UPDATE
COMPANY MAGAZINE

No. 34

BRAND AMBASSADOR

Mick Schumacher on the parallels between motor sports and intralogistics

TREND: E-COMMERCE

Experiences, solutions, and tips from users and industry experts

PRODUCT NEUTRALITY

Logistics solutions in practice and Customer Service & Support

IDEAS, VISIONS & SOLUTIONS FOR INTRALOGISTICS

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Dear readers,

Perfect means perfect for you. To offer our customers individual solutions now and in the future, we at SSI Schaefer are thinking ahead and continuously expanding our product portfolio and capabilities. Our modernization efforts are starting to really pay off – especially in plastics production. In addition to new and modern facilities in Neunkirchen (Germany), we have also expanded our capabilities in Charlotte, North Carolina, adding new equipment with greater capacity and state-of-the-art technology. Globally, the market for custom (bespoke) packaging is continuously growing and gaining in importance. We have therefore successfully expanded our product range and market presence at our sites in Mexico and the United States and installed a new production line for thermoforming in Neunkirchen.

For us, digitization means the "Internet of Bins" (IOB), which includes intelligent digital container products and solutions. How this digitization works and relates to our stance on sustainability you can find out on page 24. The following pages cover durable reusable containers for the dm company as well as the custom (bespoke) packaging for our customers Rowenta and Märklin that provides excellent product protection in manual or automated logistics and production processes.

We recently received the "Bosch Global Supplier Award", confirming our technical competence and logistics quality in development, production, and implementation as well as our status as an innovation partner for our customers. In addition, the "Best Logistics Brand 2019" award for our containers validates our approach with a special focus on product development in terms of both usability and durability. We are very thankful for the trust in our brand.

In this issue, you will read success stories from the field, from the way, DSV is adapting to the increasing challenges of e-commerce, to how Caiba is benefiting from the new SSI ORBITER®, and how the multiple award-winning single-level shuttle SSI Flexi is used at Arvato. On page 10, Elie Zita, EVP Customer Services, explains how we provide the highest system availability to customers.

We also look at e-commerce from a SME point-of-view, presenting practical insights and useful tips. E-commerce expert Markus Schellinger provides a deeper look into this sales channel and the impact it has on the logistics processes for an SME. Additionally, our exemplary e-commerce solution for medium throughputs showcases how an intelligent and, above all, scalable concept for processing such orders could look like.

Moreover, we introduce our partnership with Mick Schumacher. The Formula 2 driver and SSI Schaefer share a common philosophy that is true to our corporate motto: *Think Tomorrow.*

Happy reading!

Warmest regards,

Dr. Armin Vogel
EVP Plastics, SSI Schäfer

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Imprint

Update
The company magazine
of SSI SCHAEFER
No. 34, 1/2019

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Picture credits
Cover: iStock.com/undefined,
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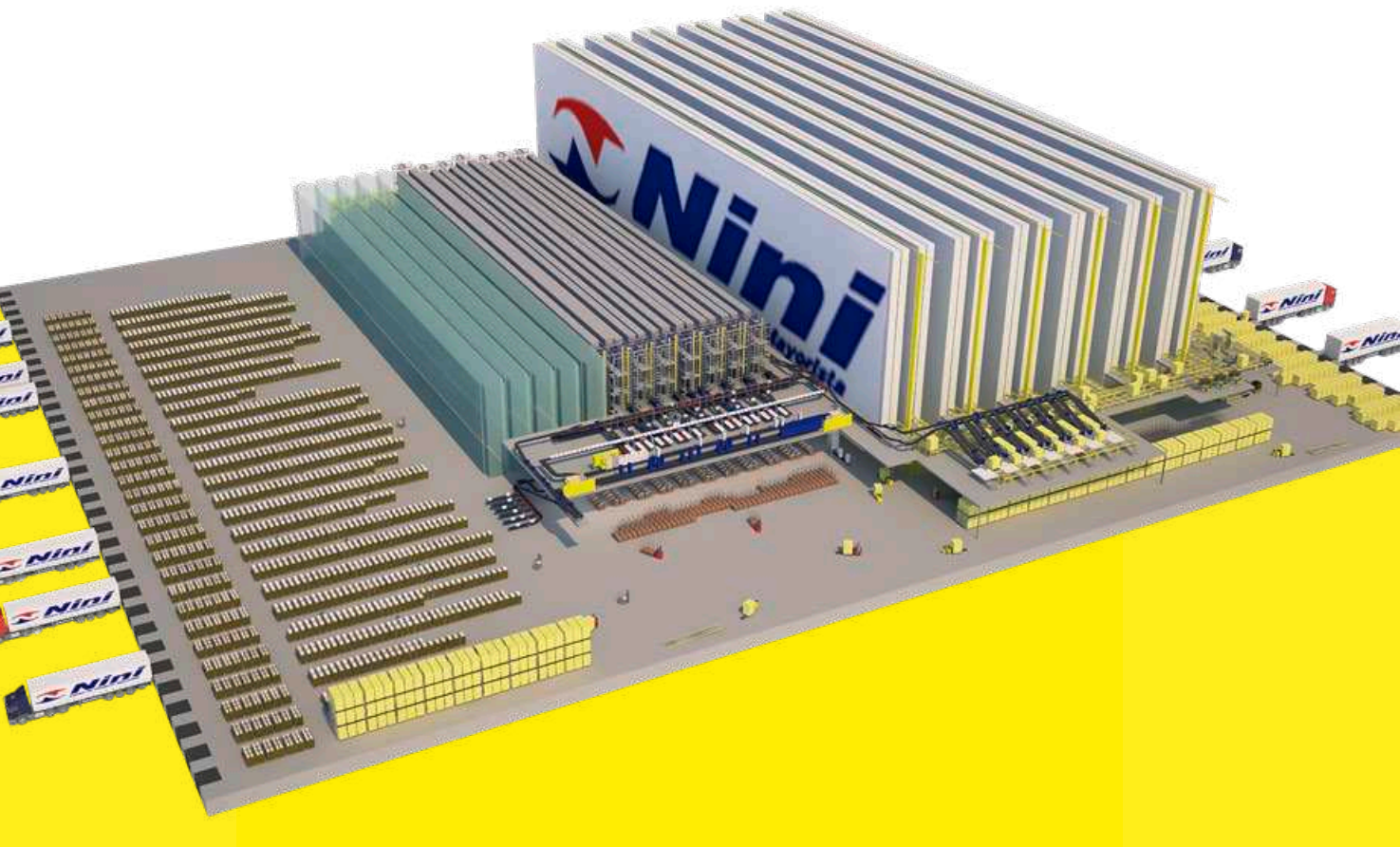
STATE-OF-THE ART DISTRIBUTION CENTER FOR RICARDO NINI S.A.

Ricardo Nini S.A., one of the leading wholesalers in Argentina, chose SSI Schaefer as general contractor for intralogistics to equip a highly automated logistics center.

Buenos Aires, Argentina. Fast store delivery, daily and seasonal volume fluctuations and continuously changing customer purchasing behavior are major challenges for wholesalers – hence, the intralogistics requirements also change. The new distribution center for Ricardo Nini S.A. meets these requirements and will ensure the efficient supply of more than 3,000 stores in the Buenos Aires area as well as the directly connected 12,000 m² store with a wide range of dry food products and non-food items. The new logistics center covers an area of 32,000 m² and will accommodate 9,000 products. Every day, 1,100 pallets will be processed at goods-in, while 127,000 cases and 194,000 individual items will be picked. The core elements of the project are an automatic shuttle warehouse with 117,000 bin storage locations, a high-bay warehouse with 37,000 pallet storage locations, picking work stations, a conveying system combined with Automated Guided Vehicles and the logistics software WAMAS®. The high-bay warehouse as well as the picking areas are planned to be in operation by the end of 2019.

