



Innovation Insights

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Innovation Insights

Dear reader,

In a world where the movement of goods and information is the lifeblood of global commerce, innovation is the driving force behind efficiency and progress.

With the DB Schenker Innovation Insights magazine, we want to take you on a journey through some of the latest developments at DB Schenker. In the following pages, you'll delve into the world of innovations that are paving the way for a more connected, sustainable, and efficient future. Learn more about the major logistics trends in the upcoming years, cutting-edge technologies, and forward-thinking initiatives.

We invite you to be inspired by the power of innovation and become a part of this exciting journey.

Enjoy reading and always stay #hungryforinnovation

DB Schenker's Global Innovation Team



STARTup terminal

Launch of the DB Schenker STARTup terminal

Since 2016, DB Schenker has had a central team dedicated to working with startups. To date, 4,176 startup solutions have been screened, 154 pilot projects have been carried out and 63 have been scaled to standard operation.

Now DB Schenker introduces the new brand for the Global Venture Clienting und Innovation Projects activities:



Co-Headed by Ronja Stoffregen and Sebastian Schuhmann, the STARTup terminal team translates business needs into clear strategic fields for operation and startup scouting. They are the ones to match startup solutions with the right contact person in the business and functional units.



In summary - STARTup terminal is the partner of choice when it comes to piloting and scaling of startup solutions with the aim to digitize and automate the DB Schenker core organization.

Success Stories

They're the real-life examples of how cutting-edge technologies of startups can actually automate and digitize logistics products and processes. To see how challenges can be tackled and make businesses thrive, it's not just inspiring – it's proof that this job is done right.

AVATOUR

Remote collaboration for on-site meetings

Avatour brings coworkers, clients, and inspectors on-site with 360° remote collaboration – for real-time communication. Since 2021, DB Schenker has successfully offered Avatour to 25+ top customers covering more than 30+ sites in 25 countries.

FERNRIDE

Teleoperated electric yard-trucking

Fernride allows to remote control automated or manual vehicles in the yard process using teleoperated shunting trucks for trailers. It enables human intervention and assistance of the vehicle from afar. A first pilot with live operation has been conducted at a DB Schenker terminal.

Stay up to date and follow [STARTup terminal on LinkedIn](#)
More insights on dbschenker.com

Health Management at the Backbone of DB Schenker

Digital ergonomics coaching for industrial employees

The demographic change in society makes it indispensable for companies to think intensively about the ergonomic design and attractiveness of their workplaces in order to reduce the physical strain on their employees in times of skilled labor shortage.

In addition to automation of work processes, flexible mechanical tools such as exoskeletons, and work organization measures (job rotation), intensive coaching of blue-collar workers is of great importance to ensure a sustaining change process.

As part of the “ErgoMining” project, a team consisting of DB Schenker, MotionMiners, and OTTOBOCK has developed digital ergonomics coaching for industrial employees. Using sensors, movement sequences are recorded in two order-picking tours and evaluated via a web platform. The training takes place in the warehouse, under realistic conditions with typical articles. Sensors on the employees’ wrists and belts and a scanner provide the necessary movement data.

Between the two sessions, there is a detailed ergonomics coaching by a professional trainer with transparent feedback on the employee’s movement patterns. Using visualization via tablets as well as tips and tricks from the coach, the employees are able to reduce the stress on their musculoskeletal system.

An important key figure is the so-called “Ergo Score”, assessing the movements with the critical indicator method and a maximum of 100 points to be reached. The aim is to beat this score in the second round. The final discussion includes a certificate with the achieved Ergo Score and illustrated recommendations for health-conscious movement sequences. A training session lasts about 30 to 45 minutes and can be completed individually or in tandem. The results of the pilot training showed that this digitalized training was very well received by the employees. Satisfied participants, positive evaluations, and an increase in the Ergo Score - training can be both sustainable and fun.



Sustainable Terminal Bergen, Norway

DB Schenker expands European network with positive environmental impact

This past September DB Schenker opened a new terminal in Bergen, Norway at the Flesland Airport. The 46-acre site is home to a new 7,000 m² logistics center. With this new terminal we've increased our capacity and can offer the market reliable transport products, not just on land but also within our air and ocean Business Units.

Wolfgang Frank, Head of Land DB Schenker Norway, says that “The terminal in Bergen is a powerful part of our network. We are pleased that we can finally offer our customers and the market the best facilities for freight transport in the region.”

The terminal features several sustainable design elements. Most notably the building and operations are largely self-sufficient in electricity through solar panels on the roof. 20% of the roof is covered with solar panels. The remaining 80% being a green roof, meaning it is covered with grass and moss. Green roofs can help reduce stormwater runoff and aid in temperature regulation of the building among other benefits.

