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The Magazine for Supply Chain Executives

MAY 2024

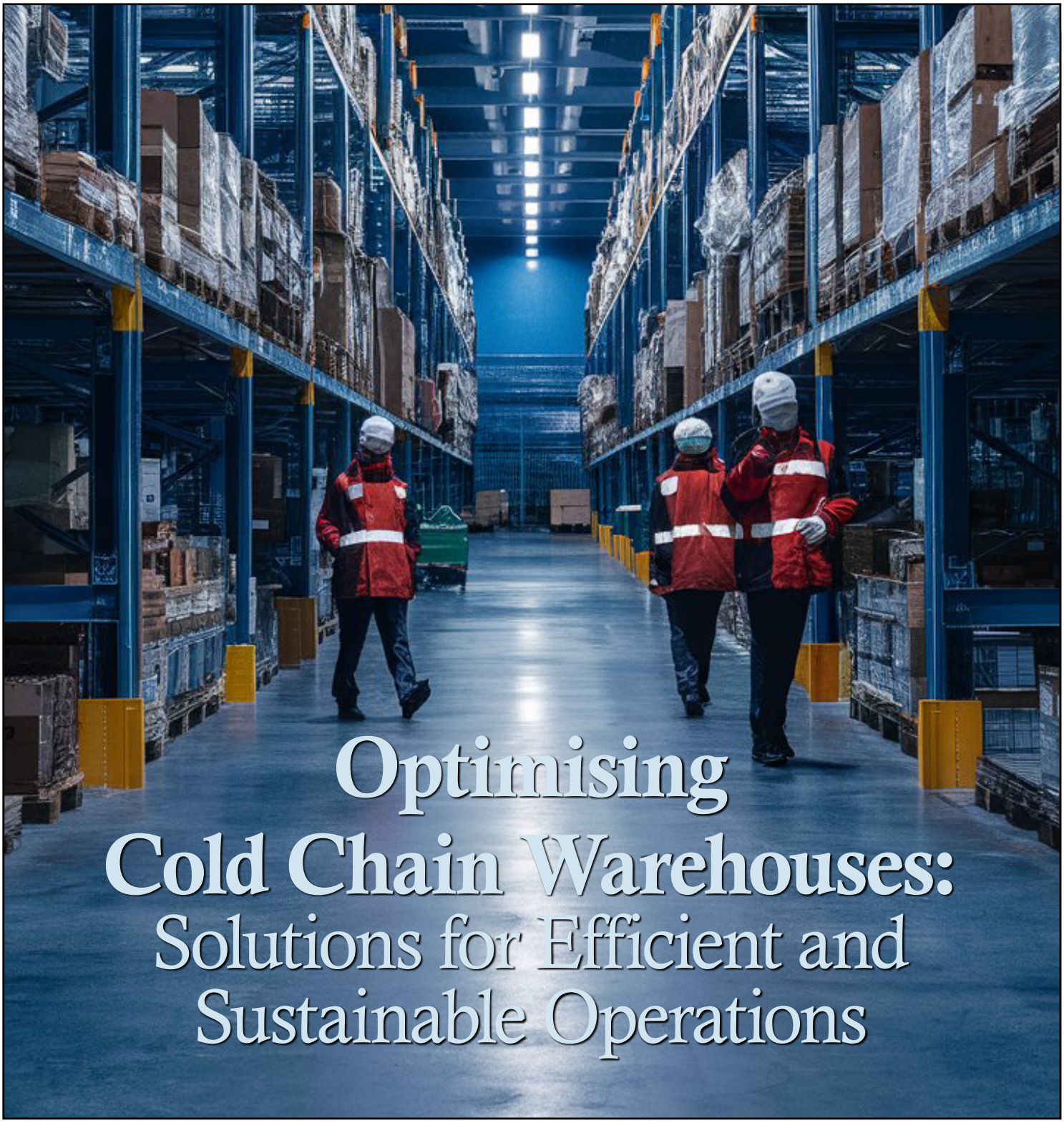
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It's All Happening this Month

Welcome to the latest edition of LogiSYM, many of you reading this issue will be on-site at one of the 4 events we have taking place in Singapore from 15th - 17th May.

This issue combined with **LogiSYM Asia Pacific**, **LogiSYM Cold Chain**, **LogiSYM/CeMAT South East Asia Exhibition** and our first **LSCMS Gala Dinner and Industry Night** are platforms where we do not just continue on the journey of learning and development through the intricate web of logistics, exploring innovations, challenges, and successes shaping the industry but also can meet and develop our professional network.

In this issue, we delve deep into the realm of cold chain management, a critical sector ensuring the safe and efficient transport of temperature-sensitive goods.

Our first article explores the pressing need for optimizing cold chain warehouses. With global demand surging and sustainability concerns at the forefront, we investigate innovative solutions that promise both efficiency and environmental stewardship. From cutting-edge technologies to streamlined processes, discover how industry leaders are reshaping cold chain operations for a greener, more sustainable future.

In a world increasingly conscious of its ecological footprint, the choice of packaging materials is paramount. Our second article delves into the quest for the greenest compliant box for your cold chain. From biodegradable alternatives to recycled materials, we uncover the options available to businesses striving to reduce their environmental impact without compromising on quality or compliance.

Finally, in the latest OpEd from our Sustainability Editor, we discuss heat islands and how we can do our part to promote environmental sustainability.

Sustainability is one of the three main areas of focus for LogiSYM and as we continue on this journey, let us not only seek efficiency and profitability but also embrace our responsibility as custodians of the planet. Together, let us forge a path towards a greener, more sustainable future for the industry and beyond.

Happy reading and I look forward to meeting many of you - in person - this week!

Raymon Krishnan, FALA, FCILT, CLP
President
The Logistics & Supply Chain Management Society

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Optimising Cold Chain Warehouses: Solutions for Efficient and Sustainable Operations

Feature Article by **Carsten Spiegelberg**, Managing Director - Middle East & Africa, **SSI SCHAEFER**

In an era where global temperatures are on the rise and the demand for cold-chain storage is skyrocketing, the importance of efficient and sustainable cold storage warehouses cannot be overstated. As industries such as food and beverage, pharmaceuticals, and healthcare rely heavily on temperature-sensitive products, the need for optimised cold chain logistics solutions has never been greater. SSI SCHAEFER, a global leader in intralogistics and automated warehouses, is sharing best practices and solutions to help managers tackle the challenges of cold storage warehouses.

Cold storage warehouse managers — particularly in the food and beverage industries, but also pharmaceutical distribution — are facing the need to efficiently and effectively store, pick, retrieve, pack, and ship perishable and sensitive goods, which require special handling, monitoring, and carefully tuned environmental conditions. Yet they face additional challenges — the cold-chain storage market is expanding, with some reports projecting a CAGR of 9% from 2023 to 2028, meaning that warehouse managers must balance surging demand for cold-stored goods with the increasing need to reduce energy costs and carbon emissions.

UNDERSTANDING THE CHALLENGES

In ensuring the safe storage and distribution of perishable goods, one of the primary challenges is optimising air circulation and product storage density. Different products require different storage temperatures, ranging from -34°C to 0°C, with some even requiring temperatures as high as 21°C. Balancing these temperature requirements while maximising storage density poses a significant logistical challenge. Additionally, semi- and fully automated solutions for cold storage space optimisation are needed to improve throughput, safety, and efficiency while reducing the time required for manual labour.



"What we are seeing for refrigerated supply chains is this pinch — a need to do ever more with ever less," notes Carsten Spiegelberg, Managing Director - Middle East & Africa, SSI Schaefer. "To meet the growing complexities of the industry, it's not enough to find a quick fix. Companies need material flow experts with industry know-how to consider all angles of a facility and seamlessly blend cold-chain logistics solutions with individual processes."

To address these challenges, Spiegelberg recommends a variety of innovative solutions to tackle them head-on: Careful planning is always the first step in optimising temperature-controlled infrastructure. To increase efficiency and cost-effectiveness of cold storage warehouses, there are several factors to consider from the beginning.

OPTIMISING AIR CIRCULATION AND PRODUCT STORAGE DENSITY

Since different products and comestibles require different storage temperatures, cold storage warehouse temperatures can range from -34°C to 0°C, with some even reaching 21°C. However, there is often a trade-off between storage density and air flow. Selecting the right storage system that enhances the cooled air circulation while increasing the storage density in the given facility footprint is critical in the planning phase.

SEMI-AUTOMATED SOLUTIONS FOR COLD STORAGE SPACE OPTIMISATION

Ideal for deep-freeze facilities for bulk storage in the manufacturing sector and delivering maximum space utilisation, channel storage setups with semi-automated drive-in racking systems are an accessible step towards automation, offering high throughput, enhanced safety, and reduced time for workers in refrigerated facilities. Capable of following either the Last in-First Out (LIFO) or the First in-Last Out (FIFO) principle, these systems use channel vehicles like SSI Orbiter® and a corresponding docking station to store and retrieve pallets.



Compared to a static, manual pallet rack system, a mobile racking storage system is an effective way to boost storage capacity in a given space — by up to 85%, while maintaining full selectivity typically required in distribution centres. This system involves racks that move along floor rails via electric motors to create an aisle only where needed, and it offers smart lighting that only activates in occupied aisles for reducing energy consumption, as well as a night parking option that optimises rack spacing for maximal cold air circulation.

FUTURE-READY AUTOMATION SYSTEMS FOR A SEAMLESS, COST-OPTIMISED COLD CHAIN

Due to the need for cold goods to maintain strict timetables and a closed cold chain, storage systems must handle incoming goods efficiently and cope with expected and unexpected upticks in demand. The best way to systematically manage the complexities of cold-chain material flows is with a fully automated storage and retrieval system (ASRS)



that seamlessly interconnects components, such as:

Automated Storage & Retrieval Machines (SRMs)

The SSI Exyz is an automated high-density storage system for single, double, or multiple-deep channel storage with extremely high space utilisation, particularly in high-bay warehouses, and it saves 25% of energy compared to conventional machines while functioning across different temperatures.