"We evaluated a large number of intralogistics options and solutions, and the solution proposed by SSI Schaefer has convinced us right from the beginning. We completely trust in the skills and experience of SSI Schaefer to plan, develop and implement holistic logistic systems including a tailor-made software as we requested," summarizes Carmelo Miguel Nini, owner of Ricardo Nini S.A.



STORING HISTORY

The Cambridge University Library collections encompass around nine million books, manuscripts and other physical items that wish to be kept safely.

Cambridge, The UK. The SSI Schaefer storage solution involved the construction of 24 aisles of high-bay narrow aisle shelving with each one providing an overall storage area at the facility of 87,000 m² which offers superb storage density.

Over 68,000 dividing shelves were fitted with storage trays located on the shelves two or three trays deep, providing over 100,000 locations. In addition, SSI Schaefer supplied 25 high density drawer cabinets providing 600 drawers to store large format maps and documents.

Ady Powell, Facilities & Library Storage Facility Manager commented, "Our new storage facility delivers on all fronts. Huge storage potential, perfect environmental conditions for our rare and unique books, all stored in streamlined, ergonomic shelving which has been designed with the team in mind. Data is available at the touch of a button with a comprehensive warehouse control system to ensure we can pinpoint the exact location of any item, at any time. We're proud of our facility and the role it plays in ensuring the continued safe keeping of our historic collection."

FEDEFARMA: NEW AUTOMATED LOGISTICS CENTER

Barcelona, Spain. The pharmaceutical cooperative Fedefarma is once again relying on SSI Schaefer for the design and implementation of its automated warehouse. The new logistics center, which will be commissioned at the beginning of 2021, will not only be one of the largest in the industry in Spain with a footprint of 34,700 m², but also one of the most advanced in European pharmaceutical distribution.

With the goal of maintaining the growth of recent years and being prepared for the development of the future, it is important to centralize logistics as well as inventory. With an order volume of more than 130,000 order lines daily, the new solution increases capacity by nearly 40% – in part thanks to the automated handling of more than 30,000 items. In addition, the system design is adapted to the specific requirements and regulations pertaining to the product types.

The impressive 7-aisle single-level Cuby shuttle system offers about 144,000 container storage spaces and is connected to eight ergonomic Pick to Tote work stations. Fedefarma accomplishes a throughput of approximately 4,200 picks per hour with its goods-to-person picking of slow movers. On the other hand, the A-Frame picks fast-moving products fully automatically with an expected productivity of 17,000 order lines per hour.

TWO DIFFERENT WORLDS ON THE SAME BASIS

Reigning Formula 3 champion Mick Schumacher, who is competing in the FIA Formula 2 Championship this year, and SSI Schaefer are entering into a partnership that will benefit from a common mindset.

Mick Schumacher's stringent pursuit of improvement has impressed for years. The 20-year-old son of seven-time Formula 1 world champion Michael Schumacher has long since established his own identity and, as a member of the exclusive FIA Formula 2 Championship club, is one of the best junior drivers in the world today.

"The goal of the partnership is clear, which is to Drive for Excellence!," states Michael Mohr, EVP Sales SSI Schaefer. "Mick brings a great passion that impresses us. Giving everything, gaining experience, and accepting challenges that work towards a solution with intent and focus. This is what connects our company with him. True to our corporate tagline, *Think Tomorrow.*, we at SSI Schaefer look ahead to achieve ambitious goals for our customers."

***"Think Tomorrow.* applies to me as well!"**
In an interview, Mick Schumacher delves into the partnership and the parallels to the intralogistics world of SSI Schaefer as well as his goals and motivation.

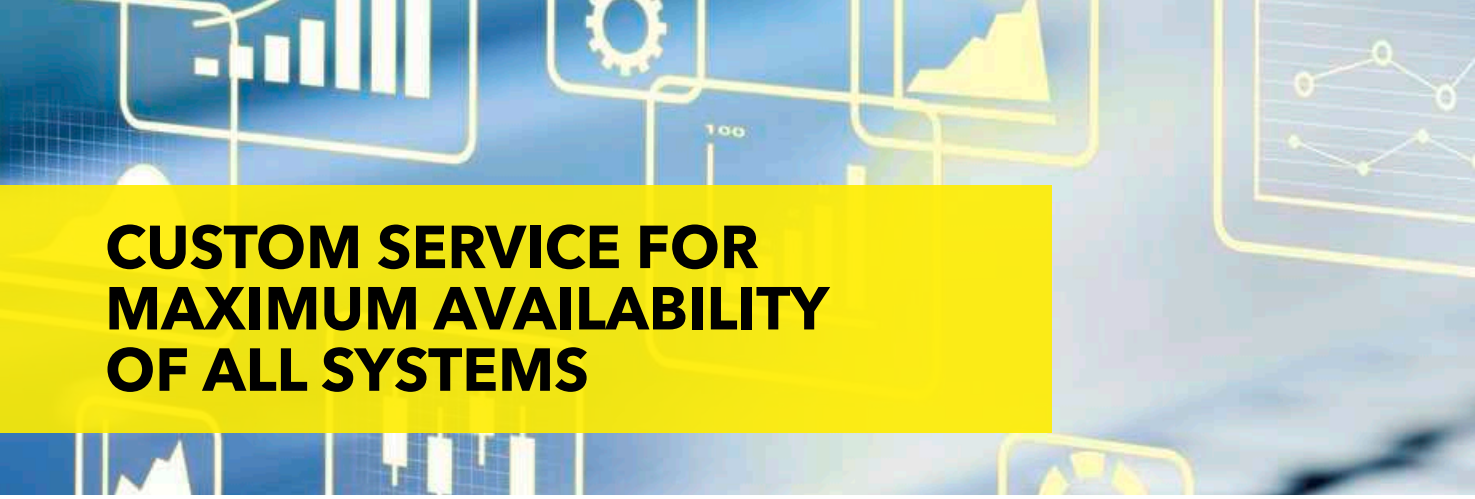
What does *Think Tomorrow.* mean to you?
The claim *Think Tomorrow.* is what motor sports are all about, which is to think ahead, never rest on your laurels, develop strategies to succeed, and have clear goals in mind. The phrase 'standstill is regression' is common in our sport; it's a philosophy I've consciously internalized.

What connects you with SSI Schaefer and what does the partnership look like?
Although we come from different worlds, the principles and philosophies are the same. It is about innovative solutions and long-term thinking and acting. However, it is also about the knowledge that success is only possible through teamwork and, where success is concerned, you cannot let up if you don't want to put the future collaboration at risk. After recently celebrating some initial success in Formula 2, we are by no means resting on our laurels. The entire team continues to work in a focused manner, identifying potential for improvement and putting it into action. This is the only way to survive long-term and to continue developing. The same applies to SSI Schaefer, who strives for long-term relationships with partners and customers that extend beyond the completion of a project. You learn and form the basis for future success with every project, just like with every race. As I said, two different worlds, yet still with the same principles and philosophies. That's why I'm so excited about this partnership.

With your start in Formula 2, you've come one step closer to achieving your declared dream – Formula 1. What motivates you every single day?
I'm asked this a lot. Frankly, it isn't a question for me because I love what I do. I find it exciting to develop myself and to learn as much as possible; not to mention, to work with many different people from different cultures. Working with the team and on myself is rewarding, and the competition itself challenges me. Accepting a challenge is fun.

#FindYourOnePercent. What is the factor that defines the difference to your success?
Finding that last bit that matters is probably the biggest challenge, and I'm convinced there is not just one factor here. In my view it goes without saying that I'm never satisfied, I never rest on my success, even if I'm supposedly ahead. You have to try to create the conditions for success on all levels, to virtually lay the ground, keeping an eye on all areas. Only the combination of all elements is success in my opinion – when everything fits and everything comes together. Luck is also a factor; but luck only happens for those who are capable.

