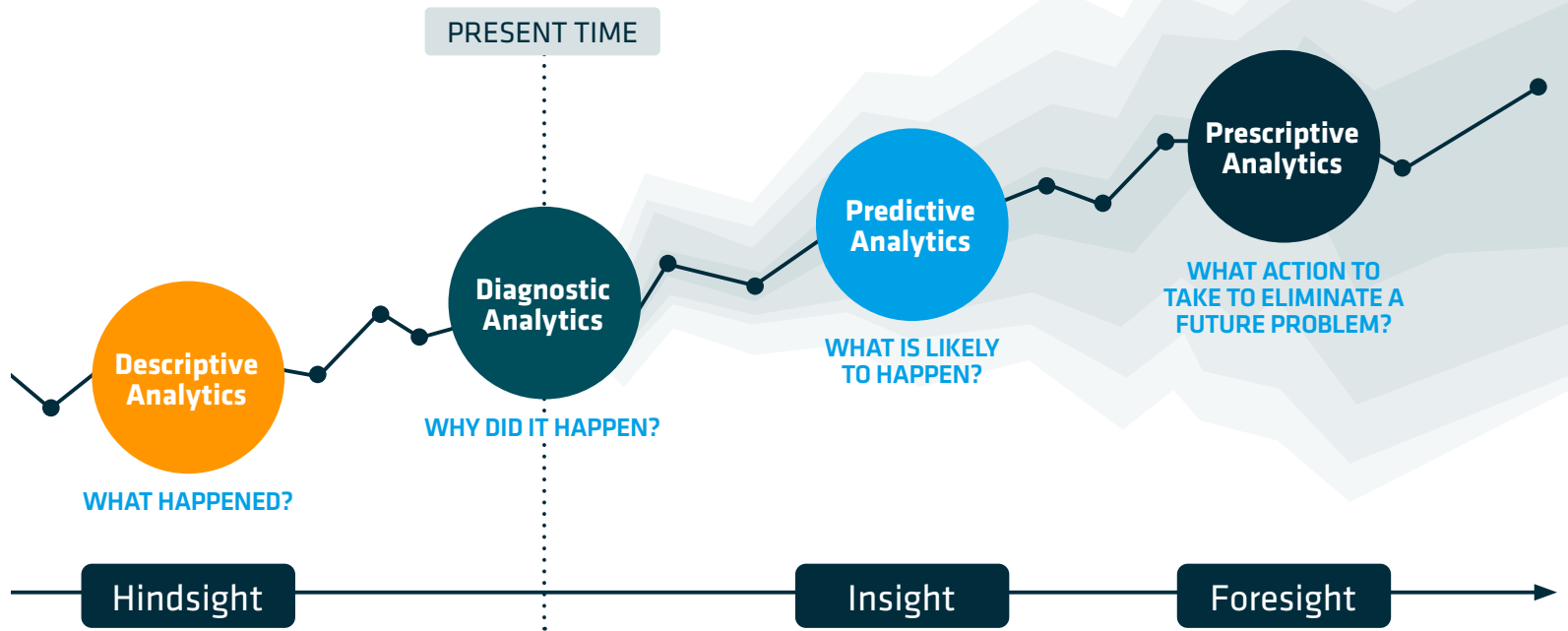


Figure 4 - Source: BEUMER Group



systems will get to the point where they self-optimize, applying learnings back into the system to be able to better control flows, allocate chutes and sorter positions, in real time. These machine learning capabilities of the systems will start moving beyond predicting performance problems and optimisation opportunities to being able to prescribe them, enabling individual systems to be optimised to their edge capacities.

In the near future, many data sources will join to create even higher ranking data pools. According to Lildballe, tighter integration with third party data will give CEP companies perspectives over their entire systems, end-to-end. He cites the example of PostNord that is successfully optimising its line hauls and reducing mileage through last-minute, automated decisions that avoid congested routes.

The potential of blockchain technology

In August 2020, [McKinsey](#) noted that despite the hype, blockchain is still an immature technology, with a fledgling market where a clear recipe for success has yet to emerge. When it comes to the CEP sector, this certainly holds true. As BEUMER Group's data expert,

Anders Lildballe notes, blockchain adoption in the CEP industry is virtually non-existent and a use case has yet to materialise.

Yet, says Lildballe, blockchain technology – a distributed ledger (or database) for securely transmitting any type of information without the control of any central authority – has potentially game-changing benefits for leaner, faster and more transparent CEP operations, given its obvious benefits. The core advantages of blockchain:

DECENTRALISATION:

Information can be verified and value can be exchanged without having to rely on a third-party authority.

TRANSPARENCY:

Stakeholders receive controlled access to a shared dataset.

CRYPTOGRAPHIC SECURITY:

Transactions are cryptographically signed to increase trust.

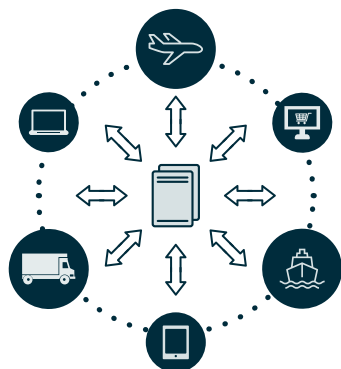
IMMUTABILITY:

Data cannot be hacked, manipulated or compromised.

[Source: McKinsey](#)

HOW BLOCKCHAIN MIGHT BE APPLIED TO THE CEP SECTOR

According to Lidlballé, here are some of the potential applications of blockchain-based data platforms to drive profound, positive change in the parcel industry:



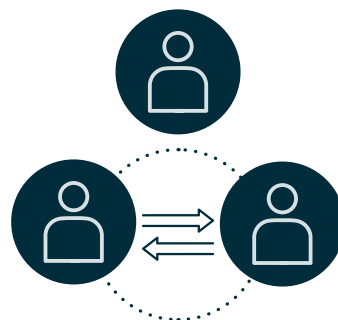
FACILITATION OF INTERFACES AND DATA EXCHANGES:

Having a single system available to CEP companies, their customers and stakeholders will make information sharing and verification more accessible, more transparent and safer.



FILLING IN MISSING INFORMATION:

A blockchain could contain all data relating to a specific parcel collected throughout its journey. While in principle this can be achieved with existing technologies, the attraction of blockchain is its decentralisation, making it cheap to use and extremely trustworthy.



DRIVE OPERATIONAL EFFICIENCIES:

Cost can be taken out of existing processes by removing intermediaries or the administrative effort of record keeping and transaction reconciliation.



ASSURANCES OF DATA INTEGRITY:

The ability of a blockchain ledger to remain unaltered and unchanged will create trust between the parties, assuring all involved of the integrity of data, which will be hugely beneficial in a multi-stakeholder industry.