Multi- And Single Level Shuttles Accessing the Upper Reaches of a High-Bay Storage Facility

Shuttle solutions: As a future-proof, fully automated channel storage option, the SSI Lift & Run Shuttle System (SLR) provides simultaneous access to multiple racks for top-tier performance and high storage density.

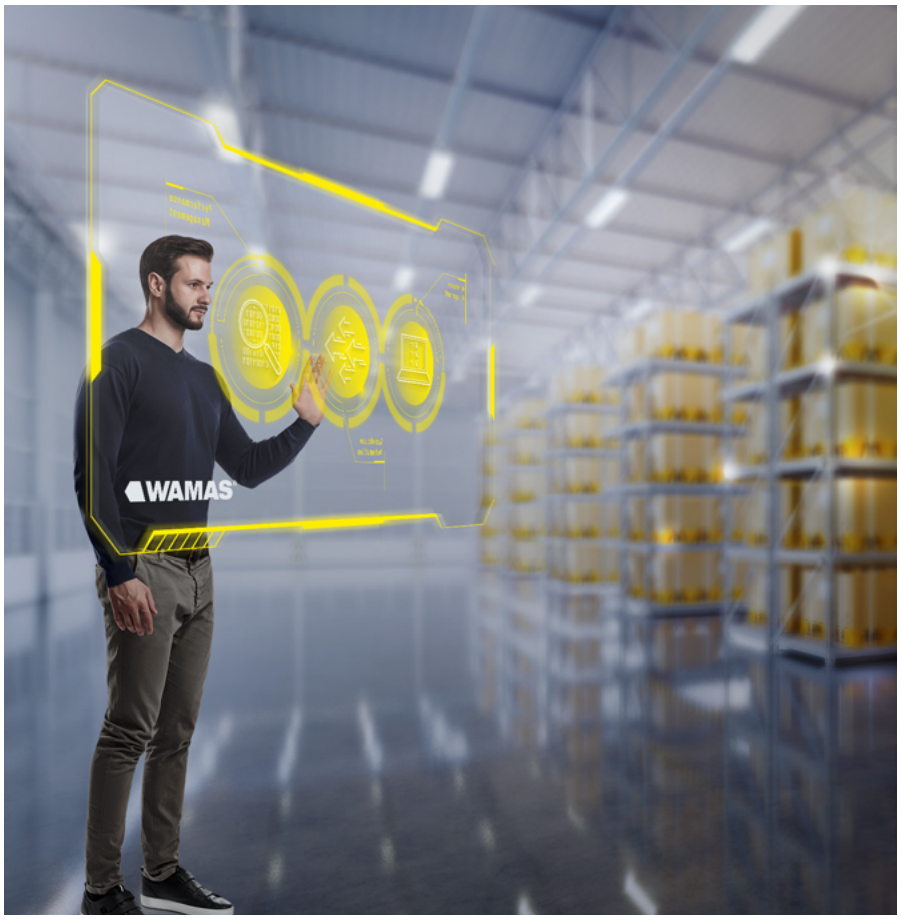
Other Storage Types

Shuttle solutions for layer trays: For high-volume picking of goods such as comestibles for shop deliveries, tray shuttles and conveying systems enable fully automated robotic picking or support efficient semi-automatic goods-to-person picking.

Storage solutions for container, bin, and carton loads: For loads of varying dimensions, scalable solutions using SSI Miniload, Flexi Shuttle, or Cuby maximise storage density while accommodating specific load and performance requirements to support automatic or semi-automatic case and piece storage and picking.

Platforms for Central Control of Refrigerated Facilities

Although there are various warehouse automation technologies that track material flows, issues such as coordinating multiple systems often arise, and there is a clear need for centralised monitoring and control - particularly with the complexities of refrigerated facilities. To tie all aspects of a cold storage warehouse together, end-to-end software such as the SSI Warehouse Management System WAMAS® or SAP EWM (Extended Warehouse Management) offer clear visualisations and comprehensive tools to manage processes, resources, and stock levels.



"Cold chain logistics represent a delicate dance between precision and adaptability. Effective management of inventory, adherence to regulatory standards, and the seamless integration of technology are critical. Yet, it's the human element—adequately trained staff, committed to upholding rigorous safety protocols—that truly ensures the integrity of our supply chains. As we navigate the intricate web of challenges, from rising costs to evolving regulations, we must embrace a holistic approach, leveraging innovation and strategic planning to not just meet, but exceed, the expectations of both regulators and consumers alike."

– Carsten Spiegelberg



Carsten Spiegelberg
Managing Director -
Middle East & Africa
SSI SCHAEFER

Carsten Spiegelberg, Managing Director Middle East and Africa, brings over 30 years of logistics expertise. A key figure in establishing SSI SCHAEFER's automation business across Asia Pacific, Middle East Asia, and Australia/New Zealand, Carsten has driven the success of automation ventures. With over 20 years of international experience in logistics automation, Carsten has managed operations in ASEAN, Australia, and the Middle East. As a seasoned speaker at global conferences, his expertise covers conventional, semi-automated, and automated warehousing, order fulfilment systems, and intralogistics.

Allgon Group Grows in South East Asia

Sweden's Allgon Group has put a long-term South East Asia growth strategy in the hands of its Tele Radio and Åkerströms radio remote control brands, both of which will be exhibited at various trade shows throughout 2024, including CeMAT in Singapore this May.

Sweden's Allgon Group is targeting rapid growth in South East Asia and will showcase its Tele Radio and Åkerströms radio remote control products at the region's CeMAT event, which takes place 15-17 May at Singapore EXPO. Allgon will exhibit at Booth C37.

Organised by Deutsche Messe, CeMAT South East Asia will attract a demographic of buying decision makers representing the intralogistics; robotics and automation; warehousing; supply chain management; and material handling industries. It is a unique opportunity to experience first-hand, the range of solutions and technologies setting the standards and future direction of logistics and warehousing globally.

The CeMAT exhibition will be a one-stop-shop of the leading technology and service providers, zoning in on innovation and best practices in a wide variety of settings and sectors—from e-commerce to manufacturing, and food logistics to resources.

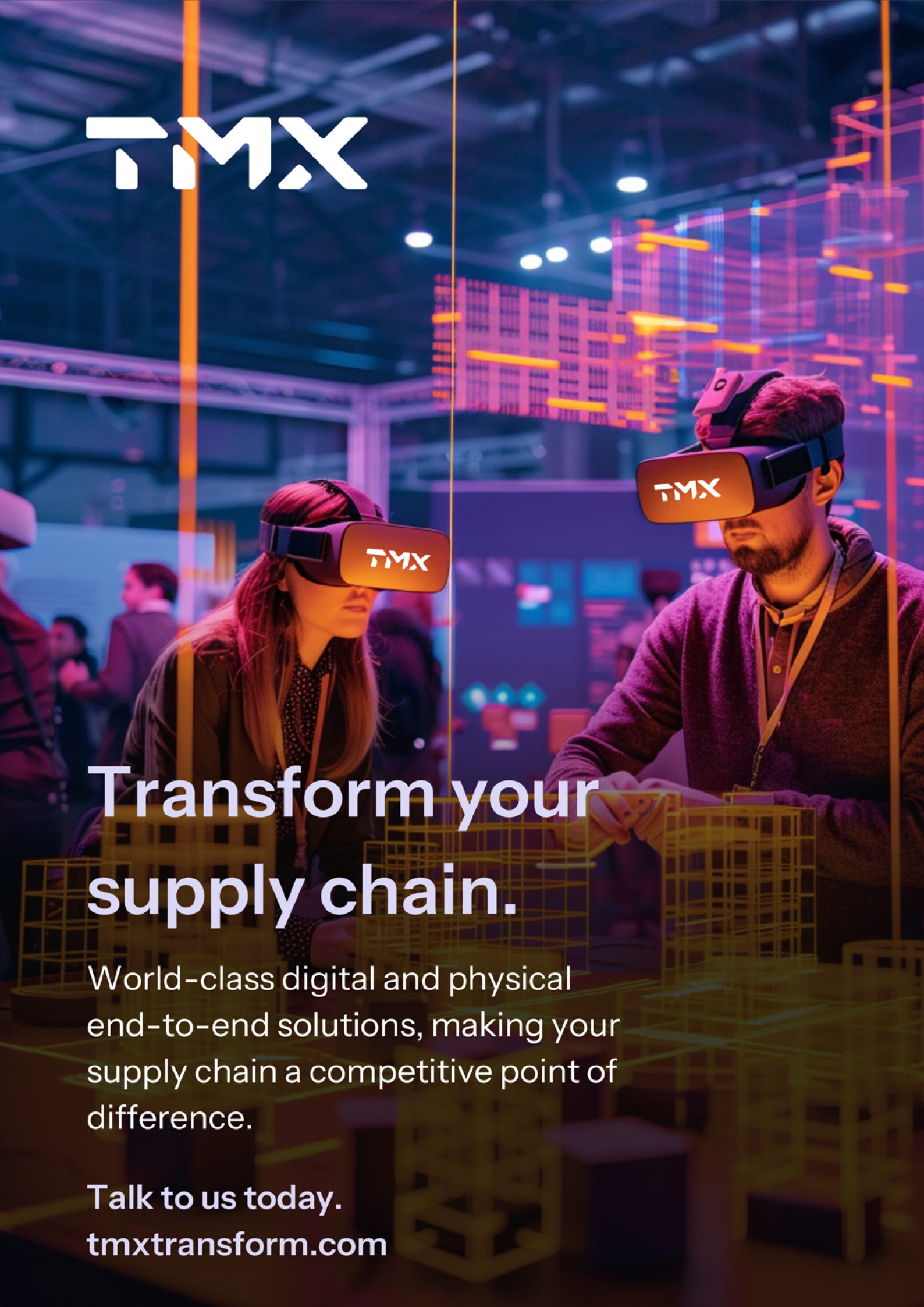
As well as cutting-edge product demonstrations in booth C37 visitors will also be able to access an enormous knowledge base of wireless remote controls, which will offer them insights, inspiration, and practical take-away solutions to challenges facing decision makers and front-line professionals in the logistics and warehousing industry. It is the perfect exhibition for Allgon to raise the profile of its remote-control brands.