The terminal also features charging stations for electric vehicles such as our ever-expanding alternative fleet. DB Schenker has many alternative fuel vehicles operating in Norway, and we are continuing to increase the fleet numbers with electric trucks. Inside the building we have implemented LED lighting which on average are more energy-efficient and last longer than other types of lighting. Inside you will also find energy and noise reducing windows. By reducing noise, we are promoting a better and safer work environment inside and reducing energy by utilizing natural lighting.

With 75 ports over a 46-hectare area and a leading environmental design the new Bergen logistics center is a great addition to DB Schenker's European Network. The site connects 430 land transport locations in Europe and goods are already being delivered to more than 38 countries every day. This is just another example of DB Schenker's commitment to our customers and our planet.



DB Schenker Trend Report 2023

Navigating the direction of change in the logistics industry

At DB Schenker, we conducted a Logistics Trend Survey to explore the forces and trends shaping the industry and how it might develop in the future. The Logistics Trend Survey includes 20 trend statement proposals framed along the PESTEL framework. Based on the participants assessment in terms of relevance and business impact, the trend report aims to identify the direction of change in the supply chain industry in the next five years.

What does the report provide?

- Twenty trends evaluated by relevance and business impact (by 125 supply chain professionals, experts and academia),
- Top challenges faced by the logistics industry,
- In-depth look at the most relevant and influential trends.

General conclusions from the DB Schenker trend survey and report confirm the overall direction of change of the industry. It is to be expected that digitization will also continue to ad-

vance in the industries closely related to logistics in the coming years. This will lead to increased customer demand and pressure on logistics service providers to deliver supply chain visibility solutions like real-time tracking of shipments, alerting and managing disruptions and monitoring CO² emissions.

Anyhow, the top trend identified by the report is “New Work”. The research discovered that mental health, workplace wellness and work-life balance will play a major role in attracting new employees. Only by tackling these aspects of work the logistics industry will be able to become “Employer of Choice” in order to face major challenges like global workforce shortage.

Are you interested to read more?

Visit the **Logistics Matters** blog to [download](#) the full report.



Schenker Ventures – Corporate Venture Capital

Schenker Ventures grows its portfolio...

...with Dexory

As part of the Series A funding round of Dexory, Schenker Ventures secured funding for the provider of real-time visibility solution in the warehouse based on robotics and data analytics. The Schenker Ventures team believes that Dexory's innovative technology which features ease of use, depth and speed in inventory data collection, has the potential to revolutionize warehouse processes.

About Dexory

Dexory uses the synergy of autonomous robotics, extensive image, and sensor data as well as powerful analytics and insights to provide complete transparency to individual warehouses of all sizes. It is connecting locations across the global supply chain via the digital platform, DexoryView. Digitizing physical warehouses provides the opportunity for real-time management and performance optimization of intralogistics processes. Dexory's solution addresses the urgent need for improved visibility, better space utilization and higher efficiency in warehouse operations around the world.

...and SQUAKE

Schenker Ventures' participation in a €3.5 million funding round helps the climatech- startup expand its strategic market share due to increasing corporate demand. It also illustrates DB Schenker's journey to close the huge gap in emissions awareness in the logistics industry and enable more sustainable decisions.

About SQUAKE

SQUAKE is an industry solution that uses a single application programming interface (API) to provide accurate carbon calculations to national and international standards and automated carbon removal and reduction along the supply chain. They connect customers with global partners, including sustainable fuel providers and reforestation projects, and use their network and technology to provide a solid foundation for information-based and sustainable decision making for any business.

DEXORY

SQUAKE

Remote Forklift Pilot in Hildesheim

Material handling-as-a-service to improve warehouse operations efficiency

Even though the focus is on fully automated material handling equipment (MHE) with many technological advantages, there are always cases where human skills are essential to properly perform individual logistics tasks that cannot be covered by automation.

The solution of a remote controlled MHE, provided by the startup enabl from Germany, is a possible technology to bridge the gap between manual and fully automated forklift driving. The forklift driver sits in front of a remote-control station equipped with steering wheel, pedals, joystick and monitor while controlling the vehicle from any location. The vehicle itself, located in the logistics facility, needs a permanent connection to the network and executes the maneuvering commands in real-time. Whenever needed, forklift transports can be booked in a material handling-as-a-service model. This can vary from regular use in daily operations to seasonal support in times of volume peaks.