And when you are away from the racing team and training, what do you do in your free time?
I'm an athlete through and through. Of course, this is also a big piece of training for my sport, but it's also fun. I like cycling, on- or off-road, and in summer I like everything on the water. Because I travel so much, I also enjoy spending time with my dog. And, of course, I try to spend as much time as possible with my family!



CUSTOM SERVICE FOR MAXIMUM AVAILABILITY OF ALL SYSTEMS

Every system is different, and there is a variety of growing demands on logistics. The desire for custom services and reliable support are constant, however. This custom service is the only way that high quality, maximum system availability, and a guarantee for providing decades-long supply of spare parts can endure. In machine and plant construction, all of these factors form the basis for long-term partnerships.

Elie Zita, an expert in all things related to customer service, knows exactly what makes the difference and explains how custom, well-rounded service lets customers sleep soundly.

After-sales support is continuing to increase in importance. Against this background, we have developed a broad and innovative service portfolio using the latest technologies, like augmented support or data-driven prevention. The services range from 24/7 technical support to warehouse modernization to preventive maintenance. With this integrated approach to continuous system maintenance and service, plus individually tailored service designs, our Customer Service & Support (CSS) team is able to ensure maximum system availability. With firmly calculated costs and framework conditions, customers can concentrate on their core business. We take care of everything else.

The SSI Schaefer Maintenance Philosophy (SMP) is an extended approach to the sophisticated SSI Resident Maintenance® concept, which is an all-round system service performed by certified on-site service technicians. Based on the three core elements consisting of the SSI Resident Maintenance team, best practice processes for technical maintenance and repair, and integrated service tools and systems, SMP includes efficient processes within the scope of conventional, reactive system maintenance. Yet, this integrated approach goes much further. It includes upstream analysis and consulting processes for continuous system maintenance, and the implementation of individually designed preventive activities, as well as the development and integration of SSI Resident Maintenance teams for permanent system maintenance. SMP breaks from the reactive maintenance cycle and transforms it into a dynamic, integrated process for maximum system performance and lifetime availability. The service is implemented in three phases.

YOUR BENEFITS

- Integrated: Custom service from a single source
- Long-term: Professional support throughout the maintenance process for the entire life cycle of the system
- Reliable: Fulfillment of agreed performance values
- Powerful: Continuously improved performance and maximum return on investment (ROI) thanks to the proactive support approach
- Security and “no surprises”: Minimizing risk and limiting the unexpected need for technical resources

Carefree in Three Steps

Elie Zita
EVP Customer Services
at SSI Schaefer

1. SERVICE DESIGN

We analyze the needs of the customer and select appropriate services from the CSS portfolio, which are modified to meet local demands. Practical requirements often include tasks like continuous technical support, preventive maintenance and systems service, automated evaluation and maintenance tools for continuous measurement, while safeguarding and documenting system performance.

2. SERVICE TRANSITION

Our highly qualified technicians provide support with on-site presence. In parallel, a separate service team, which is located at the customer's site on a permanent basis, is established. The technicians recruited by SSI Schaefer receive the expertise regarding the installed components and trades during intensive trainings provided by our in-house training department. They are further familiarized with system-specific tasks on-site. We also implement required infrastructure, which is often critical for ensuring proper implementation of the service portfolio agreed upon with the customer. Topics like optimized spare parts management in the logistics center, allow for quick action at any given time, and are highly important in daily operations.

3. SERVICE OPERATION

An administrative and operational group executes efficient implementation of SMP. The former, the central Resident Maintenance management team, leads the local team and offers around-the-clock remote and hotline support for more complex technical issues. The local (operational) team performs scheduled maintenance, operational support, troubleshooting, life cycle and spare parts management, and develops a continuous improvement process. While executing their activities, the teams consider customer-specific processes in the system, to minimize or prevent disruptions.

Our proprietary Computerized Maintenance Management System (CMMS) supports the service operation. It facilitates digital planning and control for all necessary maintenance measures and visualizes the incurring activities at the push of a button. Therefore, optimization potentials are continuously used and costs successively reduced.

The SSI Schaefer CMMS consists of the core elements CMMS web and CMMS app. The system is linked to the real world using 1D or QR bar codes, which attach to each system component as well as with smart phones and tablets for on-site service technicians. On the CMMS web, the maintenance manager plans the preventive measures, which technicians can then process and document after syncing the CMMS app on their smart phones. In the event of a malfunction, reactive maintenance activities can be performed without losing any time or requiring any additional planning effort. All data are gathered and evaluated centrally in CMMS web. The continuous exchange of data between each element ensures the creation of a consistent database for analyses, evaluations, and sustainable maintenance management.

WHAT E-COMMERCE MEANS FOR LOGISTICS OF SMALL AND MEDIUM-SIZED ENTERPRISES

Online commerce is booming, and it isn't new. More and more consumers are enjoying anytime/anywhere availability and doing their shopping online. Their expectations are huge.

Consumers want to source a seemingly endless selection of products via highly professional online stores with straightforward order options. Availability and delivery by the requested date with shortest delivery times or deliveries to pick-up points must include free returns or a convenient return in a brick and mortar store. To survive in this market and prevail in the face of big players like Amazon, these services are also increasingly mandatory for medium-sized companies and startups.

However, what does the introduction of this dynamic distribution channel mean? It's all about meeting customer expectations. Translated into terms of logistics and internal material flows of a company, this means 100 % delivery capability and loyalty, zero-error picking, the shortest lead times, and transparency in the warehouse and across the supply chain, all at a minimum cost.

In the following interview, Markus Schellinger talks about things small and medium-sized enterprises must closely consider when entering the e-commerce market.

Markus Schellinger
Director Technology & Solutions Retail & Wholesale
at SSI Schaefer

What sets an e-commerce warehouse structure apart from a traditional warehouse?
Traditionally, several branches or regional distribution centers are supplied from a central warehouse where everything is scheduled. In e-commerce, every single customer is supplied individually. The result is much smaller order sizes and the need to predict which items will be ordered, which isn't always easy. This is reflected in the range of available items, and the growing variety of items must be clearly structured and transparently managed to ensure permanent availability. Catalog and seasonal changes increase the stock of items from one season to the next. In addition, item sales can vary greatly, and the result can be an accumulation of slow-moving products. However, due to the unpredictability of ordering behavior these can suddenly turn into very popular goods with fast turnover.

This high level of dynamism, small order sizes and a large inventory portfolio means that the focus must be on efficient piece picking when it comes to assembling individual e-commerce orders. This in turn means a fundamental change in picking methods for e-commerce logistics. Because of these circumstances, traditional person-to-goods order picking results in longer runs and fewer picks per picking position and finally in slow, error-prone and costly processes.

So, how does this work in practice for SMEs?
When you enter the e-commerce business, good and careful preparation is everything. Therefore, it is advisable to work together in three steps:

1. Analyzing Basic data
With this basis, it is important to differentiate and illuminate the order data, especially in the direction of e-commerce. The growth of the company, the number of orders, possible changes of the order profiles as well as peaks and promotions should not be underestimated. A forecast for selling individual products is difficult and will always remain an unpredictable variable.

2. Putting together the right warehouse concept
We have to consider that SMEs initially test e-commerce as an additional sales market and that they do not switch over entirely all at once. This also means the customer does not necessarily need a new logistics center. Instead, modification to the existing design is optimal for parallel order processing. We select the right concept with regard to costs per unit picked as well as the order throughput time and take into account individual requirements for ergonomics and maintenance accessibility of the customer. For the final optimization of the system, we rely on a large team of in-house simulation experts in order to recognize potential bottlenecks and select optimized strategies. The success factor is the maximization of output while minimizing the effort.