SOUTHEAST ASIA, UNTAPPED OPPORTUNITIES

Tele Radio is already covering parts of Asia with subsidiaries in China, India and Japan and now Allgon has marked the geographical South Eastern region of Asia as a potential area of expansion; CeMAT will serve as an immediate focal point and represents an opportunity to engage key stakeholders and future partners.

Allgon will leverage the wide range of remote controls from both Tele Radio and Åkerströms. The company believes its share of the Southeast Asian remote control market has tremendous growth potential. The main sectors for industrial remote controls are lifting and hoisting, mobile and hydraulics, machinery,


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agriculture, mining, demolition, recycling and many more. At CeMAT, besides transport and logistics, there is special focus for the maritime sector in which industrial remote controls provide all kinds of wireless solutions.

Mark van der Elst, chief market officer at Allgon AB, said: "*South East Asia is a highly interesting market for Allgon. We believe there is a lot of potential for our products, and by extension our subsidiary brands, to bring a lot of value to companies with remote control needs. CeMAT is a great opportunity for us to connect with potential partners who deeply understand the market and can help us enter the region effectively.*"

Van der Elst, who originally joined Tele Radio Group as market strategy officer in 2019, pointed to the area as a component of a wider growth strategy that includes the Middle East and Eastern Europe. Tele Radio and Åkerströms are both headquartered in Sweden and are part of the country's Allgon Group, having been acquired in 2018 and 2015 respectively. This will be the first time that the business will have such a presence at CeMAT South East Asia.

FULL RANGE OF TRANSMITTERS WITH A FOCUS ON CUSTOMISATION

The full range of both Tele Radio and Åkerströms will be on display during the exhibition. Booth C37 will have a special focus on the large waist belt transmitters which can be fully customised in terms of hardware and software to meet special customer requirements.

The Tele Radio TEQ line of waist belt transmitters is available in two versions - Basic or Custom - and is targeted at the mobile vehicle sector, including recovery; concrete pumping trucks; drilling, excavators, and earthmovers; lawn mowers; and truck cranes. The Basic line is equipped with standard components and specifications to serve a large portion of the market, at an attractive price; for more exceptional applications. In addition to the Basic Line, Tele Radio is also strong on customisation. The Custom Line can be extensively customised, in terms of hardware and software to fully meet special customer requirements.

The latest Panther T29-12 handheld transmitter, which was launched last year, will also be present. The 12-step PLd-certified push-button hand transmitter can control a total of 24 different functions at a high security level.

Tele Radio's radio remote controls are used in many industries, especially where ergonomics, reliability, and safety are critical factors. The products contribute to a more comfortable and safer workplace. Many products are independently certified with a SIL3, PLd and PLe safety level on the stop function. Robust and reliable systems boast advanced software for easy installation, a high degree of flexibility and adjustable operating parameters.

Tele Radio Group is a multinational company that develops, markets and supplies universal, wireless remote controls and tailor-made wireless solutions for industrial use. The original company, Tele Radio AB, was founded in Lysekil, Sweden in 1955, and has since developed to an international group with headquarters in Gothenburg, and over twenty subsidiaries in Europe, Asia and the US. By building a global network, Tele Radio offers their customers strong service and support worldwide.



ÅKERSTRÖMS, A LEGACY OF RELIABILITY SINCE 1918

Åkerströms, founded in 1918, stands as a testament to enduring quality and innovation in the field of industrial radio control solutions. Its long experience in the industry has cemented the company's reputation as a purveyor of safety, durability, adaptability, and reliability.

This storied company has always prioritised understanding and meeting the specific needs of its customers. Through dedicated collaboration, Åkerströms delves into the unique challenges and requirements of its clients, enabling the creation of tailored, sustainable solutions. This approach ensures that every product not only fulfils its intended purpose but also embodies the company's commitment to long-term reliability and functionality.

Åkerströms is renowned, especially in the market for industrial cranes and industrial gates, but also in the market for various mobile applications, where the heritage of quality and reliability is well known. The company's ethos of excellence is reflected in all aspects of the business, from product development to customer service, making Åkerströms synonymous with trust and reliability in the industry.

An integral part of Åkerströms' offer is its comprehensive aftermarket service. This commitment underscores the company's dedication to ensuring that its products remain functional and reliable over many years. By providing exceptional support and maintenance services, Åkerströms reinforces the longevity and performance of its solutions, ensuring they continue to meet the high standards the company is celebrated for.

Åkerströms is a legacy of reliability that has stood the test of time. With its rich history dating back to 1918, Åkerströms is proud of its journey from a pioneering start-up to a globally recognised player in industrial radio control solutions.
The company's dedication to innovation, quality, and customer satisfaction ensures it remains at the forefront of the industry, delivering solutions that industries rely on for efficiency, safety, and unmatched reliability.



RISING IN THE EAST

Allgon Group will double down on the South East Asian market but will simultaneously take its Tele Radio and Åkerströms radio remote control products to Bauma China, which takes place on 26-29 November in Shanghai.

Van der Elst said: "*We look forward to spending the year showcasing Allgon's global network as an attractive opportunity for prospective new partners alongside the full range of products from both of our subsidiary brands. At every opportunity, the Allgon team will guide each visitor through the product ranges and find the best solution for their specific problem.*"

SEEKING NEW PARTNERS

The Allgon Export team is leading the initiative in both exhibitions, actively searching for prospective partners on the ground to be the liaison between them and the whole of Allgon Group.

Pär Wahlstrand, general manager at Allgon Export, said: "*Tele Radio sees South East Asia as a highly interesting market. With Allgon's support and the potential of our products, we are confident to deliver significant value to companies needing remote control solutions.*"

ALLGON®

Are you interested in becoming a partner? Get in touch with the Allgon team at export@allgon.com or call at +46 31 207 600. Allgon will help you find the best fit for you to bring Tele Radio and Åkerströms to the region.

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Date: 16 May, Thursday
Time: 10.30 - 11.15
Panel Topic:
Deciphering Supply Chain Digital Provider Options

Joost Rompen
Country Director, Slimstock APAC

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experts in inventory optimisation

Shaping a Resilient Future for Cold Chain Logistics Through Technology

Feature Article by **Mike Bhaskaran**, Group Chief Operating Officer, Digital Technology, **DP World**

Speed, accuracy, and efficiency are paramount in today's supply chains – and refrigerated cargo, otherwise known as cold chain logistics, is no exception.

Reliable and efficient logistics networks are crucial for all industries, but perhaps even more so for the likes of the pharmaceutical, food, and retail sectors. The management of perishable goods is entirely dependent on controlled environments as this precious cargo travels around the world, impacting and often guaranteeing the livelihoods of communities everywhere. With the advent of technology-enhanced cold chain logistics, we are entering an era where this will become easier than ever.

In my current role, I have observed how technological innovations have redefined global supply chains. In this time of growing climate uncertainty and geopolitical unrest, leveraging such innovations to guarantee the safety, quality, and accessibility of these products could unlock opportunities not only for industry leaders but for citizens across the globe.

THE IMPERATIVE FOR ADVANCED COLD CHAIN SOLUTIONS

From extending the longevity of precious food resources to maintaining precise conditions for vaccines, the integrity of the cold chain relies on robust cold chain logistics. A sophisticated cold chain network involves synchronised refrigerated activities, equipment that can flex and scale to capacity demands, and coordinated logistics operations that can adapt to established and emerging markets. Any lapse in this chain can lead to significant economic losses or, in the worst-case scenario, health risks.

LEVERAGING CUTTING-EDGE TECHNOLOGY IN COLD CHAIN LOGISTICS

The Internet of Things (IoT) and Radio Frequency Identification Technologies (RFID) are transforming how we monitor conditions within shipping containers and storage areas in real-time. Armed with this critical data, we can maintain optimal temperature and humidity levels for perishables throughout their journey, regardless of their location in the world. We can even make real-time adjustments, reducing the likelihood of waste - particularly crucial during times of crisis.





In terms of the long-term environmental impact of cold chain logistics, technology is also game-changing, especially as we advocate for the Move to -15°C. This industry-wide sustainability initiative, originally launched by DP World at COP28, aims to raise the standard temperatures used in cold chain logistics by three degrees to save 17.7 million tonnes of carbon dioxide from entering our atmosphere every year. That's equivalent to taking 3.8 million cars off the road.

THE POWER OF DATA

One of the key advantages of having data is its ability to provide insights and predictive capabilities. Instead of being bogged down by paperwork and supply chain blind spots from the past, we can now leverage cargo movement data to anticipate and prevent potential disruptions. By integrating more technology into our infrastructure and collecting more data, we can significantly enhance operational efficiency and lower costs for our customers, ultimately benefiting the end consumer.

MAKING NEXT-GEN LOGISTICS TODAY'S REALITY

The futuristic visions seen in sci-fi films are now within our reach due to the latest advancements in technological capabilities. Automated systems and robotics are becoming essential components of our warehouses, enabling us to create and maintain optimal environments for perishable goods. These technologies also enhance the accuracy and speed of our operations. In the field of humanitarian logistics, where there is an urgent need for food and medical supplies, the agility offered by automation is unparalleled.

Moreover, the sophistication of the technology available to us is transforming compliance standards across many perishable sectors. For instance, blockchain technology establishes a centralised and secure method for recording and executing transactions throughout the supply chain. This accountability resource is incredibly valuable, particularly for the pharmaceutical industry as they seek to build trust with partners in new markets.