In addition to the commercial benefits, this solution holds the potential to redefine and improve the working conditions

of forklift drivers. The driving station can be designed in a way that is healthier and more ergonomic than a driver seat and drivers with handicaps could be employed as well. The incremental introduction of automation to this technology, will allow assets to autonomously handle long and simple routes while receiving remote assistance for the complex tasks in the future.

To test this technology and identify use cases for remote forklift operations, a pilot with enabl was conducted end of October in Hildesheim led by DB Schenker Germany Contract Logistics. In a 10-day intensive test phase, a vehicle was used to test various forklift driving tasks, such as unloading trailers, as well as different transport equipment and special pallets. The results of the pilot week demonstrate the technical and operational feasibility of the solution and point out what needs to be improved to develop a ready-to-use product. The next steps in the collaboration between enabl and DB Schenker are the validation of clear use cases and locations for the first deployment of productive remote forklift operations.



Hager Group & NxtLog Collaboration

Revolutionizing sustainable logistics

In today's environmentally-conscious age, Hager Group has embarked on an innovative journey with the DB Schenker venture NxtLog, a front-runner in emissions calculation and reduction. Their collaboration seeks to measure, report and reduce logistical emissions for Hager Group.

Objective

The alliance aims to set a benchmark in the logistics field by streamlining emissions data across all transport mediums and suppliers. Their goal: a uniform system where emissions data remains consistent, regardless of the transportation type, aligning with global sustainability criteria.

Implementation

– Data Harmonization: As cornerstone of this partnership, Hager Group and NxtLog have unified data collection techniques across transport types, setting a precedent in emissions data accuracy.

- Emissions Calculation: Their joint efforts have produced a comprehensive emissions calculation system, factoring in aspects like transport mode, geography, and supply chain elements. This delivers precise and actionable emissions insights.
- Quarterly Emissions Reports: Hager Group benefits from detailed quarterly reviews by NxtLog, shedding light on current emissions patterns, product analyses, and industry comparisons. These reports, grounded in refined data, offer invaluable insights.
- Recommendations & Forward Plans: Their achievements in data syncing and emissions tallying are just the beginning. NxtLog continues to advise on ways to enhance these processes, aiming for even more precise future reporting.

Conclusion

The proactive partnership between Hager Group and NxtLog stands as a beacon for the logistics world. Prioritizing data consistency, exact emissions analytics, and tailored reporting, they're pioneering industry change. Their ongoing efforts are dedicated to improving emissions data quality, ushering in a greener tomorrow.

Interested

Are you keen to **measure**, **report** and **reduce** logistical emissions too? Sign up for a free trail at www.nxtlog.ai or get in contact with: tobias.heyer@nxtlog.ai

hagergroup



NXTLOG
NET-ZERO LOGISTIC NETWORKS

Scoping the Supply Chain Visibility Market

Schenker Ventures market research on supply chain visibility startups

Schenker Ventures has undertaken a market research study on the startup landscape, identifying more than 120+ startups providing supply chain visibility solutions. Visibility in logistics refers to tools, methodologies, and strategies to collect, analyze, and use data to plan and execute the supply chain efficiently as well as to mitigate disruptions in operations, plan more effectively, meet customer demands and control costs. In this study, Schenker Ventures looked at companies' product offerings, their adoption of new technologies, their competitive edge and different fundraising stages. The team identified 5 visibility solution concepts:

- **Traceability solutions:** Technologies for real-time tracking and tracing of a product within the supply chain.
- **Transparency solutions:** The provision of item specific and relevant information to stakeholders including their origins, processes, and movements.
- **Carbon management solutions:** Tools, platforms and strategies that enable the tracking of 1, 2 and 3 emissions along the supply chain, usually measured in CO² equivalents and mitigation of different emissions.
- **Risk Management solutions:** Tools, methodologies and strategies that enable organisations to identify, assess, mitigate and manage risks and uncertainties that can potentially disrupt the supply chain.
- **Optimization solutions:** Technological tools and platforms that enable organisations to improve the efficiency, effectiveness and overall performance of their logistics operations.