Contrary to expectations, the magic words are still "manual" or "semi-automated". Manual processes and workforces are not only the best option to start with, but also in the long run in order to be able to respond flexibly. With online retail on the rise and increasing sales, the degree of automation is also continuing to develop. But, partially and fully automated processes primarily cover the base load and are intended to replace unpleasant manual and repetitive tasks. Order peaks require a special degree of flexibility, so they usually require some manual processes. In the future, it is of course still possible to readjust and re-automate step-by-step. Manual productivity can increase, for example, by adopting automated guided vehicles, intelligent order picking, or robotics.

3. Selecting the appropriate software solution
SSI Schaefer works with customers to develop a tailor-made IT set-up that is adaptable to the warehouse and picking concept. This includes inventory control, the definition and tracking of key performance indicators for efficient control as well as planning, simulation, and optimization of warehousing and picking for maximum and traceable transparency.

How do medium-sized companies benefit from a partnership with SSI Schaefer?
Each customer is unique, and we address each situation individually. Here, we exploit the synergies of our in-depth intralogistics experience and our broad expertise in e-commerce. Together with the customer, we develop solutions, compare different approaches and make profound decisions.

We strive to find the right solution for individual customers. Therefore, we advise our customers from a product-neutral perspective and solve their challenges individually. From manual to semi-automatic to fully automated, we use a large portfolio with a vertical integration of approximately 85 %. We also take care of IT in-house with our logistics software WAMAS®. Plus, as certified SAP partner, we provide the commissioning and offer 24/7 customer service using innovative technologies. The scalability of the system is always guaranteed and nothing stands in the way of future growth or adjustments. As a one-stop supplier of intralogistics with certified project management expertise, general contractor expertise and the ability to take on construction work, we reduce interfaces for our clients and minimize the risk of planning errors. The overall vision combined with great attention to detail makes the critical difference with us.

Furthermore, if we do not have the solution, we fall back on a strong network of partners and our ability to use "best in class" products.

BETWEEN EVERYDAY BUSINESS AND SEASONAL PEAKS

Flexible Solutions for E-Commerce Logistics

Consumers have long come to expect immediate availability of products and express delivery to their front door. If an online retailer cannot deliver the desired product quickly, consumers can simply order from another supplier that meets their requirements. These expectations put the highest demands on e-commerce companies' logistics and increase competition among online retailers. This makes a company's delivery capability a decisive competitive factor when it comes to its long-term survival in the market. Custom logistics solutions help successfully master these challenges. But what would an intelligent and, above all, expandable concept for handling e-commerce orders look like in reality?

A practical degree of automation for the market requirements of tomorrow

Each customer faces specific challenges, so each logistics concept must be considered individually. Yet, a strategic approach is similar: The foundation is concept development, which is based on comprehensive data analysis in terms of throughput requirements, number of SKUs, SKU and order structure and order types. Combined with the customer's business plan, the analysis results determine the framework conditions for practical intralogistics. The material flow outlined below is an example of what a solution-based approach might look like for a system with average performance.

Storage systems for maximum delivery capacity

After incoming goods inspection, there are two options for storage: Forklift-operated pallet warehouse for large load carriers and bulky stored goods or fully automated miniloads. Items that are usually delivered in large quantities sorted on pallets are stored in a manual high-bay warehouse, which can be either a narrow or wide-aisle warehouse. Depending on type manual block warehouses and pallet warehouses are good solutions for buffering bulky items. The narrow aisle pallet warehouses provide the highest storage capacities even with limited, narrow storage space and are ideal if space is restricted. Items delivered in smaller quantities on mixed pallets or in cartons as well as supply pallets pass through the decanting area, where they are sorted at ergonomic work stations for buffering in the miniload. Depending on the requirements, containers, cartons or trays are stored there in a dynamic and space-saving manner. Conveyors connect the systems to goods-to-person or person-to-goods work stations or robots in the order picking area where items are made available for order assembly.

Custom, ergonomic picking concepts
Due to performance fluctuations over the course of the year or day and the difficulty of predicting future demand, online retailers need modular and flexible solutions that are tailored to their needs. In particular, the picking area must simultaneously cover different demand intensities, from seasonal (Christmas, Easter, Black Friday etc.) and daily order peaks to average daily business. The latter determines the degree of automation of the handling concept based on the required performance. Goods-to-person solutions with a medium degree of automation for handling the standard day-to-day business are a suitable basis in this case: Picking items from the miniload is performed at ergonomic work stations. Alternatively, robots either support or completely have taken over the process. Depending on the required performance, storage and retrieval machines as well as single- or multi-level shuttles perform fully automated storage and retrieval tasks. Thus, the core business is reliably handled.

An investment in this technology is rarely worthwhile for seasonal peaks only. Which is why person-to-goods solutions are usually employed to cover seasonal peaks and to pick bulky items. Order pickers manually take items from live storage shelving systems as well as directly from sorted pallets to assemble a single delivery. Pallets and containers can be stored and removed in live storage shelving systems either manually or fully automated. The differentiation and consideration of systemic performance requirements of different demand intensities reduces the total investment overall. Depending on the specific needs and required throughput, the individual solution modules can be integrated and combined to different degrees of automation, so the goods leave the distribution center on time. So, full automation is not always the most economical solution.

An expandable, sustainable, and modular intralogistics system
Overall, logistics solutions must be individually scalable and adaptable to short-term business developments. This flexibility as well as the challenges of digitization speak to step-by-step project realization. Finally, a relationship built on trust with an experienced intralogistics partner plays a significant role in long-term planning and the financial security of a project. This is where the experts from SSI Schaefer come in. They work out a custom concept for each customer in detail. The starting point is not individual products but the sensible composition, the right solution and an economical pace of installation. The result is a sustainable and expandable intralogistics system in line with the company's guiding principle: *Think Tomorrow.*

WHAT CUSTOMERS WANT AND LOGISTICS DOES

E-commerce currently poses one of the most difficult challenges for logistics teams. Jörg Gonnermann, General Manager Logistics Service Platform at MISUMI, Wolfgang Heldt, Head of Logistics, and Marc Lohausen, Head of E-Commerce, both of Carhartt WIP, share their experiences with B2C and B2B.

Jörg Gonnermann (MISUMI) reports on the challenges in B2B e-commerce, an industry that is not immune to the pressure of shorter innovation cycles and high market demands.

What role does e-commerce play for your company?
JG: The integration of development, production, ordering and delivery processes, especially in machine engineering (which is an overall objective in Industry 4.0) that requires all parties involved to advance the digitization and networking of their business processes. In this sense, e-commerce, in all its forms, is an integral part of our strategy and crucial to a company's survival in the market.

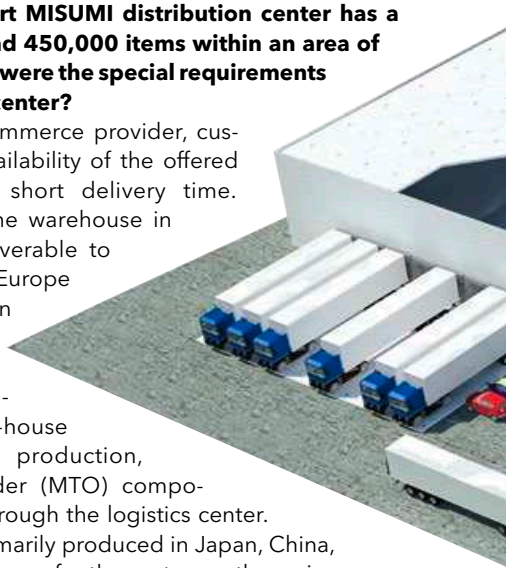
Digitization as well as e-commerce have always been subject to a certain vitality. How do you perceive the development of this distribution channel and what are the challenges companies like MISUMI face?
JG: The shift away from traditional processes done by phone, on paper or by fax is progressing rapidly. MISUMI has increased the "digital ratio", i.e., the proportion of business transactions that are completed using electronic channels, to exceed 70% in recent years. There are standards that a market participant must master. In addition, customized products and services are playing an increasingly more important role in the market. Suppliers must be able to adapt quickly to the changing needs of their customers.