ENSURING GROWTH THROUGH ACCESSIBILITY

When discussing new markets, the significant advantage of technological development that is often overlooked is accessibility. The digitalisation of logistics services and how people interact with them is altering how businesses tap into new markets, and it's even changing how new businesses enter global trade.





Platforms currently available are revolutionising the logistics landscape by using technology to enhance the accessibility of global trade, both for standard goods and cold chain products. They also showcase the scalability of technology. While achieving universal digitalisation will necessitate investment, there are smaller steps we can take to extend its benefits to all markets.

THE EVOLUTION IS JUST BEGINNING

Technology has rapidly transformed the cold chain logistics space in just a few short years. Looking ahead, it's evident that the progress we've achieved so far is only the beginning. The integration of AI, machine learning, and potentially drone delivery technologies promises to further revolutionise cold chain logistics, improving delivery speeds, reducing human error, and enhancing overall supply chain management for the benefit of millions. The incorporation of these technology-enhanced solutions into logistics extends beyond simply adopting new tools; it involves creating a resilient, efficient, and transparent ecosystem that significantly enhances the reliability of transporting perishable goods.

By embracing these technological advancements, we not only meet the current demands of global commerce but also pave the way for a more sustainable and efficient future in cold chain logistics and beyond.



Mike Bhaskaran
Group Chief Operating Officer
Digital Technology
DP World

Mike Bhaskaran is the Group Chief Operating Officer, Digital Technology at DP World. He steers digital transformation across the company's global operations guided by his extensive experience in blockchain, e-commerce technology, and digital innovation within complex supply chains. Mike effectively enhances business processes and systems implementation. He has also spearheaded technology infrastructure and software development at Amazon, The Gap Inc, Starbucks, and Beyond the Rack Inc. Mike holds a Master's in Industrial Technology & Engineering from Utah State University and an MBA from Purdue University's Krannert School of Management.



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Latest Key Initiatives



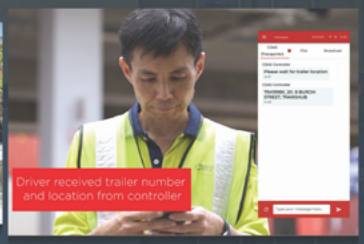
Container Tracking System (CTR)

- 24/7 automated fleet management
- Fleet performance analysis
- Seamless communications on the supply chain
- Smart asset tracking
- Address asset redundancies and shortages
- Reduce wastage via chassis pooling platform
- Geo-spatial Multi-storied tracking
- Improve services and productivity
- Reduce carbon emissions
- Optimize resource deployment, and costs savings

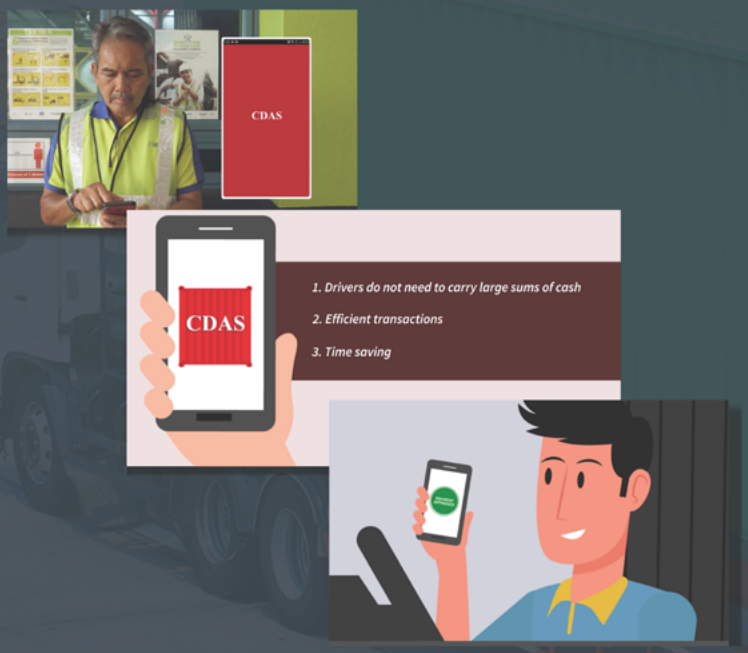
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Cashless ePayment Platform

- Industry's first cashless payment solution
- Boosted productivity by an estimate of over 80 percent
- View and approve charges instantly
- Electronic Payment Approval
- Benefited over 80% of the container haulage industry
- Greater transparency and payment assurance
- Better efficiency and accuracy in financial and administrative procedures









Who We Are

Formed in 1991, the Container Depot and Logistics Association (Singapore) - CDAS - represent the container depot operators and container transport businesses in Singapore. CDAS focuses on uplifting the industry through business support and innovation and has introduced several industry-wide initiatives that have been used by the vast majority of the industry players.

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New Research Finds 83% of Supply Chains Can't Respond to Disruptions Within 24 Hours

Global survey of 1,800 supply chain leaders shows average response time is five days, hindering progress on resiliency and risk mitigation

SINGAPORE, 17 April 2024 – Despite being one of the biggest lessons from the pandemic era, a new IDC study* sponsored by Kinaxis® Inc. (TSX:KXS) reveals slow progress in making supply chains more flexible and resilient while also highlighting optimism towards supply chain orchestration tools as a key enabler for the future.

According to research, less than one-fifth (17%) of global supply chain leaders say their companies can respond to disruptions within 24 hours. Highlighting their widespread frustration, a staggering two-thirds (67%) of respondents admit they are not "very satisfied" with their response time.

The comprehensive survey of 1,800 supply chain decision-makers from around the world exposes the harsh reality that most are struggling to keep their operations agile and adaptable amid an onslaught of disruptions from geopolitical conflicts, natural disasters, and other volatility. While the average crisis response time is a troubling five days, the survey shows performance varies across industries. In the Oil and Gas sector, for example, 28% of respondents say they can mount a response within a day, compared to 15% in life sciences and 14% in aerospace.

"It's increasingly evident that supply chains have immense influence over the success or failure of businesses. The statistic revealing that 83% of supply chains are unable to adapt to disruptions within a 24-hour timeframe highlights the urgent need for increasing resilience and managing risk management across all industries especially in Asia," said Phillip Teschemacher, Asia Pacific (APAC) President at Kinaxis. In this landscape, there lies a significant opportunity for improvement. Companies can work on improving visibility, increasing collaboration and advancing towards orchestration to enable Chief Supply Chain Officers to automate decision-making across the entire enterprise."

Although respondents in all regions are overwhelmingly dissatisfied with their business' ability to withstand and respond to supply chain shocks, they remain optimistic about technology's potential to turn the tide, with 97% saying that better orchestration tools would have a modest (44%) or significant (53%) impact on supply chain performance.





Phillip Teschemacher, Asia Pacific (APAC) President for Kinaxis



Other key findings include:

- Industrial respondents rate their resilience highest (47%), while retail (29%) and aerospace (27%) rate themselves lowest.
- 42% of consumer product respondents rated their supply chain orchestration as mature, the highest among all verticals.
- 25% of respondents plan to move to new technologies in the next year to improve resilience.
- 33% want supply chain orchestration platforms that offer AI/genAI capabilities.
- 63% view their supply chain as some form of competitive advantage over the next 12 months, but it drops to 48% across the next 1-3 years.
- 37% said the biggest roadblock to adopting a supply chain orchestration application was not finding the right vendor solution.

Methodology: Research was conducted in December 2023 by IDC and commissioned by Kinaxis, surveying 1,800 Supply Chain Leaders across North America (USA and Canada), Europe (UK, France, and Germany), and APAC (Japan, Taiwan, India, and Australia).

**IDC InfoBrief, sponsored by Kinaxis, Supply Chain Orchestration: Leveraging End-to-End Supply Chain Orchestration to Deliver Next Generation Supply Chain Management, Intelligence, and Responsiveness (doc #CA52004924, April 2024)*

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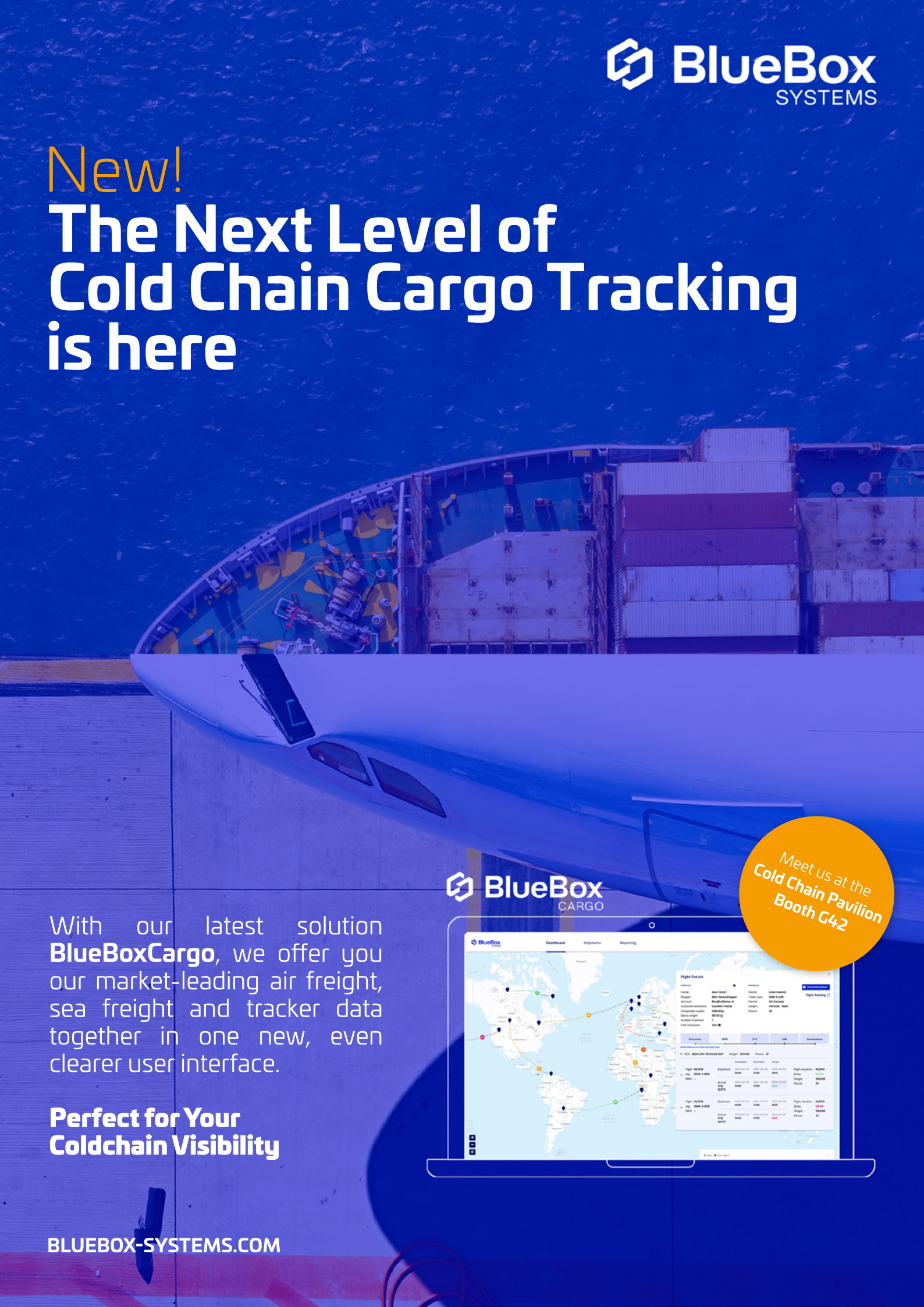
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Logicsols chooses BlueBox Systems due to excellent air freight data