The image displays five categories of supply chain visibility startups, each represented by a horizontal banner with a title and a collection of logos:

- 1 Traceability Solutions:** Includes logos for GEOPALLET, SAVI, CleanHub, GreenToken, ITRAC, roombee, Circonomit, BioLedger, ADAPT, S, WINE SPIDER, EON, circular, TRADEWIND, seedtrace, CIRCULARISE, and FAIRFOOD.
- 2 Transparency Solutions:** Includes logos for eeSea, Sourcingmap, SHIPPEO, TRANSV, YANT, project44, Craft, ownest, SOURCING, DockFlow, circularit, WINDOW, trustrace, FOURITES, retraced, and zencargo.
- 3 Carbon Mgmt Solutions:** Includes logos for Collectiv Food, oisetted, FLEKIDAG, carbon Asset, ZERO44, gryn, sustainabil, sphera, Normative, O Patch, xylene, brightest, Everimpact, carbon, carbme, carbonize, 12 Point System, TYMLEZ, CHOPOSE, Carbon Chain, MakerSite, pledge, bext, worldfavor, Klappir, TEQ, cloverly, and re.
- 4 Risk Mgmt Solutions:** Includes logos for CARGLINE, correntics, resilinc, AEXI, Vizibil, CHRONICLED, repath, WAKEO, and prewave.
- 5 Optimization Solutions:** Includes logos for OFLOAD, DEMATIC, Dataloy, COPT, Bringly, NAUTILUS LABS, BRIDGE, centiro, ARKAX, SWARM, flowlity, CHILL-CHAIN, and Kardinal.

Following this research, Schenker Ventures concluded that the supply chain visibility sector is subject to trends (reverse logistics, circular economy, etc.) which are mainly driven by regulatory pressures (e.g., product claims, proof of origin, etc.) and business ambitions (supplier management, process optimization, etc.).

As a result, solutions tend to be industry specific (fashion, energy, etc.) to target customers' precise demands. However, across all industries, we see companies' need for more data sharing and collaboration from their suppliers. Schenker Ventures expects that new offerings are expected to emerge in this space, led by new tech (e.g., AI and ML), to better tailor companies' operational and ESG needs.

First full-electric HCT Truck in Finland

An important step towards zero-emission road transport

DB Schenker introduces Finland's first full-electric high-capacity truck (HCT). The combination, consisting of a full-electric Volvo FH Electric truck and two semi-trailers, has a maximum allowed total weight of 68 tons.

First, in test use, the full-electric HCT truck supports DB Schenker's sustainable development strategy to reduce emissions from its own operations. The new truck will be used for linehaul transports between the Vantaa and Lempäälä terminals, as well as for the collection and distribution of consolidated transports between Lempäälä and Hämeenlinna. Operating in three shifts, the truck will be charged between the shifts by power charging equipment at the loading docks in Vantaa and Lempäälä.

"DB Schenker wants to lead the way in environmentally friendly logistics. We are committed not only to providing our customers with sustainable and innovative transport solutions but also to developing the entire logistics industry towards a more sustainable tomorrow. Our full-electric HCT truck is an investment in the future and an important step in the transition towards zero-emission road transport," says **Harald Knaapinen, Head of Land Transport Finland**.

Electrification done together

The introduction of the new Volvo FH Electric is a continuation of the cooperation between DB Schenker and Volvo Trucks in fully electric vehicles. In 2022, Volvo supplied DB Schenker with a fully electric Volvo FL Electric truck, which is used to operate delivery services in the Tampere city center without local emissions. Now Volvo wants to show that all-electric and transport solutions also work in applications with high total weights and high utilization rates.

Power charging from own solar power plants

DB Schenker has DC power charging equipment in its Vantaa and Lempäälä terminals, which are sized according to the charging time and need of the fleet. Except in winter, solar power plants provide the energy required for charging the fleet. If necessary, the electricity is purchased from wind energy, which is virtually emission-free. The charging system built at the Vantaa terminal is exceptional in the Finnish logistics industry. The total capacity of the charging system is about 1000 kW. Besides the new Volvo FH Electric, the charging system is used for charging local electric distribution vehicles.



Mobility of the Future: DB Schenker tests automated electric Trucks in Public Transport

DB Schenker and BRP-Rotax lighthouse project successfully completed

It was not an easy project that the project partners DB Schenker, BRP-Rotax and the Digitrans test region took: An automated electric truck that commutes independently and reliably on a 600-meter route between the two companies DB Schenker and BRP-Rotax in all weather conditions. The joy of this great success is even greater. The project partners brought the electric truck into public traffic and completed the project with complete success.

“It is of utmost importance to us to offer our customers innovative and sustainable logistics solutions. We are therefore very pleased that we were able to successfully complete this lighthouse project in Guns kirchen and demonstrate that fully autonomous driving works in real operation, even in complex environments and under difficult weather conditions. “In this way, we are driving forward the real use of autonomous freight transport solutions worldwide,” says **Mag. Alexander Winter, CEO of DB Schenker Austria and Southeastern Europe.**

The electric truck, equipped with state-of-the-art sensors, was always connected to the surrounding infrastructure, such as the company’s factory gates and the weather station, during its journey. Two traffic lights with a C-IST (Cooperative Intelligent Transport Systems) interface were of particular importance in the project, enabling bidirectional communication between the vehicle and the nearby infrastructure. In order to best coordinate the diverse interaction of all factors, detailed planning and ongoing adaptations of the vehicle, the route and the traffic light switching were essential.