These are very high market requirements. What do you think are the essential steps necessary to gain a foothold in e-commerce and to succeed?
JG: What's important: "Getting the basics right first!" Data, processes and the organization must be digitalized today. Indispensable are robust, flexible and open system architectures, which are often only available in the "cloud". Another key is the product data quality for creating good, relevant content, but also for transmitting the "digital twin".

Where is the e-commerce journey heading?
JG: The integration of suppliers such as MISUMI into the supply and value chain will increase. To deliver products and services on the spot, such a digital integration must become standard in the future. It will not be enough to simply be present in the market. Instead, companies will be required to develop and implement new content and offers in a customer-specific manner, so they can stand out from the competition.

An exciting topic. Let's talk about e-commerce logistics: What do you think are the top three dos and don'ts?
JG: Must do: customer-specific services as well as cross-channel and fast order processing. The don'ts also include the non-availability of goods, the deviation from indicated delivery times or even the delivery of wrong products.

The new Frankfurt MISUMI distribution center has a capacity of around 450,000 items within an area of 10,000 m². What were the special requirements for this logistics center?
JG: From an e-commerce provider, customers expect availability of the offered products and a short delivery time. Products within the warehouse in Frankfurt are deliverable to our customers in Europe within one day. In addition to in-stock products, i.e., standard components from in-house and third-party production, our make- to-order (MTO) components also pass through the logistics center. MTO parts are primarily produced in Japan, China, and Vietnam. However, for the customer, the various procurement channels should not play a role. So, all goods are consolidated within the warehouse in Frankfurt for custom shipments, regardless of their origin.



Automation certainly played a role when planning your logistics concept. Do you think automation is a must?
JG: The innovation cycles in mechanical engineering will continue to become shorter. Accordingly, the amount of time our customers have to develop their products is being consistently reduced. Therefore, our motto is: "It's all about time." At MISUMI, the high share of cross-docking business (more than 50 %) requires a very individual procedure. To handle MTO components, we follow a very strict principle: Delivered products are brought to a consolidation area as soon as they arrive. There, they are picked individually for each customer along with items from the warehouse. Once an order is complete, all items are shipped to the customer on the same day.

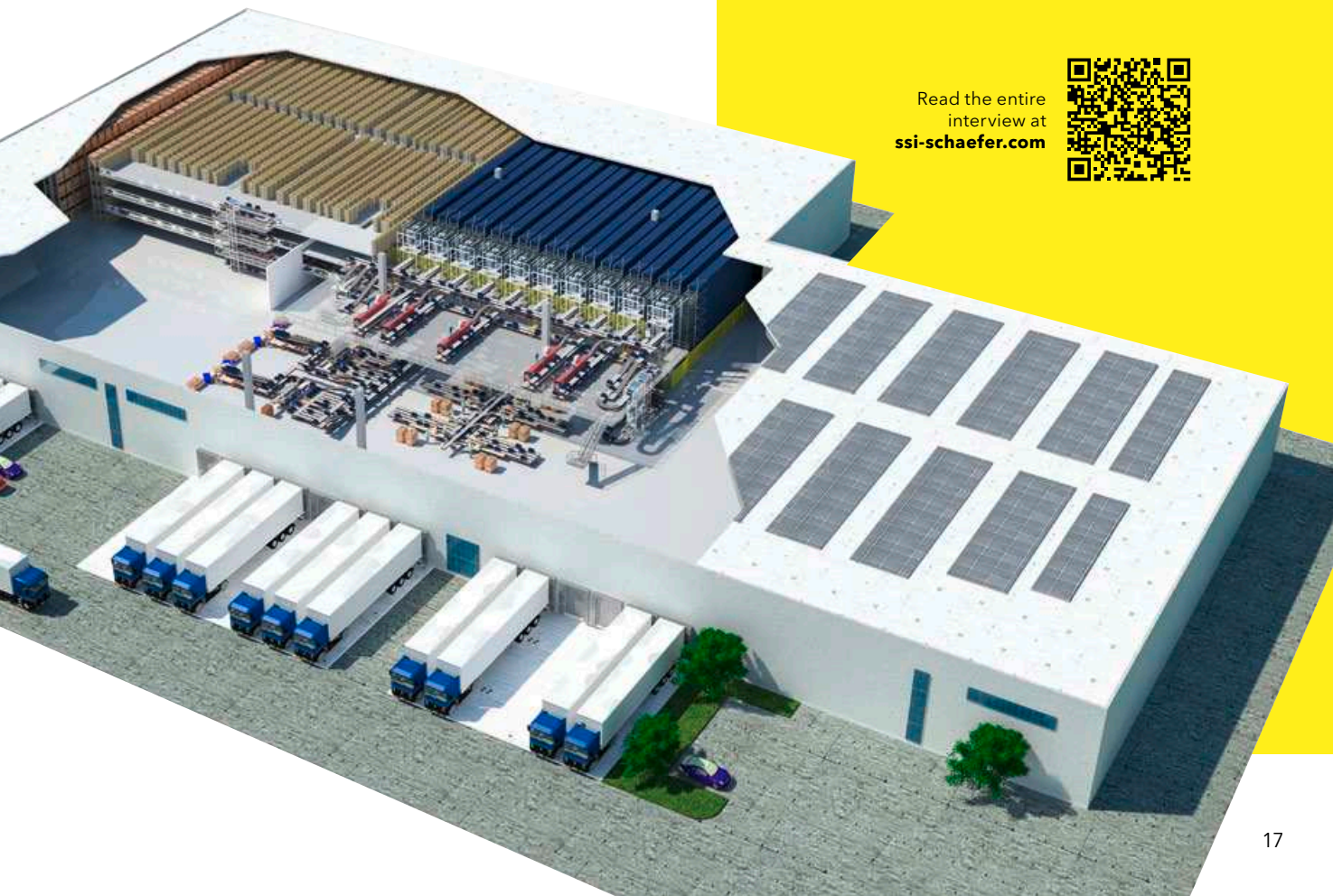
This complex process is difficult to implement without automation considering an anticipated number of approximately 450,000 SKUs in stock and 20,000 shipments every day. Still, in general automation is not a must. We manage about 250,000 SKUs in a 4-story shelving system from SSI Schaefer, which we continue to do manually. However, this storage area is connected to the conveyor system on every level, so the goods are automatically transported to and from there.