TRACEABILITY AND VERIFICATION OF ITEM SOURCES:

Blockchain is providing radical transparency in food supply chains and could equally be applied in the CEP sector to trace the origins of products passing through their hubs, providing digital authentication to strengthen the intellectual property rights of their customers and the ability to trace the origins of prohibited and counterfeit goods.

So, while precise use cases of blockchain in the sector have yet to be seen, there is no doubt that the technology will change how CEP companies do business in the future. Blockchain technology is likely to optimise many processes, providing cheaper, faster and easier ways to collaborate and share data. And CEP professionals are going to want to leverage its key unchangeable and trustworthy attributes in the future.

BLOCKCHAIN



CHAPTER 3:
Small parcels
and the case for new
technology



With the continuing surge in e-commerce, the capacity of CEP companies to handle volumes of small and low cost parcels is constantly being challenged, calling for new ways in which to optimise small-parcel handling.

A solution that we see gaining traction in the CEP sector is the pouch system. Borrowed from warehouse and fulfilment facilities, this proven solution offers a whole new approach to the prevailing small parcel problem for the CEP sector.

The pouch system: A proven technology adopted in a new industry

The pouch system, also known as the pocket sorter, is exactly what it sounds like: an overhead sortation system which relies on pockets, pouches, or bags to store and convey products.

It was originally designed for the very specific and niche fashion industry to hang individual garments and later evolved to add bags or pouches to the hanger. For the CEP industry, the technology is perfect for conveying small and difficult items that conventional conveyor



loops, line sorters and other conveying technologies are not suited to or are pressed for capacity to handle.

Benefits of the pouch system to CEP companies

The advantages of the pouch system to CEP companies are obvious when it comes to space, capacity and throughput rates. Its benefits can be summarised in this way:

OPTIMISING FACILITY FLOOR SPACE MEANS LESS NEED TO EXPAND

The technology uses overhead space effectively, storing and buffering the pouches in tight, compact rows. It optimises existing footprint and instead of expanding current facilities, it offers an opportunity for dramatic CAPEX savings.

DYNAMIC BUFFERING AND STORAGE TO MEET BUSINESS PRIORITIES

The dynamic buffer acts as an interim storage mechanism, until business requirements are fulfilled, such as numbers of parcels per destination, containers, bags, postal routes, cut-off times, priorities or route sequencing. The buffer can be used for designated

CEP sortation with a BG Pouch System

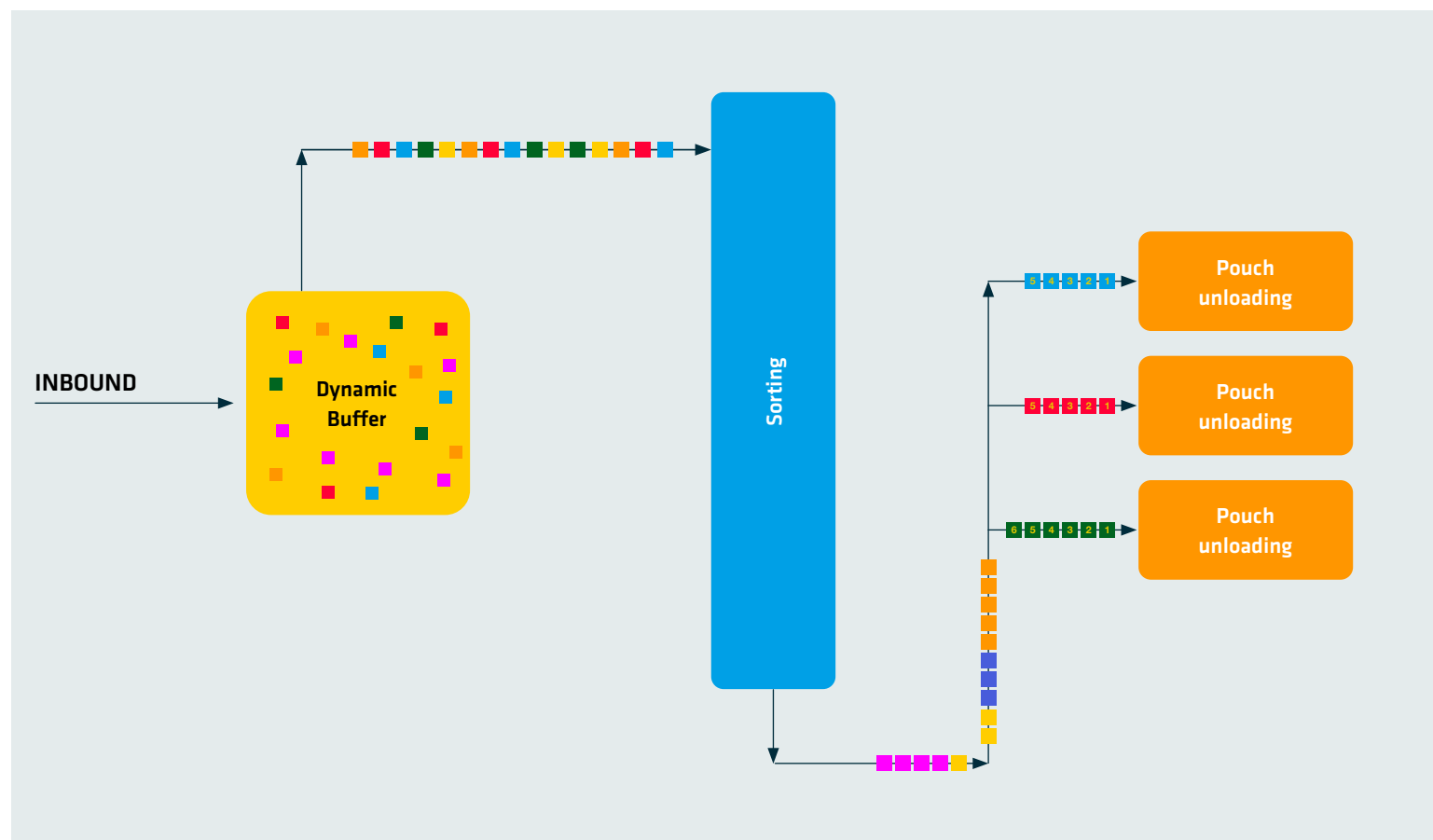


Figure 5 - How CEP sortation works using the pouch system.

purposes on a specific morning, day or week. It's flexible in terms of destinations and the number of parcels per destination. Routes can be changed up until the point parcels leave the buffer for maximum optimisation.

SORTATION AND SEQUENCING IDEAL FOR HANDLING E-COMMERCE

A distinctive feature of the pouch system is its unique matrix sortation. Sorting according to the matrix algorithm is achieved in 3-step sequences in which parcels are sorted and sequenced according to destination, container, trailer or delivery van, even down to the reverse order in which the parcels will be picked out of the van.