Bonn, 24th April 2024 – BlueBox Systems, one of the leading developers of intelligent air freight tracking solutions, has gained a new customer for its state-of-the-art air freight tracking programming interface: Logicsols. The platform of the digital logistics solution provider from New York, USA, allows its customers to manage their entire logistics operations, including features like shipment visibility, data analysis, and document legalisation. Logicsols can now integrate BlueBox Systems' tracking data into its own platform and offers its customers even more accurate data.

The enhanced data availability has convinced Saif Uddin, Digital Delivery Leader at Logicsols: "BlueBox Systems offers a wider range of data points for air freight shipments compared to other providers." This includes real-time location updates, weather impact information, and potential delays due to customs clearance, for example. BlueBox Systems boasts a comprehensive global network for air freight tracking and delivers tracking data of more than 130 airlines, 1600 airports, and about 40 million status updates per day, which is another reason for Logicsols to choose the Bonn-based company.

A third decisive factor is the excellent data quality. "This is especially important for us, so we can offer our customers a clear and dependable picture of their air freight movements", says Saif Uddin. "We've also trusted BlueBox Systems because of its proven track record and its strong reputation within the air freight industry." Another advantage: the seamless API integration.

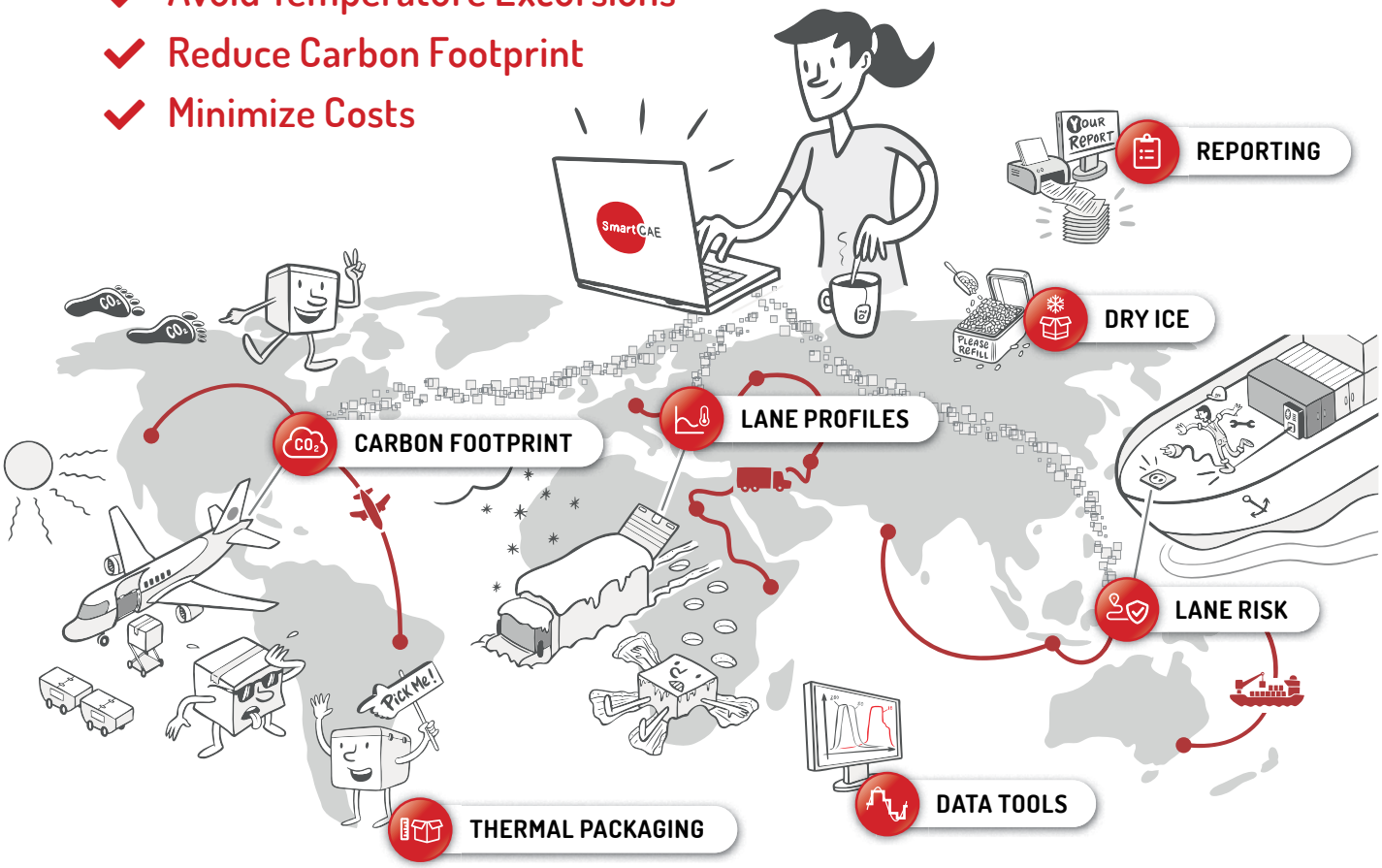
Due to the API solution, the applications of BlueBox Systems and Logicsols can communicate independently and exchange data in real-time. This enables customers to gain important information



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about ETA changes or delays. Carriers gain access to real-time shipment data to optimise routes, reduce costs, and allocate resources efficiently. Manufacturers can get up-to-date shipment tracking information to plan production and proactively manage inventory. All parties along the supply chain can retrieve the most up-to-date and efficiently accurate information. At the same time, the API solution ensures end-to-end data security by providing controlled data access allowing only authorised parties to access and use shared information, safeguarding sensitive cargo details and maintaining the supply chain integrity.

"Our robust API allows for swift and straightforward integration, empowering businesses with real-time air and ocean freight visibility," says Martin Schulze, CEO of BlueBox Systems. "We provide a user-friendly and efficient API integration that ensures a smooth data flow and minimises technical challenges for our customers."

Logicsols is one of many companies like Siemens Digital Solutions, 4Flow, Thinkprime, Klog, or Otonomi, who are already successfully using the API solution of BlueBox Systems and offer their customers unrivalled data quality.



BlueBox SYSTEMS

About BlueBox Systems

BlueBox Systems, founded in 2020 in Bonn by logistics software expert BusinessCode, offers high-end solutions for cargo tracking and logistics optimisation. Their solutions BlueBoxAir and BlueBoxOcean are designed to revolutionise the way cargo is tracked and managed, ensuring the smooth flow of goods across air and sea. BlueBox Systems' cutting-edge tracking technology empowers businesses to harness the power of real-time data, enabling them to save valuable time and money in their logistics operations through actionable insights. What was once a black box in cargo tracking now becomes transparent with BlueBox Systems. By knowing exactly where their shipments are at all times, senders can proactively manage logistics operations, anticipate potential delays, and mitigate risks, ultimately avoiding costly disruptions and damages. With BlueBox Systems, the future of cargo tracking is here. The aim is to boost efficiency, transparency, and success in the global logistics landscape.