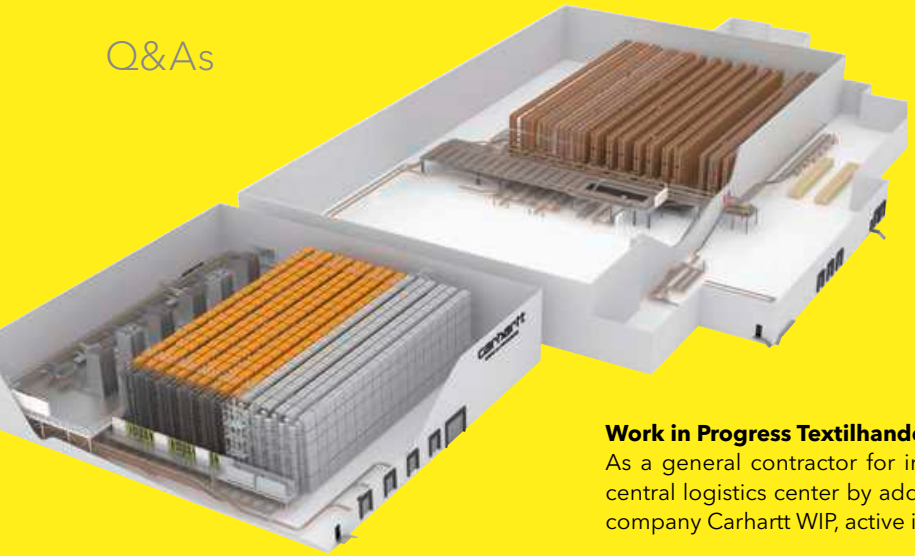
And what are the next steps in this project?
JG: The assembly work in the logistics center is progressing well. We use WAMAS® logistics software to handle the coordinated process control of the material flows. Generally, automation will be completed by the end of October. The test phase, commissioning and the go-live process for the entire system will be completed in March 2020. **>>**

Jörg Gonnermann
General Manager
Logistics Service Platform

MISUMI Europa GmbH
The global manufacturer and leading supplier of mechanical components and indirect materials for special-purpose machine engineering and assembly automation has commissioned SSI Schaefer to implement a 10,000 m² large logistics center in Frankfurt/Main, which is customized for the company's e-commerce strategy and future growth targets.

Read the entire interview at **ssi-schaefer.com**





Wolfgang Heldt
Head of Logistics

Marc Lohausen
Head of E-Commerce

Work in Progress Textilhandels GmbH (Carhartt WIP)
As a general contractor for intralogistics, SSI Schaefer is expanding the central logistics center by adding a hall of about 4,000 m² for the fashion company Carhartt WIP, active in both B2B and B2C business.

AUTOMATION IS AN ABSOLUTE MUST

In the following, Wolfgang Heldt and Marc Lohausen (both from Carhartt WIP) report on the mounting challenges facing the fashion industry since the rise of e-commerce.

Mr. Heldt, which business model are you pursuing in terms of your sales channels and how important is e-commerce to your (sales) strategy?
WH: With our omni-channel strategy, we supply 70 of our own Carhartt WIP stores (retail) and eleven outlets worldwide, while we manage the growing B2C volume with our online shop. Since our decision to engage in e-commerce, this distribution channel has grown very dynamically and in double digits. Accordingly, this area is given our highest priority. At the same time we observe the market and demand maximum flexibility from our logistics division. This is the only way we can respond quickly to market developments and changing customer requirements as well as design the best possible concepts and processes. Therefore, we developed our logistics center with SSI Schaefer to be modular and expandable.

Does flexibility in B2C business mean, for example, being able to respond to demand peaks on Christmas or Black Friday? What (logistical) challenges do you encounter in e-commerce compared to the traditional retail business?
ML: The complexity of an e-commerce order in relation to returns is certainly as challenging as managing different transit times, packaging issues, etc. For our logistics center, we ultimately re-designed the material flow around B2C shipping, returns processing and the special handling area (VAS). In doing so, the system technology of B2B shipping is considered and incorporated to a large extent.

It seems the market places high demands on e-commerce platforms.
ML: Absolutely. Businesses need to maintain the same level of services 24 hours a day, 365 days a year. And, in our case, this level of performance must also be maintained to uphold our standard as a premium brand.

Who or what determines the dynamics and development of e-commerce?
ML: Primarily, I think it is the continuous expansion into a "mobile" world, but also the way in which the various touchpoints (e.g. social media, brick & mortar shops, marketplaces, Google) become increasingly linked between brands and customers. Customers expect to be able to enjoy their stationary shopping experiences (e.g. advice, service) online as well.

Based on your experiences, what would you advise companies that want to enter the e-commerce business?
ML: You should only venture down that path if the entire organization can become excited about digitization and its complexity.

In working with SSI Schaefer you rely on automated shipping buffers, among others. Do you think automation is a must in e-commerce logistics?
WH: Definitely, yes. Automation is an absolute must to achieve the required performance while keeping costs down and providing perfect services in all areas. For example, our process for moving goods from the ramp to the miniload for storage occurs without any manual intermediate steps. To move goods out, we also rely on semi-automatic solutions that guarantee high throughput while maintaining ergonomic workflows.

Mr. Heldt, another look at the developments in the years to come: What does the future of e-commerce look like – in general and in logistics?
WH: Well, I think e-commerce will become a standard shopping channel that is no longer reserved for a specific age or target group but will be used by everyone. E-commerce is currently one of the biggest challenges for logistics specialists!

BE INFORMED WAMAS® LIGHTHOUSE

With conventional warehouse management systems, only a single – albeit important – aspect of the system is shown: the purely technical situation. Traditional visualization systems are not capable of meeting the current and future requirements of an intralogistics system and are therefore no longer adequate sources of information upon which to operate an installation. Other important aspects, such as the material flow or the comparison of key performance indicators (KPIs), are not usually considered in sufficient detail.

To complicate matters further, it is often the case that an intralogistics system is actually a conglomeration of several systems from different manufacturers all interacting with one other. In order to operate this web of systems as efficiently as possible, it is essential to have an IT tool which can not only read all the data from each of the various system sections, but also to prepare and present this information quickly and in accordance with the role of the decision maker.

Therefore, we decided to provide a "central point of information" for installations, which combines quicker technical troubleshooting with the provision of logistical information. Following market analysis and intensive research activities with the respective user groups, the four key requirements came to the fore: The software should ensure full access to both internal and external interfaces and should allow the use of platform-independent terminal devices. Moreover, users favor role-based display concepts and a modern, modular architecture that can be expanded over time.

The result is called WAMAS Lighthouse which has been designed as an online information platform with an open interface concept. Its modular structure means it can be scaled in line with demand while the role-based information can be displayed in a user-centric manner.

System visualization module
Operators can maintain constant control over their intralogistics solution thanks to the WAMAS Lighthouse visualization module. It provides all the necessary information about the current technical condition of every component in real time. Visualization is based on a topological view of the entire system. The continuously adjustable zoom down to component level brings ever more details into view. When you select a component, comprehensive data is displayed. Depending on its type, information such as the drive as well as congestion state, and loading units are displayed. WAMAS Lighthouse is powerful and grows with the complexity of the system. Features are:

- Visualization of all conveying, warehouse, and picking technologies
- Immediate notification of system failures
- Error statistics and event logs
- Component availability
- Detailed views and overviews

Material flow representation module
By providing an abstract representation of the entire system, WAMAS Lighthouse can display a clear overview of all processes and bottlenecks. This view forms the basis for decisions to exploit the full potential performance of the intralogistics system. Features are:

- Real-time display of material flow indicators
- Organization in multiple levels of abstraction (also a summation of material flows)
- Detailed information easily accessible at the click of a mouse

Key performance indicators
WAMAS Lighthouse gathers all the relevant KPIs of the material flow system and the order processing. This data can be linked as appropriate and visualized as required. Among the KPIs generated from these data are storage ratio, material flow performance, degree of order completion, and picking performance.

Thomas Klingert
Head of Product Development
WAMAS® Lighthouse at SSI Schaefer

Integration platform for intralogistics systems
WAMAS Lighthouse is an open system that can integrate data from all existing IT and control systems of an intralogistics installation. Using modern technologies and interface concepts, it connects all elements from the automation level to the ERP system. In other words, Industry 4.0 is already the reality. For the operator this opens up the following key advantages:

- Complete integration of control and management systems from SSI Schaefer
- Standardized and open interfaces for third-party systems
- Supporting state-of-the-art interfaces such as OPC UA, WebServices, and WebSockets

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HOW DSV MET E-COMMERCE DEMANDS FOR CLIENTS DURING PEAK SEASON

With the exponential demand of consumers shopping online, DSV needed to increase capacity to accommodate their clients' e-commerce growth. DSV, a global 3PL transport and logistics company, enlisted the help of SSI Schaefer to design and implement an automated solution for e-commerce that would enable greater capacity within an existing facility.