HIGH THROUGHPUT ENABLES GREATER CAPACITY

Throughput and weight capacities of the technology differ depending on the service provider. But minimum throughput can be as much as 10,000 pouches (or parcels) per hour and each pouch can hold up to 7kgs, although this can be custom-fit to requirements.

Because the system relies on contactless magnetic accumulation, it is a gentle way of handling small products that not only frees up capacity but also extends the life of existing systems.

HANDLING NON-CONVEYABLES THAT ARE NOT FIT FOR OTHER SYSTEMS

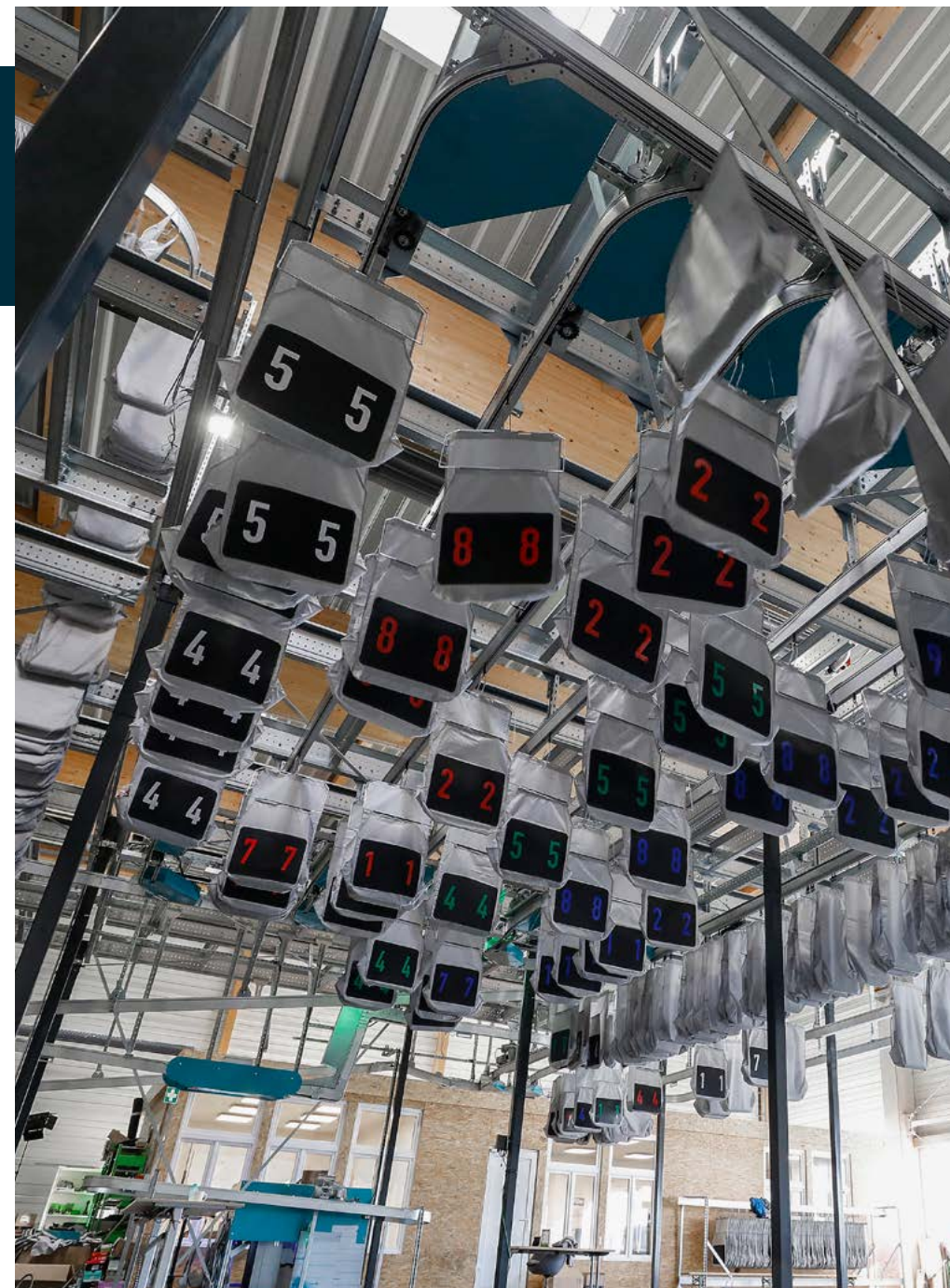
The pouch system can handle small, non-conveyable items which are not fit for sorting on a loop system. In addition, it doesn't require a lot of destination chutes, unlike traditional systems that require a fixed number of destinations according to the number of delivery routes.

100 PERCENT TRACKING SAVES ON LABOUR

The pocket sorter is equipped with RFID technology and is able to deliver 100 percent tracking, accurate parcel identification and access at any time to any article within the system.

LOW MAINTENANCE REDUCES OPEX

The pouch system requires minimal maintenance, as few spare parts are needed and there is virtually no wear and tear. Its robust and simple design is easy to clean, operate and maintain, reducing business OPEX.



When is the pouch system the right solution?

So, when could the pouch system be an appropriate solution for a CEP company struggling with small parcel handling?

Firstly, that will depend on the physical dimensions of the business' parcel mix and the percentage of small parcels making up that mix. Small packages are typically considered to be packages that are small, irregularly shaped, difficult to convey or unable to be handled by traditional sorting technologies. For many hubs, these types of parcels can constitute as much as 85 percent of the business' total parcel volume.

Secondly, how important is it to be able to keep and buffer parcels until cut-off times? How flexible does the route planning of the business need to be? Is it important to be able to change and modify route planning?