About Logicsols

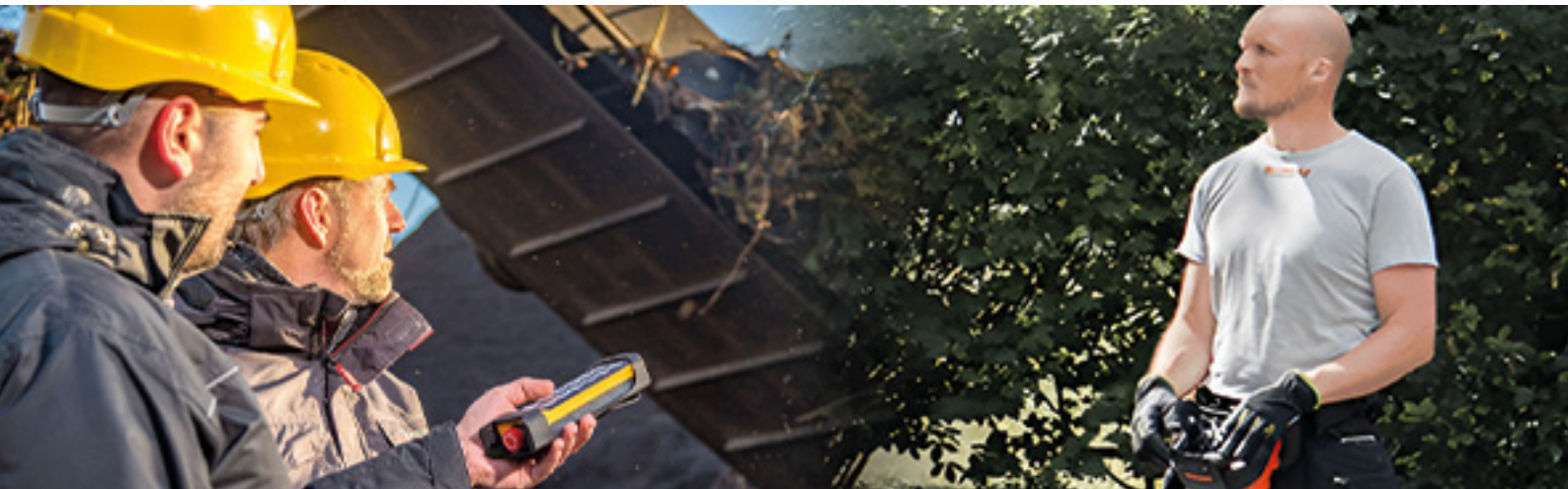
Logicsols emerged from the collaboration of seasoned supply chain experts boasting over 70 years of collective global logistics expertise across various sectors. Their digital platform facilitates the seamless management of logistics operations, empowering both customers and suppliers from quote requests to the ultimate destination. With real-time shipment tracking across all transport modes and insightful data analysis, Logicsols empowers informed decision-making, driving cost reduction by streamlining supply chain processes for enhanced efficiency and digitalisation.

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Choosing the Greenest Compliant Box for Your Cold Chain

Feature Article by **Stefan Braun** Managing Director **SmartCAE**

The pursuit of a compliant, cost-effective, and more environmentally friendly pharmaceutical cold chain has led various stakeholders to address these issues in various ways., We tackle this problem with a single tool using Digital Twins, which considers each contributing factor and then singles out the best solution. In the step-by-step process the optimal packaging is identified, transportation routes are optimised, and the total costs and the carbon footprint are quantified. This process leads the way to a greener compliant supply chain.

Carbon footprint in pharmaceutical cold chain
The pharmaceutical industry releases approximately 52 million tonnes of CO_2 into the atmosphere each year, contributing to roughly 2% of global annual emissions. We should, and can, reduce these enormous emissions by making our shipping practices and processes greener. The key question is: "To what extent can we decrease these emissions without disrupting the transportation and delivery of drugs?"

Our path towards a greener compliant supply chain (**Figure-1**) is:

- Don't underperform and don't overengineer:
  - Use the right box for your requirements
  - Use the right lane & service for requirements
  - Match box and lane service
- Quantify and reduce total cost and carbon footprint

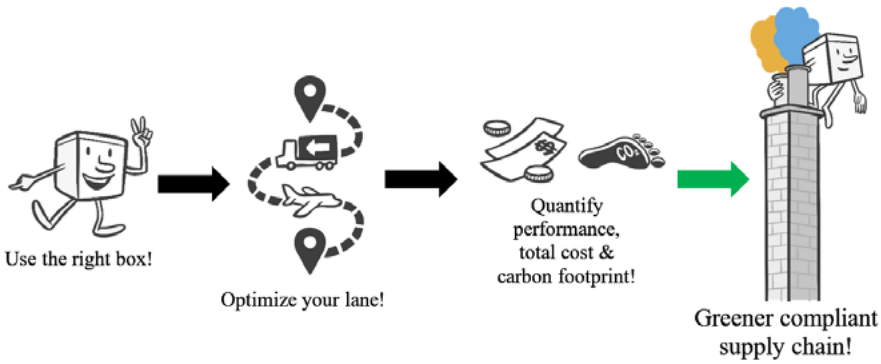


Figure-1 Towards a greener compliant supply chain

CASE STUDY

To illustrate our approach, let's apply it on an example. To work with a realistic lane, we had executed a test shipment, on which we installed an ELPRO realtime data logger to map out the individual waypoints of the lane. This test shipment gave us the information about the type of transport, stopover locations, and timing. This is our scenario:

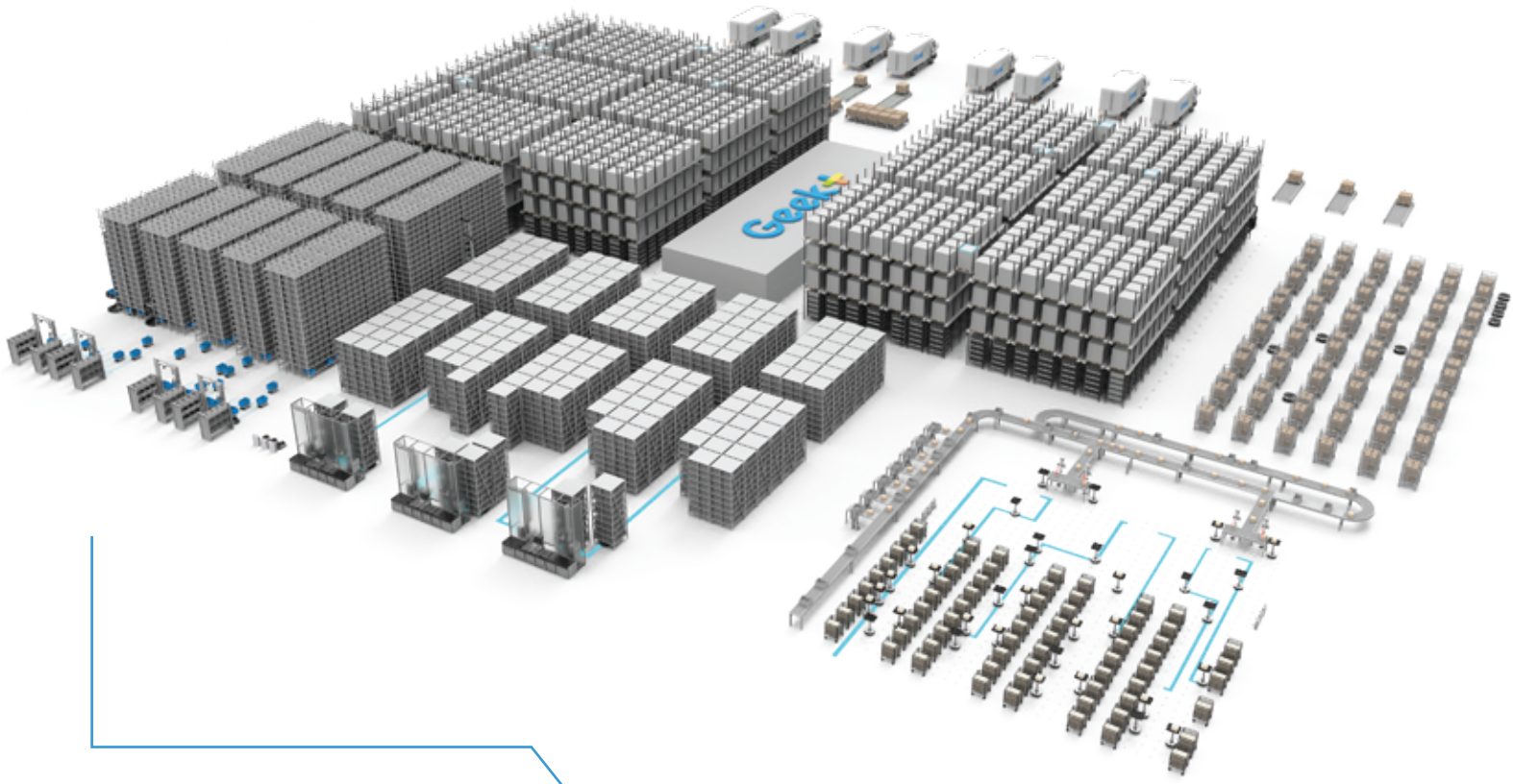
- Product: 2 to 8°C pharmaceutical goods.
- Shipment Lane: from Singapore to Buchs, Switzerland, as recorded early 2024 with ELPRO realtime logger, illustrated in **Figure-2**
- Shipper (container) options:
  - EPS all season, PU all season, PU summer, VIP all season and VIP winter;
  - all the shippers carry identical payload for comparison and are preconditioned identically.

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Figure-2 Shipping Lane

OVERVIEW OF THE BOX PERFORMANCE

To assess how well each shipper option is suited to maintain the payload temperature requirement on the lane, we employ our Digital Cold Chain approach, and build a digital twin for each shipper. In our digital approach we can then go back in time, and send each shipper along the lane, on each day, for the last 5 years, using historical temperature data on the lane. The result is summarised in Figure-3 for each shipper and each month: a green circle indicates no temperature excursions, a red circle indicates potential hot excursions, a blue circle, potential cold excursions.

The results of the lane risk analysis on five different shippers are provided in **Figure-3**.

- EPS all-season: only applicable in November to February;
- PU all-season: applicable in all months except July;
- PU summer: not applicable
- VIP in all-season & winter configuration: applicable in all months.