Especially at the end of the test phase, it was successfully demonstrated that the electric truck was integrating better and better into conventional traffic. The project has now moved back to the Digitrans test track in St. Valentin, where the operation of the electric truck is being tested using teleoperation (remote control technology).

In order to realize the goal of fully autonomous freight transport in real traffic, further research and developments in the areas of vehicles, software and sensors are of great importance. DB Schenker and its project partners are already planning further projects to achieve this goal and advance automated freight transport on Europe’s roads.



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101006817

Schenker Ventures Launching its Venture Building Startup Axxessible in Egypt

First importers piloting the Axxessible solution to optimise customs clearance

Last month Schenker Ventures and Schenker Egypt have officially and exclusively launched Axxessible to selected large multi-national importers. The pilot phase will be rolled out incrementally across Schenker Egypt with plans to expand to other countries in MEA upon successful conclusion of the pilot phase.

When importing to MEA on scale, Trade and Product Compliance Managers are constantly chasing time to ensure shipment is cleared on time with the aim to avoid additional unplanned financial, commercial and legal liabilities. Axxessible analysis of thousands of shipments to Egypt reveals that 93% of shipment are not cleared on time due to inefficient communication between all parties involved as well as dynamic constantly changing customs decrees and regulations, together with complex international and local customs tariff codes importing procedures. All of these factors are causing various bottlenecks across the full customs clearance journey, resulting in escalating commercial, admin, storage and demurrage costs.

Axxessible Customs Clearance cloud solution helps importers to forecast and manage their Customs Clearance efforts on scale from all their clearance vendors consolidated into one standardized dashboard, minimizing financial and legal risks and getting shipment cleared on time.

The platform is built on a library of expertise and requirements for thousands of customs tariff codes created by licensed customs brokers. This is supported by data science and machine learning technologies to enable importers to predict and accurately manage a shipment clearance in real-time for their entire product catalogue. With Axxessible, importers can proactively track and manage the clearance requirements and deadlines for each shipment. This leads to a reduction in clearance lead time of up to 50%, contributing to financial savings in storage, demurrage and commercial costs.

“We are today pioneering an innovative solution in MEA to help importers save thousands of dollars per shipment in avoidable clearance related costs. Our plan is to validate the venture early numbers through this pilot phase in Egypt with 5 of the largest importers in the country and expanding across various verticals in Egypt and other markets in MEA, with a new market solution independent from Schenker offerings and brand.” **Adam Moalla, Senior Manager Venture Building at Schenker Ventures**



Shoe Swap - Let's explore different Roles

Break down silos and foster cross team and company collaboration

As the business landscape evolves, so do the needs and expectations of employees. The rise of hybrid work arrangements in the post-COVID era requires new approaches to foster growth and adaptability at the workplace. Therefore, DB Schenker believes in the power of innovation, and one initiative that truly exemplifies this is “Shoe Swap”.

Innovating Collaboration Across Organization

Conceived in August 2022, Shoe Swap was born from the desire to break down silos and foster collaboration across diverse teams, departments, and units. It provides employees a unique platform to explore different roles, understand diverse perspectives, and enhance their skill sets.

What makes Shoe Swap innovative is its ability to transcend organizational boundaries and connect employees who would rarely exchange otherwise. It's an endeavor that goes beyond the traditional realms of knowledge sharing. It's about walking in someone else's shoes, gaining fresh perspectives, and

equipping ourselves with diverse skill sets for an ever-changing world. The lessons learned from Shoe Swap aren't confined to job-specific skills. They extend to a broader understanding of our organization, its intricacies, and the interconnectedness of our teams. It's a journey of discovery, enabling our employees to navigate the complexities of the post-COVID world with confidence and agility.

Join the Shoe Swap Movement

Shoe Swap isn't just a DB Schenker initiative; it's a beacon of innovation that can illuminate the path for other organizations. If you're as passionate about future-proofing your employees' skill sets as we are, consider joining us in this transformative journey.

We invite other companies to swap shoes with DB Schenker, to share experiences, and to forge connections that strengthen our collective abilities. **Together, we can pioneer new ways of empowering our workforce, fostering innovation, and thriving in a world where change is the only constant.**

To embark on this journey or learn more about Shoe Swap, please reach out to Carina.Ellmer@dbschenker.com

Let's shape the future of work together, one shoe swap at a time!





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