Thirdly, how easy is it for the business to extend its sortation capacity, given pouch sorter technology occupies roof space? Will the current building height allow it and what will be required for future expansion? The modular system design of the technology means a CEP

Going high capacity

Adding standard blocks to the modular system enables greater sorting capacity

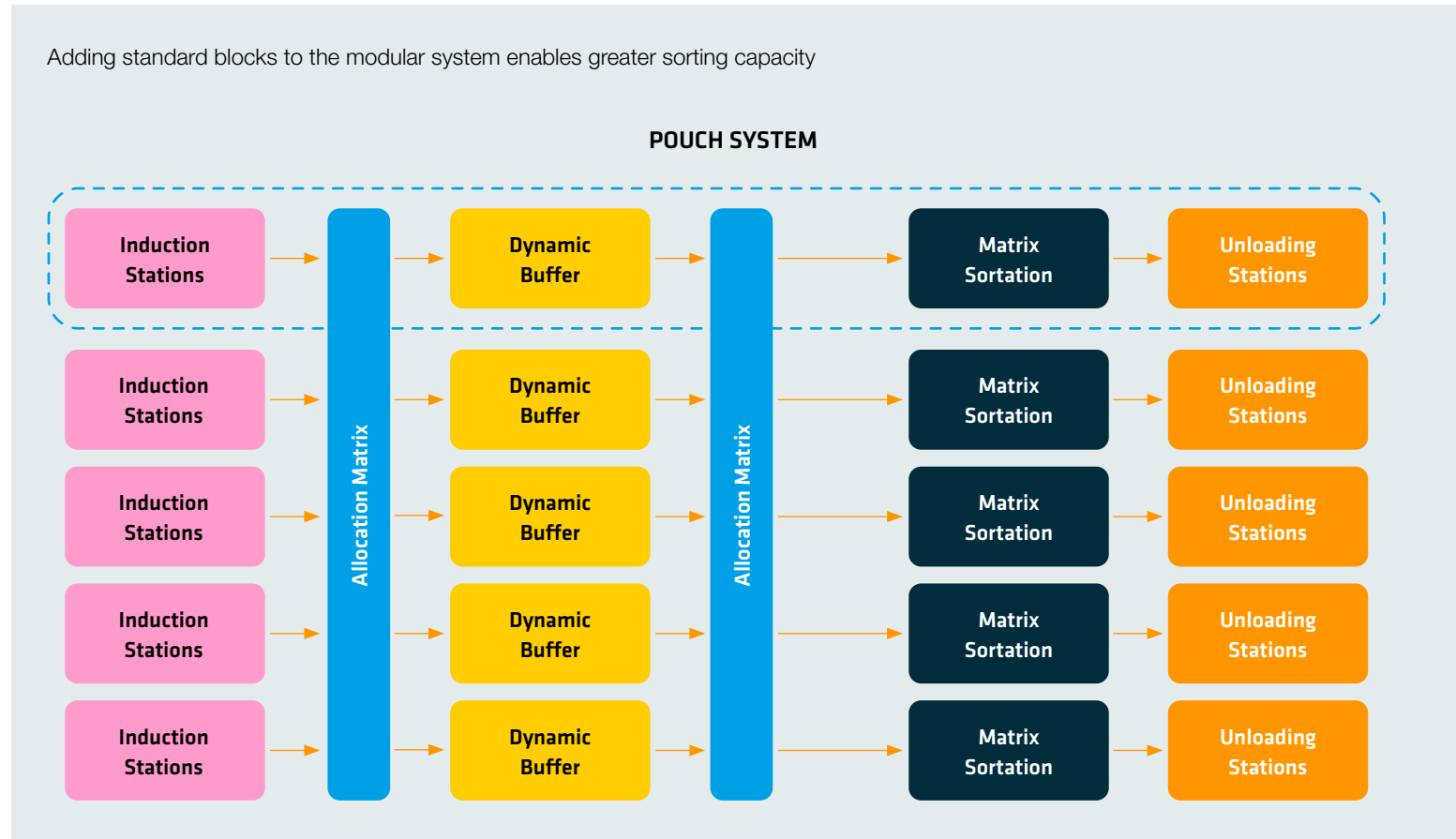


Figure 6 - The modular system design of the pouch system.

business can start with a basic system that can be scaled and extended to meet changing capacities.

For CEP businesses looking for greater flexibility in their systems, gaining the optimal use of their buildings and extending the lifetime and capacity of their overall distribution systems, now could be the time to complement their existing systems with the pouch system.



CHAPTER 4:
**The problem
of counterfeit goods
and how to deal
with it**



The e-commerce explosion not only impacts logistics firms in their handling capacities. It also leads to increased numbers of counterfeit products being transported through their doors.

According to the International Chamber of Commerce, e-commerce involving small parcels purchased online and shipped via express or international postal services is being intensely misused by traffickers in illicit trade and these high volumes of small parcels are too numerous for authorities to inspect comprehensively.

[Source: ICC](#)

Brands are dedicating big budgets to stop counterfeits but are losing the fight with miniscule percentages of illicit goods being caught. They are therefore increasingly looking to CEP companies for solutions.

The scale of the problem

If there's one thing we know about the trade in counterfeited goods, it's that it continues to grow at alarming rates.

[Source: World Trademark Review](#)

In their 2019 joint report, [Trends in Trade in Counterfeit and Pirated Goods](#), the OECD and the European Union Intellectual Property

Office (EUIPO) found that, based on 2016 data, the international trade in counterfeit and pirated products amounted to USD 509 billion, estimated to be 3.3 percent of world trade. This was up from USD 461 billion in 2013, or 2.5 percent of world trade.

At the EU level, imports of counterfeit products equalled EUR 121 billion (USD 134 billion) in 2016, representing up to 6.8 percent of all EU imports.

The dramatic increase in online purchasing and small parcel shipments has only exacerbated the problem and there is quantitative evidence that small parcels are being misappropriated to transit counterfeit goods across global markets either through postal or express services.

[Source: OECD and EUIPO](#)

China and Hong Kong continue to be the predominant countries of origin of counterfeit and pirated goods, although they originate from virtually all economies in all continents. The problem impacts a growing number of industries, from common consumer goods, to luxury items, to B2B products and IT goods.

[Source: OECD and EUIPO](#)



Fighting counterfeiting in the supply chain and the role of logistics firms

With global trade authorities identifying the role of the sector in the conveyance of counterfeit goods, it's clear the issue is becoming problematic for the CEP industry.

WHAT GLOBAL BRANDS ARE SAYING ABOUT THE ISSUE OF COUNTERFEITS:

"We have a big problem with fake small parcels coming from Hong Kong"

"There are big problems with spare parts coming from China"

"Counterfeit delivery via small parcels is a current and growing issue"

"We have tried solutions, but nothing has worked"

"We catch less than 1% of small parcels with customs"

"We have no tool in this space"

The possibility that CEP companies could be held liable as 'intermediaries' in handling counterfeit goods in the future is not the only problem; it's simply bad for business. Handling counterfeit goods is harmful to the customers they work with and brands are turning to the sector for solutions.

But technological solutions are starting to evolve that CEP businesses can utilise to assist their customers and help resolve deficiencies in counterfeit enforcement. All while generating a new revenue stream.

Know-your-customer software to the rescue: How it works

One such technology, a know-your-customer software service, is currently being piloted in European CEP companies by Berlin-based startup, Countercheck. Countercheck has developed machine learning software to identify and process counterfeit goods at the point of sortation.