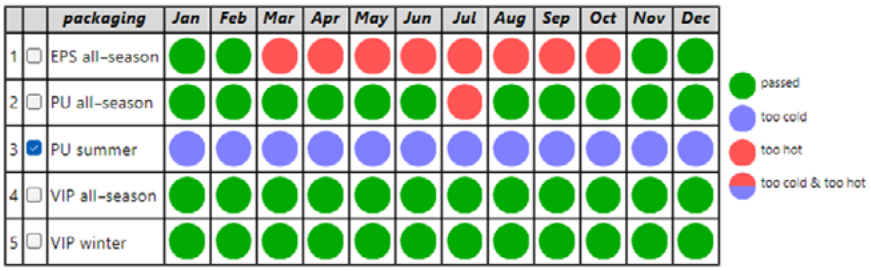


Figure-3 Lane risk summary by month for five shipper options

From the results, we can now combine viable compliant shipper options that minimise the excursion risk:

a. 1 box: Use VIP shipper for all months;

b. 2 boxes: VIP during July, and PU all-season during other months;

c. 3 boxes: VIP during July, EPS all-season during November to February, and PU all-season during other months.

TOTAL COST OF OWNERSHIP ANALYSIS

The next question to address is, which solution is the most cost-effective, with the minimum Total Cost of Ownership. The factors contributing to TCO are illustrated in **Figure-4**. Cost of Packaging and Cost of Shipment are known in advance, whereas Cost of Compliance and Cost of Product Loss are only available when the rate of excursions and product losses are quantified. This is a significant advantage of the digital approach, as it allows to quantify the rates based on historical data, prior to any costly live shipment.

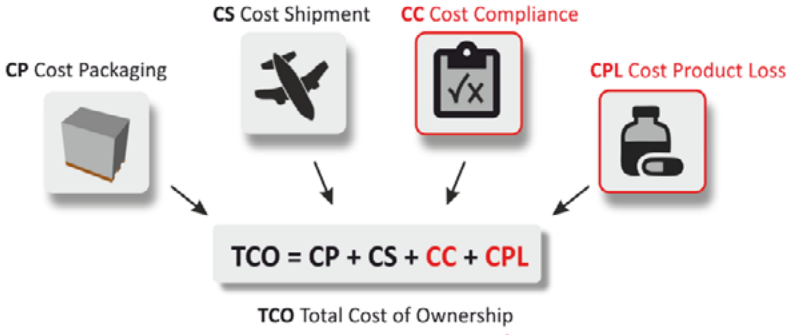


Figure-4 Factors constituting the Total Cost of Ownership in Temperature Controlled Logistics.

Assuming a cost of 6500€ per excursion for the CAPA analysis, and 10'000€ per product loss, based on product value, we determine the TCO for each shipper, as illustrated in **Figure-5**. In this case, the most cost-effective solution is the combination of the two shippers EPS all-season and PU all-season. From a cost perspective, it is in this case the optimum solution, to accept the relatively low failure risk for excursions in the month of July (1.3% for the month of July, corresponding to 0.11% over the year)). There are marginal savings of about 6660€ compared to using only the PU all-season shipper year round, with the same risk. So if the costs for maintaining two shipper options exceeds 6660€ per year, the optimum solution from a cost perspective would be to use only the PU all-season. The VIP shippers offer premium protection during all months, but the extra costs exceed the other solution by about 150'000€ per year.

In Figure-6 we provide a month-by-month cost breakdown of the best combination. Excursions occur solely in July, resulting in associated cost for excursions and product loss.

CARBON FOOTPRINT CALCULATION

Having determined the most cost-effective solution, we next assess the carbon footprint of the different options. The following factors are considered to calculate the carbon footprint:

- transport weight,
- transport mode,
- shipper CO_2e based on full lifecycle analysis (mainly production and decommissioning),
- mode-specific transport distance,
- average CO_2e factor per ton-km by transport mode.
- the CO_2e from cooling at warehouse or storage calculated

	Packaging		Transport		Excursion		Product Loss		Costs for 1000 Shipments/Year		
	Name	Costs	Weight	5.€/kg	Excursions	6500€/Excursion	Failures	10 000.€/Loss	Per Shipment	Total/Year	Diff to Best
☑	EPS all-season	€ 40 000.00	14.4 kg	€ 72 165.00	37.87%	€ 2 461 603.95	37.87%	€ 3 787 083.00	€ 6 360.85	€ 6 360 851.95	€ 6 217 468.00
☑	PU all-season	€ 60 000.00	14.4 kg	€ 72 165.00	0.11%	€ 7 043.40	0.11%	€ 10 836.00	€ 150.04	€ 150 044.40	€ 6 660.00
☐	PU summer	€ 80 000.00	19.6 kg	€ 97 830.00	100.00%	€ 6 500 000.00	100.00%	€ 10 000 000.00	€ 16 677.83	€ 16 677 830.00	€ 16 534 446.00
☐	VIP all-season	€ 200 000.00	17.7 kg	€ 88 425.00	0.00%	€ 0.00	0.00%	€ 0.00	€ 288.42	€ 288 425.00	€ 145 041.00
☐	VIP winter	€ 250 000.00	16.6 kg	€ 82 765.00	0.00%	€ 0.00	0.00%	€ 0.00	€ 332.76	€ 332 765.00	€ 189 381.00
	Best Combination	€ 53 340.00	14.4 kg	€ 72 165.04	0.11%	€ 7 043.40	0.11%	€ 10 836.00	€ 143.38	€ 143 384.44	Best Choice

Figure-5 Total Cost of Ownership of the five shipper options and the best combination

Monthly Details

Month	#	Packaging	Packaging/€	Transport/€	Excursions/%	Excursions/€	Failures/%	Product Loss/€	Total/€
Jan	84	EPS all-season	3 360.00	6 061.86	0.00	0.00	0.00	0.00	9 421.86
Feb	83	EPS all-season	3 320.00	5 989.70	0.00	0.00	0.00	0.00	9 309.70
Mar	84	PU all-season	5 040.00	6 061.86	0.00	0.00	0.00	0.00	11 101.86
Apr	83	PU all-season	4 980.00	5 989.70	0.00	0.00	0.00	0.00	10 969.70
May	84	PU all-season	5 040.00	6 061.86	0.00	0.00	0.00	0.00	11 101.86
Jun	83	PU all-season	4 980.00	5 989.70	0.00	0.00	0.00	0.00	10 969.70
Jul	84	PU all-season	5 040.00	6 061.86	1.29	7 043.40	1.29	10 836.00	28 981.26
Aug	83	PU all-season	4 980.00	5 989.70	0.00	0.00	0.00	0.00	10 969.70
Sep	83	PU all-season	4 980.00	5 989.70	0.00	0.00	0.00	0.00	10 969.70
Oct	83	PU all-season	4 980.00	5 989.70	0.00	0.00	0.00	0.00	10 969.70
Nov	83	EPS all-season	3 320.00	5 989.70	0.00	0.00	0.00	0.00	9 309.70
Dec	83	EPS all-season	3 320.00	5 989.70	0.00	0.00	0.00	0.00	9 309.70
Total	1000		53 340.00	72 165.04		7 043.40		10 836.00	143 384.44

Figure-6 Monthly breakdown of Total Cost of Ownership for the best shipper combination.

by country-specific electricity emission.

The shipping lane, shown in **Figure-2**, comprises two long-haul and two short-haul flight segments. These contribute to a relatively high carbon footprint for each shipper option. The CO_2 equivalent emissions are negligible for the truck segment Basel airport to Buchs. The detailed result of the CO_2e for all shippers are provided in **Figure-7**.

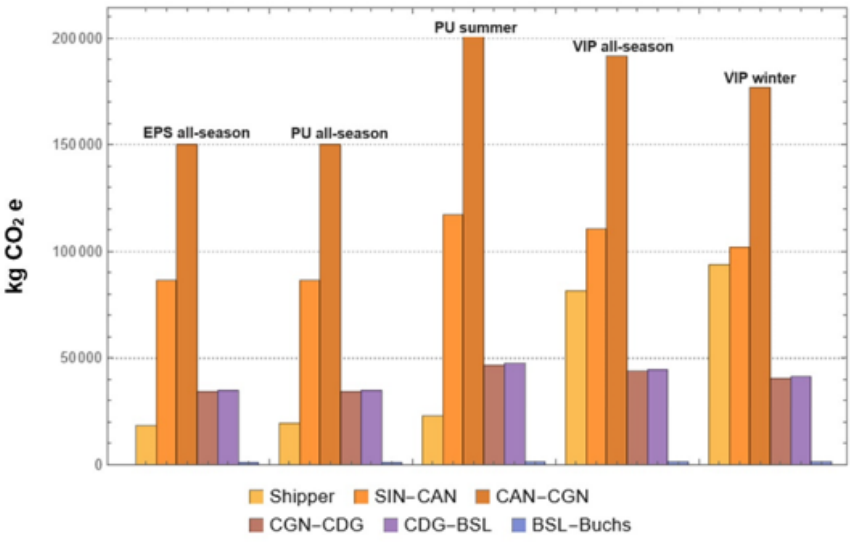


Figure-7 Segment-wise CO_2 split-up for shipping lane and the five shipper options

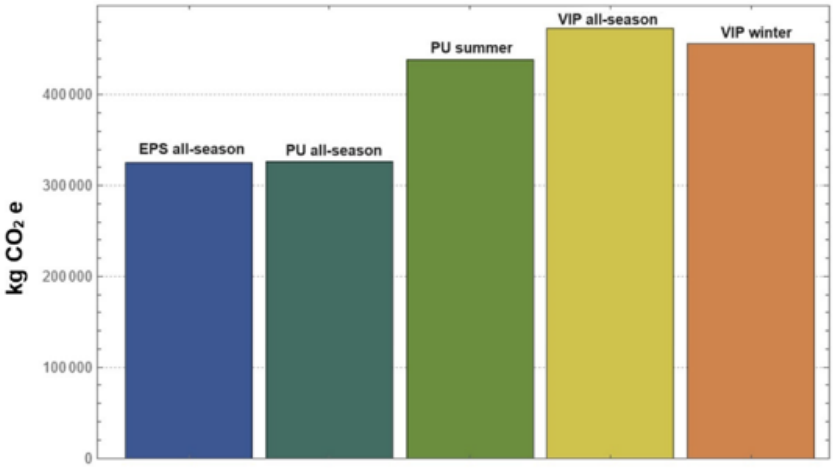


Figure-8 Total Carbon footprint comparison for shipping lane

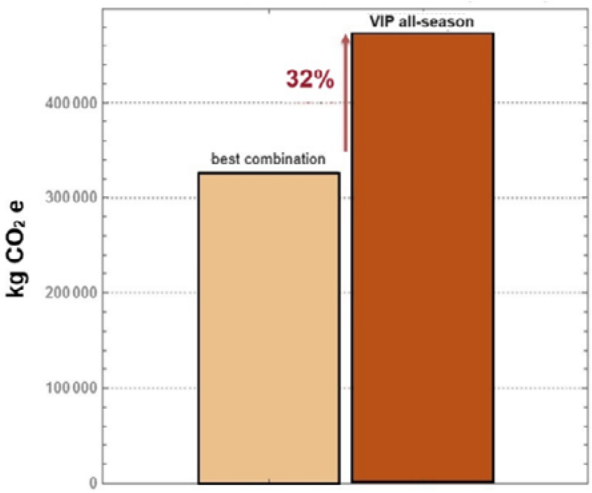


Figure-9 Comparison of carbon footprint of best combination to using only a VIP shipper