Innovation at DSV resides at the highest levels within the company where they have an outlook of all our potential innovation concepts. DSV tracks, assesses, tests and adopts several concepts on an ongoing basis. The SSI Carrier solution is part of the DSV innovation road map.

Before implementation, SSI Schaefer evaluated the project to ensure DSV could continue its normal fulfillment operations during the installation phase. A significant challenge was that the solution had to fit within an existing operation. The SSI Carrier solution not only allowed for the existing operation to continue, it enabled the e-commerce capacity growth that DSV needed to ensure both a smooth and efficient online fulfillment system.

Seasonal peak volume with special promos

Online retailers need to leverage every possible avenue in closing an e-commerce sale. Special promotions, coupled with added value samples, help to maximize sales. Distribution fulfillment needs to keep up with capacity during these seasonal changes. DSV relied on SSI Schaefer to help meet these peak demands.

Easy conveying and sortation help drive existing e-commerce business

The process starts with batch picking throughout the warehouse. Product is put into SSI Schaefer totes and are taken to an automated guided vehicle (AGV) transfer station. The AGV WEASEL® transports the product to the induction station. Once the item is scanned, the individual products are placed into the SSI Carrier solution. The pouch then moves to the matrix sorter where orders are sorted and sequenced before pack-out. Once moved to the pack-out station, the order is packed and shipped direct to the customer.

Watch the video for more information and insights at **ssi-schaefer.com**

CAIBA: CHANNEL STORAGE SYSTEM WITH SSI ORBITER®

Optimize storage space and reduce operating costs

For Caiba, the leading manufacturer of PET preforms and containers for food, household products and personal care, SSI Schaefer has successfully developed a channel storage solution for optimizing pallet storage and logistics processes in Jaén. The compact, semi-automatic solution consists of a self-supporting rack construction in combination with the SSI Orbiter. It enables automated pallet handling as well as optimum space utilization.

The new 2,000 m² warehouse will have space for 2,349 euro and 1,971 industrial pallets, each with a maximum load capacity of 800 kg. As part of a First In-First Out (FIFO) strategy, Caiba benefits from a high storage capacity in addition to a reliable inventory control.

"We chose SSI Schaefer as a partner because the company has extensive experience in intralogistics projects and uses state-of-the-art technology. The project is being implemented with the goal of improving our efficiency and service in the market."

José Luís García, Logistics Director for Caiba Group
Brígido Medina, Planning and Logistics Director

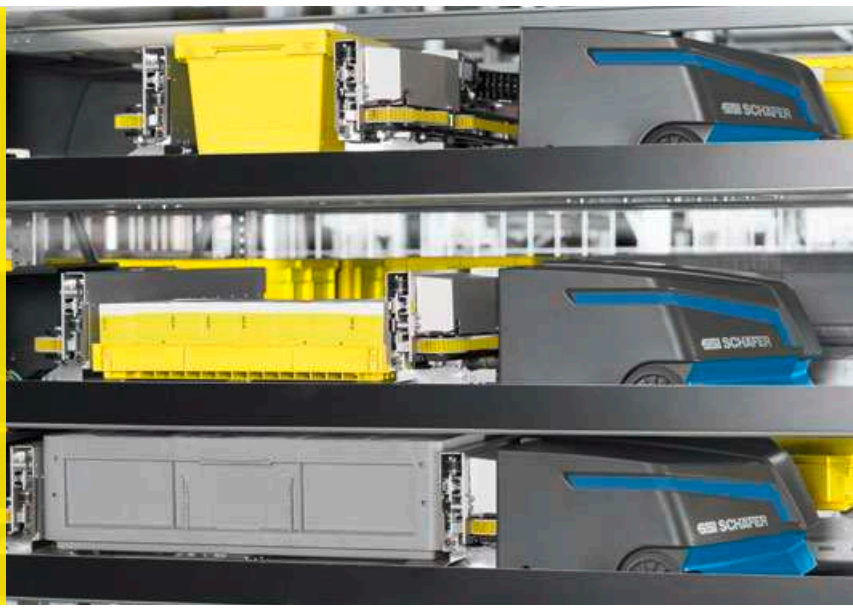
Safe, fast, intelligent, connected

Channel storage systems are genuine miracles when it comes to space and they deliver convincing results especially when it comes to storing large volumes of similar items. Harnessing maximum performance from optimal space utilization requires highly dynamic shuttle vehicles in the channel storage system. With its latest generation of SSI Orbiter, SSI Schaefer is improving its current solution to make it even more efficient and flexible and has both semi-automatic and fully automatic systems that achieve greater availability, service quality and supply capability.

In semi-automatic applications, when connected to a docking station, the innovative SSI Orbiter offers optimal utilization of space as well as extremely high flexibility, maximum personal safety, sustainability and ease of use in the channel storage system. It also enables vastly improved pallet handling efficiency.

Unlike a conventional single or double-deep high bay warehouse, a fully automatic channel storage system manages to use more storage space and therefore helps to minimize overheads. An efficient energy management complements this system and turns it into an interesting alternative to the semi-automatic application.

EXPANSION OF THE ARVATO DISTRIBUTION CENTER, A PUBLISHING HOUSE LOGISTICS SPECIALIST



The VVA (Vereinigte Verlagsauslieferung) based in Gütersloh (Germany), which belongs to the Bertelsmann subsidiary Arvato Supply Chain Solutions, has commissioned SSI Schaefer to implement a shuttle warehouse, which has been designed according to the patented 3D-MATRIX Solution® including the latest shuttle technology.

From the three distribution centers in Gütersloh, Verl and Gilching, Arvato Supply Chain Solutions supplies retailers and readers with books, DVDs, Blu-rays, magazines and games from over 200 publishers via VVA. About 100,000 different items are stored in the central logistics center in Gütersloh. The share of online commerce is growing rapidly. The logistics center in Gütersloh had reached its capacity limits as a result of increasingly smaller delivery volumes per order and a growing number of items. With the expansion stage for automated contract manufacturing, the company is focused on future growth and order processing in omni-channeling. The expansion is considered a follow-up project to an automation solution that SSI Schaefer successfully implemented for Arvato in 2006. At that time, a 4-aisle miniload with 24,000 bin storage locations, a shelving system with 14,000 storage locations and 24 Schäfer Carousel Systems with around 26,000 bin storage locations for highly dynamic individual parts picking were built in Gütersloh.

The new 2-aisle shuttle warehouse, which will be built right next to the existing warehouse, will provide 38,000 storage locations for LTF 6220 load carriers (600 x 400 x 220 mm) from the SSI Schaefer container program. This will expand the capacity of the automatically available bins to more than 60,000 storage locations. The design of the storage cube for the new shuttle warehouse is based on the 3D-MATRIX Solution by SSI Schaefer. This gives Arvato a future-proof solution for automated storage, buffering and integrated sequencing of order processing. In the future, 84 integrated SSI Flexi single-level shuttles will facilitate efficient storage and retrieval processes. 20 integrated matrix lifts will ensure fast material flows on the vertical system level. The shuttle offers maximum performance with maximum energy efficiency. Arvato can flexibly handle a wide range of requirements by combining the flexible shuttle system with the innovative 3D-MATRIX Solution in a custom system concept. In addition, the number of goods-to-person picking stations will be increased by 60 %. Up to four picking orders can be processed in parallel at the five newly developed ergonomic picking stations that are integrated as part of the 3D-MATRIX warehousing solution.