The solution brings the CEP company and its customer brands together in one platform through a layer of software. Brands upload their existing counterfeit data to the platform and through OCR camera technology, the software



is able to cross-reference the data with every parcel travelling through sortation. When its algorithms identify counterfeit parcels, the software activates an investigation.

Suspected counterfeit parcels are opened, inspected and photographed so the brand can confirm the bona fides of the item. A genuine item is repackaged and sent on its way; a fake good automatically initiates a claim with the relevant customs authority for further investigation or probable destruction.

THE BENEFITS OF COUNTERFEITING SOFTWARE

Counterfeit's software platform has been designed to provide a solution that benefits both brands and CEP companies.

The software is free for CEP firms, making its ability to reach into the supply chain to block counterfeit goods particularly attractive to those brand protection teams whose budgets have been reduced, just as post-pandemic production increases.

Countercheck's process

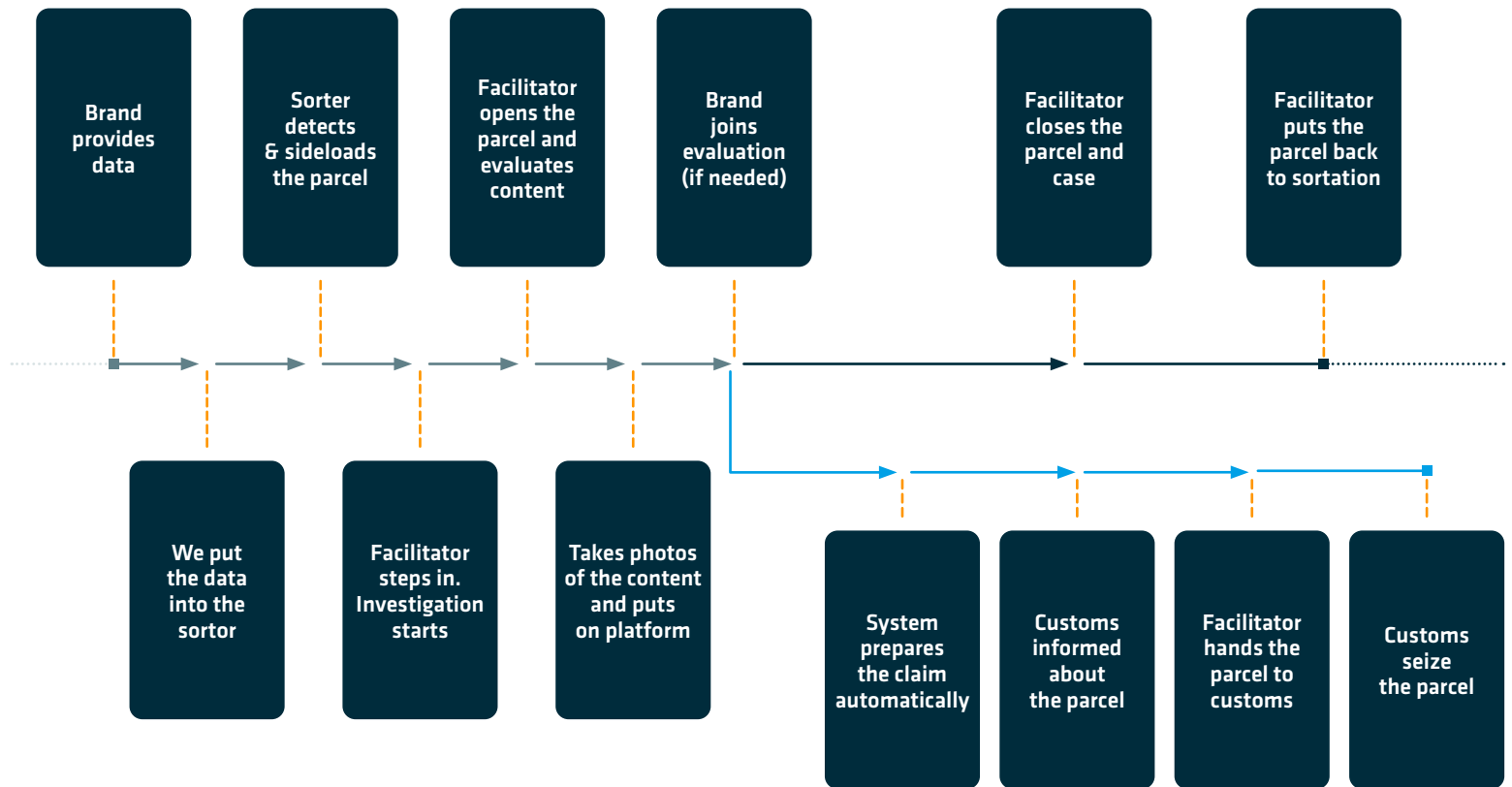
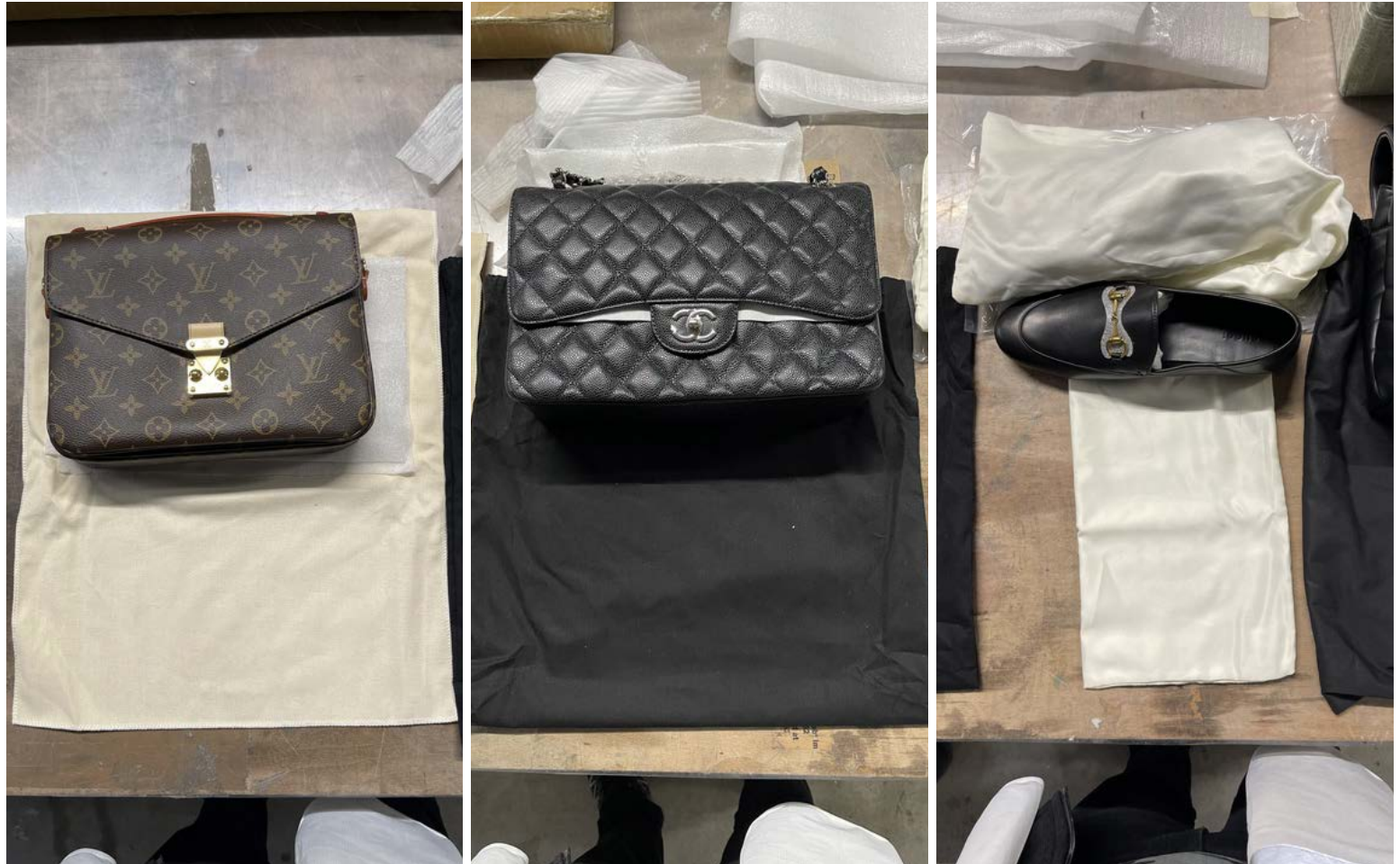