In **Figure-8** we illustrate the total CO_2 footprint for all shipper options, integrating overall contributions. The highest CO_2 footprint is observed for the VIP all-season shipper at 470,000 kg CO_2e, with VIP winter and PU summer at a similar level. The two options EPS all-season and PU all-season feature significantly lower CO_2e, at around 320,000 kg.

The carbon footprint of the best combination, determined in the TCO analysis, is about 32% lower than compared to using a VIP shipper, see **Figure-9**.

This reduction corresponds to the equivalent of 6800 trees saved, see **Figure-10**.



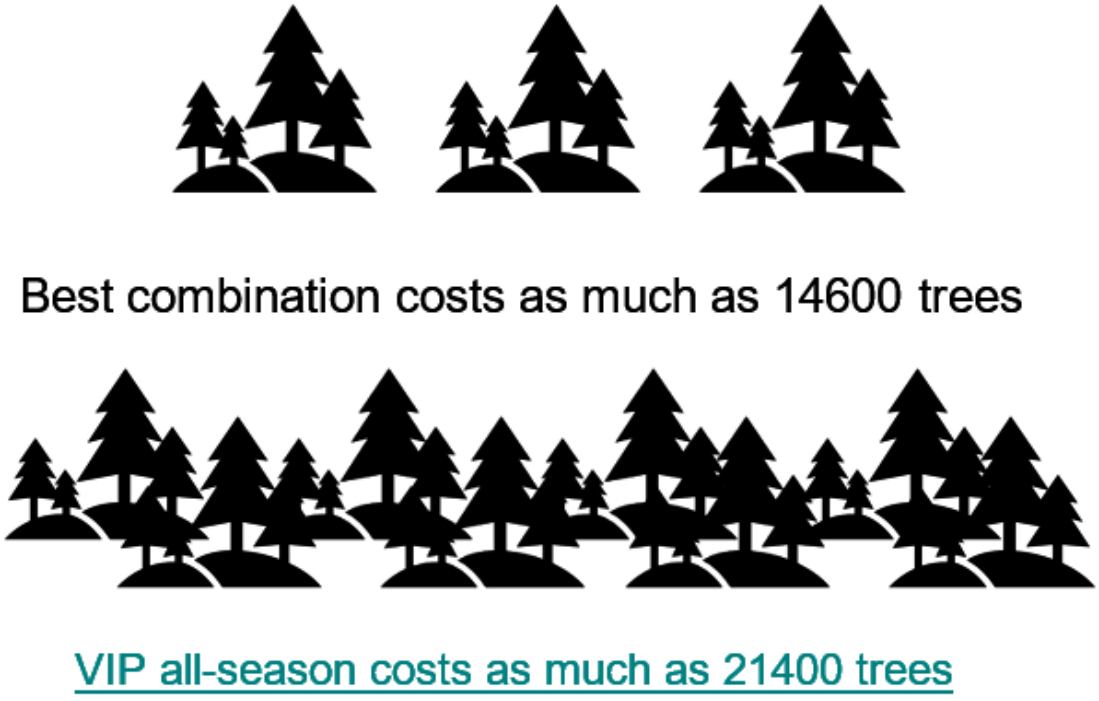


Figure-10 Tree equivalent for the CO_2e of best combination vs. VIP shipper.

SUMMARY

A digital approach allows us to quantify and compare the Total Cost of Ownership and the Carbon Footprint of various shipping options in the cold chain. In our example we found that:

1. Using a combination of EPS and PU shippers for different months reduces the Total Cost of Ownership by about 145'000€ per year, compared to a VIP solution.
2. The carbon footprint is reduced by about 150'000 kg CO_2e when using a combination of EPS and PU shippers, compared to a VIP solution.



Stefan Braun
Managing Director
SmartCAE

Stefan Braun is the founder and managing director of SmartCAE and started the Digital Cold Chain 10 years ago. He is an engineer by education.

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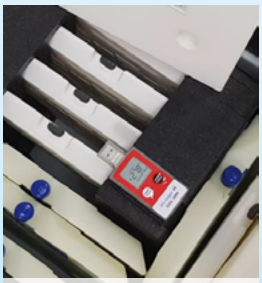


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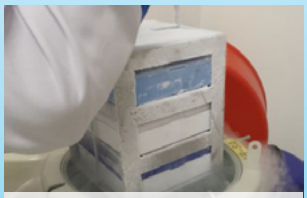
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How to Escape Heat Islands and Help the Environment

by **Timothy Foote**, Director Transportation & Network APAC at **Asendia** and Founder of **Susymbio**

This time of year in Southeast Asia is stifling hot. As the saying goes, "it's not the heat - it's the humidity!" This is actually the case here in our region. In response to this heat most every space we are working in has air conditioners to cool up our working space. And they are hard at work – believe it. Most of us working in cities and towns are part of a "cold chain". All in the effort to get productive efforts out of our bodies that in times of high heat tends to shut down. Think of yourself as a head of lettuce! When you get too hot, you start to wilt. When our bodies are too cold we can also start to shut off from every activity apart from trying to get warm.

Is there an environmental cost to all of this temperature control? You bet. There is a lot of cost all around. Just paying the electric bills for running AC can cost families a tidy sum of money. It's the reason that people are always much more cost conscious of keeping AC low at home or even switching to fans in order to keep electricity costs down. Those miserly actions make sense; in a recent article in Channel News Asia online it was reported that for an average family living in an apartment in Singapore up to 25% of the electricity used went to air conditioning. Emissions for a standard Singapore home are also annually greater for air conditioning than from automobiles. Commercial buildings are even more energy hungry. The average office uses 40% to 50% of their electricity bills to pay for air conditioning.

Air conditioners don't actually cool an area but more to the point they move the heat somewhere else. Anyone walking on our city streets will experience that heat blow out when the units are close to ground level. It can be a real steam bath! In fact it is one of the major factors in creating what is known as urban "heat islands". In Singapore that can mean a difference of up to 7 degrees! To get to our artificially created heat islands, we have busses and transport that also blast AC so that we don't *wilt* when travelling about.



HOW DID WE GET HERE?

Many of our older relatives could tell us about life without AC. Many parts of the world still do not have it. When I go on diving trips in our region, I'm often in accommodations without AC and I am still very happy to be there. Part of the reasons for this is that I am not surrounded by buildings pumping hot air into the environment. Another factor is the use of natural shade and some sort of breeze - which is common when away from the city.

When cities became more dense, the breeze and shade disappear. Additionally the AC units came into play as the windows remained shut for good. The spiral to then keep pumping more cool air while making the outside hotter results in where we are at todaybut there have been changes to this picture which help reduce energy consumption and at the same time keep us fresh and *crunchy*.

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STRATEGIES

Serious action plans for saving energy includes the reduction of its use altogether. Let people work in cooler locations other than the heat islands of our cities:

- Shrink the area you need for office space by allowing working from homes
- Scrapping the nine-to-five! Simply adjust working times to the cooler parts of the day while resting in cooler areas during the super-hot mid-day

Other strategies that modern managers use will sound similar to those used for shipping cargo in a cold chain:

- Reflect the suns heat by using reflective paints
- Catch the suns heat by collecting it with solar panels or rooftop gardens
- Use sensors to turn down cooling systems when the outside temperature changes



- Use shades for keeping building surfaces cooler
- Use water and chiller type units to take heat away instead of using conventional air-conditioners
- Let the wind back into buildings by using large fans instead of AC

As workers, we all want to stay fresh and comfortable. Doing that well should mean that the urban heat islands are minimised significantly. If we can manage that we'll be doing ourselves and the planet a favour.





Timothy Foote
Director Transportation & Network APAC at Asendia and Founder of Susymbio

Tim has worked in management positions at multiple MNCs for more than 25 years, gaining expansive expertise in logistical operations. Tim continues to craft delivery solutions for many e-commerce clients at Asendia. Once a regional Head of Go Green at DHL eCommerce, Tim now works for customers to decarbonise their logistics by managing Asendia's 100% carbon-neutral network.

To further promote a net zero future for the logistics industry, Tim created MOVE GREEN. This is a movement committed to greening the logistics industry during this time of transformation. Please join the companies making a pledge to become net zero by going to Susymbio.com for more details.

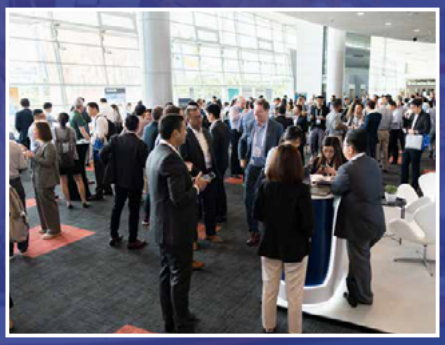
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