Figure 7 - Countercheck's on-site facilitator investigates counterfeit parcels and hands them over to customs on behalf of brands.

The solution, founded in logistics knowledge and expertise, also has much to offer CEP professionals:

The platform is premised on a pay-per-catch model, charging the brand a fee for every item caught. The more items caught, the lower the fee per item. So it gives CEP firms the opportunity to generate new revenue streams.

And with data analytics systems, CEP companies will soon be able to identify hotspot routes and transport corridors of counterfeit goods and help their customers increase surveillance accordingly.



Counterfeit goods successfully caught by Countercheck's KYC software.

CHAPTER 5:
Market insights:
How CEP companies
are adapting





We asked a number of CEP companies from different parts of the globe about how they are meeting the new e-commerce demands, the technological initiatives they're now exploring and how they are tackling the calls for sustainable business practices. Here's what they had to say.

DEUTSCHE POST AG

How has Deutsche Post managed the continuing growth in parcel volumes and adapted its retail network to the new e-commerce demands?

We are massively expanding our sorting capacities and continue working on further linking our networks for goods-carrying shipments for both, parcel and mail.

The global pandemic has forced postal operators to accelerate their digital transformations. Can you highlight one technological initiative Deutsche Post has taken in this regard?

For many of our more than twelve million registered customers, DHL Packstations are an integral part of their online shopping experience and an indispensable part of their everyday lives. That's why we're investing large sums to further expand our Packstation network across Germany. By the end of 2021 we will offer our customers access to 7,000 Packstations located throughout the country. In addition we expanded the features of our app for private customers: Our Post & DHL

app now includes the most important postal and parcel services for receiving and sending - from purchasing letter or parcel stamps to tracking trackable shipments.

What are the biggest changes you see in customer expectations and what is Deutsche Post doing to meet them?

Looking at business customers we see an increasing need for different package size solutions and injection delivery times as well as more flexibility for package delivery to end customers. With a still constantly growing e-commerce market, consumers on the hand demand reliable shipping and 24/7-tracking solutions. We also see an increasing demand for delivery time slots. For DHL parcels in Germany we already launched a live-tracking solution for consumers and will expand this further for postal shipments next year.

New players are now entering the parcel industry, potentially disrupting the market and taking a share from established postal players. How is

Deutsche Post dealing with this challenge?

We are expanding our capacity and keep working on continuous quality improvements, in particular by exploiting the full potential of our digitization initiatives (as mentioned above).

What response has Deutsche Post taken in tackling the climate crisis?

With our Post & Parcel division we already are the most climate friendly post and parcel delivery service in Germany. But we still want to improve in the course of the coming years and want to contribute to the Group's Sustainability goals. Thus, investments will be made in the construction of carbon-neutral production facilities, retrofitting existing buildings and further expanding our existing electric fleet. We also aim to initially triple the current 2% share of parcel shipments transported between larger parcel centers by rail, and in the longer term gradually increase that share to as much as 20%.



SWISS POST

How has Swiss Post managed the continuing growth in parcel volumes and adapted its retail network to the new e-commerce demands?

Swiss Post has leveraged three ways of doing this. First, we have expanded our capacity within our existing sites. Second, we have made use of the capacity that has been freed up in our letter sorting business by building parcel sorters in our letters centres. Third, we are expanding our network with new sites in new locations and in doing so, we are implementing relief measures to ensure the transformation of our core capacities.

The global pandemic has forced postal operators to accelerate their digital transformations. Can you highlight one technological initiative Swiss Post has taken in this regard?

Digital transformation is not a new topic for Swiss Post. However, one particular initiative Swiss Post has taken on in logistic operations is robotic technology. We're realizing we can't keep up with the capacity demand without a

higher degree of automation. Our employees have been essential in dealing with the parcel volumes in the past and especially during the pandemic but to meet the future capacity demands, combined with the scarce logistic space, we have to automate in new ways.

What are the biggest changes you see in customer expectations and what is Swiss Post doing to meet them?

We have seen an overall growth in e-commerce. Everyone moved online to shop, especially during the pandemic. We assume this trend will continue, as we're not seeing a drop off to pre-pandemic levels so far. We are also seeing an increase in speed, with everyone wanting same-day or at least next-day delivery. On the other side, our business customers want to extend their deadlines for bringing in their parcels. This is very demanding on capacity and capacity planning, especially in the peak days during the week.

New players are now entering the parcel industry, potentially disrupting

the market and taking a share from established postal players. How is Swiss Post dealing with this challenge?

Swiss Post has a market share in the parcel business of 80% and wants to keep that position through our excellent service level – ensuring as little damage of goods as possible and high customer orientation. We have managed that very well so far, but the increasing volumes make it more demanding to maintain a good quality of service. To meet the future needs of our customers, we are collaborating with dynamic small partners, for example, when it comes to same-day delivery.

What response has Swiss Post taken in tackling the climate crisis?

Swiss Post has a long history of using electric vehicles. We started to electrify our fleet ten years ago in our letter business and now every vehicle is electrified. We're working hard to achieve the same in our parcel delivery. We consider energy efficiency for any new equipment we purchase and we have put solar panels on all our letter centres. We

also look for environmental designs in our new sites and even have bee hive colonies producing our own honey on the rooftop of our letter centre in Zurich.



AUSTRALIA POST

How has Australia Post managed the continuing growth in parcel volumes and adapted its retail network to the new e-commerce demands?

Australia Post has committed a total investment of more than AUD 1 billion over three years to help service the growing demand for services, including an additional AUD 400 million in new parcel facilities, fleet and technology by mid-2022.

This investment includes major parcel processing facilities that we opened recently in Brisbane, Sydney, Melbourne and Adelaide. We're also investing in five brand new facilities that are currently being built throughout Australia – in Perth (Western Australia), Bayswater and Tullamarine (Victoria), Botany and Western Sydney (New South Wales).

The global pandemic has forced postal operators to accelerate their digital transformations. Can you highlight one technological initiative Australia Post has taken in this regard?

Australia Post has seen online shopping increase by as much as 32 percent during the pandemic, with our organisation delivering more than 10 million parcels a week across the country. So, we think it's essential that we continue to invest in major parcel processing hubs in order to keep up with the boom in online shopping experienced during the pandemic. In addition, we've committed AUD 20 million in upgrading systems to cloud based solutions over the next year to improve parcel scanning and tracking in the network.

What are the biggest changes you see in customer expectations and what is Australia Post doing to meet them?

We know our customers want their parcel delivered as quickly and efficiently as possible. Over 5.7 million Australian households are now consistently shopping online and online shopping is expected to continue to grow by 9-10 percent per annum on average over the next decade.

That's why we are increasing our capacity

further with five brand new processing facilities before our peak period in 2022. Four of these new facilities are located close to major e-commerce hubs in the states of New South Wales and Victoria, with the fifth a AUD 42 million investment on the west coast to meet the growing demand for parcel services in Western Australia.

New players are now entering the parcel industry, potentially disrupting the market and taking a share from established postal players. How is Australia Post dealing with this challenge?

Australia Post has an unrivalled delivery and post office network and we are investing to extend our already extensive last mile delivery network. We're always looking at new solutions, such as launching a new facility in Adelaide and pop-up facilities across the network to add extra processing capacity.

What response has Australia Post taken in tackling the climate crisis?

We have a crucial role to play in building

a sustainable future and are committed to reducing emissions and landfill while increasing our recycling efforts. We have Australia's largest electric vehicle fleet for last mile delivery and are expanding this fleet, which is better for the environment. We reached our 2020 targets of reducing emissions by 100,000 tonnes - akin to taking more than 41,665 cars off the roads - and diverting 100,000 tonnes of material from landfill, equivalent to 16 Olympic-sized swimming pools of waste. In 2020, we set a science based target to reduce our Scope 1, 2 and 3 emissions by 15% by 2025 (FY19 baseline). We were one of the first 13 Australian businesses – and one of the largest – to have an emissions target officially endorsed by the Science Based Target Initiative. This target aligns with the commitment to the Paris Agreement goal to keep global temperature change within the 'well below 2C' climate scenario, putting us on the pathway to net zero emissions by 2050.



POSTNORD

How has PostNord managed the continuing growth in parcel volumes and adapted its retail network to the new e-commerce demands?

We are continuously looking into our capacity across the organisation – both taking terminals, hubs and workforce into account. The task of monitoring parcel growth and capacity issues has become even more crucial and cross-organisational with the strong growth in parcels during Covid-19 lockdowns. Our capacity projects involve balancing parcel volumes, time slots and technology.

We have acquired Nærboks to extend and more easily control the dispersion of our retail network locations. Furthermore, we are increasing self-service solutions at our service points and planning to reduce the time slot that the consumers (receivers) have to pick up their parcels across our retail network locations.

The global pandemic has forced postal operators to accelerate their digital

transformations. Can you highlight one technological initiative PostNord has taken in this regard?

One of our main focuses is to digitalize the consumer experience even more through our app. We want our app to be future-proof, simple and consumer-centric. We are only developing new app functionalities based on thorough analytics of the consumer's digital behaviour and needs. We have just launched a customer service chatbot through the app making it easier for the consumer to e.g. chat about a parcel delivery but also making it easy for us to learn more about our users.

What are the biggest changes you see in customer expectations and what is PostNord doing to meet them?

During the Covid-19 lockdown in Denmark, the consumers preferred having their parcels delivered at home. This signals a slow shift away from collect parcels sent to service points. We see that consumers might continue to prefer home deliveries in the future based on their good home delivery experiences

during lockdowns. Therefore, we are trying to make it even smoother and more flexible to receive parcels at home by e.g. introducing home delivery on Saturdays and an ETA service. Because of the overall strong parcel growth, return volumes are increasing too. Thus, we see the market for return parcels as a “new” battle ground in the coming future.

Our customers (senders) have increased their focus on sustainability. They are increasingly asking about our initiatives related to sustainable parcel delivery and requesting reports highlighting their own CO2 emissions. We are currently developing a technological solution making this sustainable reporting easier and faster. More and more customers also want to compensate for their CO2 emissions through their parcel deliveries. Therefore, we are constantly looking for collaborations with credible partners who can help with climate compensation projects – preferable in Denmark. However, we currently not seeing a willingness to pay for sustainable parcel delivery among consumers (receivers).

New players are now entering the parcel industry, potentially disrupting the market and taking a share from established postal players. How is PostNord dealing with this challenge?

It has become even more crucial to continuously monitor the market and our competitors. We seek to actively use customer, consumer and market insights to deliver on parcel delivery needs. We try to evaluate market standards each time a new player enters with new functionalities. In addition, we are more quickly testing prototypes in the market to stay on top of trends. It has also become more crucial for us to collaborate with all kind of actors when it makes sense.

What response has PostNord taken in tackling the climate crisis?

PostNord has a goal of being fossil-free by 2030. We are working hard to hopefully achieve this earlier. We are testing alternative fuels such as HVO biodiesel, biogas and electric cars as well as keeping up with



POSTNORD

technological developments. In addition, we are testing various solutions that can optimize the space in our delivery fleet and have optimized our energy consumption at all terminals using LED and CTS control. Foremost, we work to ensure a reduction in direct and indirect CO₂ emissions coming from activities within our organisation (cf. the GHG protocol, scope 1-3). Where this is not yet possible, we offer our customers climate compensation on their parcel deliveries through our “Parcels with care” initiative. By the end of 2020, we had reduced or CO₂ emissions in Denmark by more than 68% in 10 years.





DPD NETHERLANDS

How has DPD Netherlands managed the continuing growth in parcel volumes and adapted its retail network to the new e-commerce demands?

DPD has managed to grow capacity in parcel volumes by opening three new locations. Our HUB Eindhoven already had overcapacity, still we opened our depot in Amsterdam just at the beginning of this huge growth spurt. The depot was designed to be sufficient for the next four years but we saw that it was completely filled last year during the COVID-19 pandemic.

Because of this development, we opened our third depot in Maastricht, in the south of the Netherlands, just before the peak period. This enabled us to cope with the volumes in our sorting centers. We moved parcels from HUB Eindhoven to the depot in Maastricht to free up space in HUB Eindhoven for processing international parcels and to balance the load. This has enabled us to scale up quickly to meet the market demand.

In addition, we now carry out two waves of sortation across all the depots – the second wave is a bit smaller, but it gives us the additional sorting capacity we need.

We also use data to optimize our processes, to see how we are using the sorter system and how we can optimize it, i.e., how to push more parcels through the system within the same time frame. We also use data to forecast, monitor and put strategic roadmaps in place.

The global pandemic has forced postal operators to accelerate their digital transformations. Can you highlight one technological initiative DPD Netherlands has taken in this regard?

The digital environment and innovations are very important at DPD. One difficulty we faced was how to transfer parcels to the end consumer during the pandemic. Our drivers are obligated to obtain a signature confirming parcel receipt, yet they couldn't have contact with the recipient. Within three weeks we were

able to develop an app, just using a GPS code and a photo, that allowed drivers to confirm delivery without coming into contact with the end consumer. We managed to turn this contactless solution around in an incredibly short amount of time.

We've implemented new anti-counterfeit software in our sortation systems, because there is a lot of money involved in that market. That's why we're working on this kind of customer sorting capacity and intelligence to help counteract that sort of thing. This new solution, which doesn't require any additional hardware, but works with OCR technology, has been able to capture counterfeit goods which enables us to help our customers in their fight against the trade in illicit goods, while generating a revenue stream for us.

We've also launched an app for our drivers, the DPDrivR, and we won the Parcel & Postal Technology International award 2021 in the Last Mile Delivery Innovation category with the app.

The DPDrivR app enables drivers to see their individual performance directly on a daily basis, focusing particularly on delivery performance and customer reviews. Through gamification, DPD motivates our drivers to continuously improve their performance. This way DPD gives our drivers the opportunity to develop using positive and motivating game elements. Thanks to the app, the driver knows better than ever before what is expected as regards delivery performance and is immediately able to improve this performance. It's also extremely motivating to receive positive feedback instead of only hearing about performance when something goes wrong.

What are the biggest changes you see in customer expectations and what is DPD Netherlands doing to meet them?

The COVID-19 pandemic caused a rush in demand in the parcel delivery industry, with nationwide lockdowns, home isolation and preventive measures generating a huge rise in parcel deliveries. Not only in the Netherlands,



DPD NETHERLANDS

but throughout Europe. Due to the large volumes, capacity problems have arisen, causing shippers to engage more multi-carriers. Shippers turned to DPD to deal with the volumes that their customers could not handle with a regular carrier. We see now that shippers no longer want to be dependent on one carrier. We have been flexible in this regard and have helped many customers out with their volumes.

New players are now entering the parcel industry, potentially disrupting the market and taking a share from established postal players. How is DPD Netherlands dealing with this challenge?

The COVID-19 pandemic has produced an unprecedented rise in demand for deliveries of food, pharmaceuticals and healthcare products. We distinguish ourselves in value by offering more to our customers. That's why we acquired BK Pharma Logistics and BK Sneltransport to meet new demands in

temperature-controlled transport. BK Pharma Logistics and BK Sneltransport specialise in conditioned pharmaceutical transport for major national and international firms in the pharma and healthcare industry. It is precisely because of this specific knowledge that we approached BK Pharma Logistics and BK Sneltransport to embark on a cooperative venture.

What response has DPD Netherlands taken in tackling the climate crisis?

Since 2012, we have been delivering parcels 100% CO2 neutral, at no extra cost to our customers. But we aim for more; DPD wants to become the reference in sustainable delivery.

In 2020, we delivered 1.9bn parcels worldwide. But when it comes to protecting future generations and our cherished planet, we all share the same address. That's why we've reduced our CO2 emissions per parcel

by 18.8% since 2013 and we'll reach 30% by 2025, when our delivery vehicles in Europe's 225 largest cities will be 100% low-emission.

We have set our own target of zero-emission deliveries in the 45 largest cities in the Netherlands by 2025. And we aim to be fully electric by 2030.

We are not just looking at our vans, but also at our long transportation trucks. Instead of using two trucks for four containers, we are looking to do the same work with one truck, which will make a huge difference in our carbon footprint. This development is well underway now and we will be accelerating it even more. These sustainable approaches that allow us to really reduce carbon emissions are becoming the standard at DPD.

CONCLUSION

In last year's report, we concluded that CEP companies would be well equipped to bring about the transformation required to meet evolving e-commerce demands and customer expectations by adopting digital tools and processes that go beyond sortation optimisation.

One year on, we believe that assessment holds true now more than ever. Indeed, if the global pandemic has made one thing clear, it's the business imperative of CEP companies making technology-driven changes. While this was somewhat underway prior to the pandemic's emergence, digital transformation has taken on a new urgency. Put simply, those CEP companies that focus on digital transformation and are able to work with it on a strategic level will perform better in the future than those that don't.

To transform their businesses in ways that are flexible but capable of learning, sensing

and adapting to changing externalities, it's fundamental that CEP businesses have the ability to work with – and activate – data. By adopting real-time data analytics and machine learning tools, CEP professionals can gain competitive advantages through data-driven decision making and predictive maintenance operations. Data analytics tools will enable smoother CEP operations and improve employee experience. And while the full potential of blockchain data platforms has yet to be exposed, the industry will want to leverage its secure and transparent features in the near future.

Technology transformations also impact realisation of new revenue streams. A KYC software is a prime example of how CEP companies can complement their existing systems with no investment needed, yet generate an income through providing their customers with a desperately needed anti-counterfeiting solution.

Moreover, an industry clearly under pressure from today's e-commerce realities calls for unconventional thinking when it comes to solving prevailing challenges. Adopting advanced, automated and proven digital technologies from other industries, such as the pouch sorter technology employed in fulfilment, may be key in optimising processes that are proving increasingly problematic.

Broader use of advanced technologies supports greater value creation, as the above examples aptly demonstrate. But above all, talent will remain instrumental to these transformations, because although incredibly valuable, such digital changes can be difficult to execute. Which is why it can often be easier to partner with a technology provider to get started.



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