"With the new warehouse, we are significantly expanding our capacities, and in doing so we are creating space for new customers by the end of the year," explains Stephan Schierke, long-time CEO of VVA at Arvato, with respect to the expansion goals. "We are pleased that we are once again able to implement this project in partnership with SSI Schaefer." The modern logistics system is planned to be completed by fall 2019.

REUSABLE CONTAINERS ARE THE FIRST CHOICE

The current discussions about climate change and how to handle plastic waste are increasingly influencing social thinking and action. As a result, in more and more companies environmental and sustainability aspects are playing an important role in investment decisions. This also applies to packaging solutions in intralogistics.

With smaller load carrier and packaging units, many companies rely on disposable cardboard boxes or plastic packaging. What is initially perceived as a quick and easy solution causes large amounts of waste, and even environmentally harmful substances, after use. In addition to the worldwide effects of plastic waste, the increasing legal requirements also require a paradigm shift. The better solution? Reusables transport systems. After all, they pay for themselves over their entire life cycle, last for years and can be completely recycled.

In addition to the sustainable production of long-lasting products, SSI Schaefer also applies an integrated long-term approach that extends beyond the life cycle in terms of the ability to recycle used containers. With an appropriate compensation model, financial incentives in favor of recycling can also be offered, providing for a win-win situation for all sides.

> **We already pay attention to environmentally friendly plastics, additives and colors when selecting raw materials.**

Thomas Jettkant
Head of Project Sales Customized Packaging
at SSI Schaefer

Intelligent and Safe Transport of Products

In addition to the sustainability aspect, durable and sturdy plastic containers offer additional advantages: In particular, they ensure a trouble-free and accurate flow of the semi-automatic and fully automated logistics processes, and the containers securely protect sensitive products from damage and electrostatic discharge. They can also be stacked in a stable and space-saving fashion.

Especially in view of international production associations and affiliate networks, container labeling is essential to keeping track of the container inventory in circuits of this kind. In addition to EAN (European Article Number) bar codes for logistical circuits and automatic applications, SSI Schaefer also offers the "Internet of Bins" (IOB) concept, which involves marking containers with a QR code for tracking at the factory. The code leads to a landing page where a variety of information on the content and circulation of the container or contact persons can be stored making the processes transparent and easy to understand.

Early on, SSI Schaefer has adopted the guiding principle of "Green Logistics". The company develops sustainable systems and solutions, designed for energy and resource efficiency, e.g. storage and retrieval machines with minimized energy requirements. In addition to measures for high environmental compatibility, SSI Schaefer is also consistently pursuing the concept of sustainability in social terms with regard to safety and ergonomics.

INDIVIDUAL PACKAGING SOLUTIONS FOR EXCELLENT PROTECTION

Packaging solutions can be customized to ensure greater safety for products in series production. For example, SSI Schaefer offers special custom (bespoke) packaging solutions for the handling and transport of highly sensitive products, which are precisely adapted to the specific product dimensions and are also suitable for automatic handling. The carriers, which are manufactured individually using injection molding or thermoforming processes, provide maximum protection and positioning accuracy for the packaged goods.

Märklin
Quality and value retention are top priority at Märklin, a world-renowned manufacturer of high-quality metal toys and the market leader in the European model railroad industry. The solution for transporting the high-quality and sensitive products is an individually designed packaging system that Märklin and SSI Schaefer have spent more than two years developing together. The stable, flexible and lightweight load carrier can be easily adapted to the many products and their geometries.

"We chose SSI Schaefer as a partner to develop a suitable container solution. We wanted to have someone on our side who is the market leader in this segment, takes our concerns seriously and knows what they are doing."

Michael Ludwig
Head of Department
at Gebr. Märklin & Cie. GmbH

Rowenta
SSI Schaefer has written another success story – this time with the well-known consumer goods company Rowenta. The production facility in Erbach, Germany, is considered one of the most modern iron factories within Europe. Relocation of parts production from Asia to Germany made it necessary for the company to heavily invest in automation production. The household appliance manufacturer worked with SSI Schaefer to develop a custom (bespoke) packaging solution to meet the high-quality demands of customers. During the production, robot handling is used to transport sensitive components throughout the production process. This process ensures high-quality products to end-user consumers.

DURABLE CONTAINERS OVER DECADES

For over 25 years, the drugstore chain dm has trusted in the plastic boxes from SSI Schaefer and has set up a closed reusable cycle to supply its more than 3,500 stores.

As early as the mid-1990s, SSI Schaefer delivered the first containers to dm in Austria and some of them are still in use. Since then, the drugstore chain has continuously expanded the system via its European subsidiaries.

The robust containers, which are precisely matched to the Euro pallet dimensions, are used by dm for storage, order picking, and transport for the partly sensitive drugstore articles and can be folded together to save space when returning empties. The use of returnable containers opens numerous advantages and potential savings for dm and also supports the company's concept of sustainability. The sustained growth and dm's expansion led to continuous expansion and optimization of the processes. The first fundamental expansion of the logistics center took place in 1995. In 2009, a fully automated pallet and container high-bay warehouse was set up in preparation for future Logistics 4.0 requirements. After positive experiences in dm's previous projects, SSI Schaefer was awarded the order for the steel construction of the plant with 57,400 container storage locations and 3,200 pallet storage locations. To ensure continuous processes for order handling, SSI Schaefer integrated the controls of all components located in the warehouse into the logistics software WAMAS®. In addition to the basic equipment of the warehouse, dm ordered another 60,000 plastic containers.

The containers, type FKE 6320, act as both source and target container for storage and picking at the Enns distribution center. Conveyor technology automatically guides the source container from the miniload to the respective work stations according to the goods-to-person principle. Up to 3,500 order positions per hour are removed there and picked directly into the target containers, which also serve as transport containers. Automatic container erectors upstream ensure that the employee receives ready-to-use containers.

"Their extensive container product line, production flexibility, and punctual delivery of large quantities in addition to the quality of their plastic bins make SSI Schaefer a reliable partner at our side."

Herbert Scheiblauer
Manager of Transport and Warehouse Organization at dm Austria

RECOGNITION: GERMANY'S MOST INNOVATIVE COMPANIES

SSI Schaefer was again included in the circle of "Germany's Most Innovative Companies" and took first place in the logistics sector. On behalf of Focus and Focus Money, DEUTSCHLAND TEST and the IMWF Institut für Management- und Wirtschaftsforschung (Institute for Management and Economic Research) investigated the 5,000 strongest companies in Germany as part of the study "Germany's Most Innovative Companies". The review of the innovative power of companies gave consideration to criteria such as innovation, investment, research & development, new products and technology.

BEST OF INDUSTRY AWARD: SSI FLEXI

This marks the fourth time that excellent innovations from this industry have been awarded the "Best of Industry Award". The award in the category "Material Flow" was presented to SSI Schaefer for the innovative SSI Flexi Shuttle after having received the "German Design Award" in early 2019. A peer review from high-ranking experts and readers of the industrial magazine MM MaschinenMarkt cast their votes over several weeks regarding the most outstanding products in the industry. Only companies with products that had already received a prestigious award in 2019 were eligible.

With its intelligent functional variety allowing storage for a wide range of transport units and dimensions up to 50 kg, the SSI Flexi has proven to be quite impressive - even under frigid conditions. "The modular design allows custom system concepts within various industries, offering excellent space utilization and the utmost performance, while at the same time a high level of flexibility and scalability," said Andreas Koch, Head of Product Management Giebelstadt at SSI Schaefer.

BOSCH GLOBAL SUPPLIER AWARD

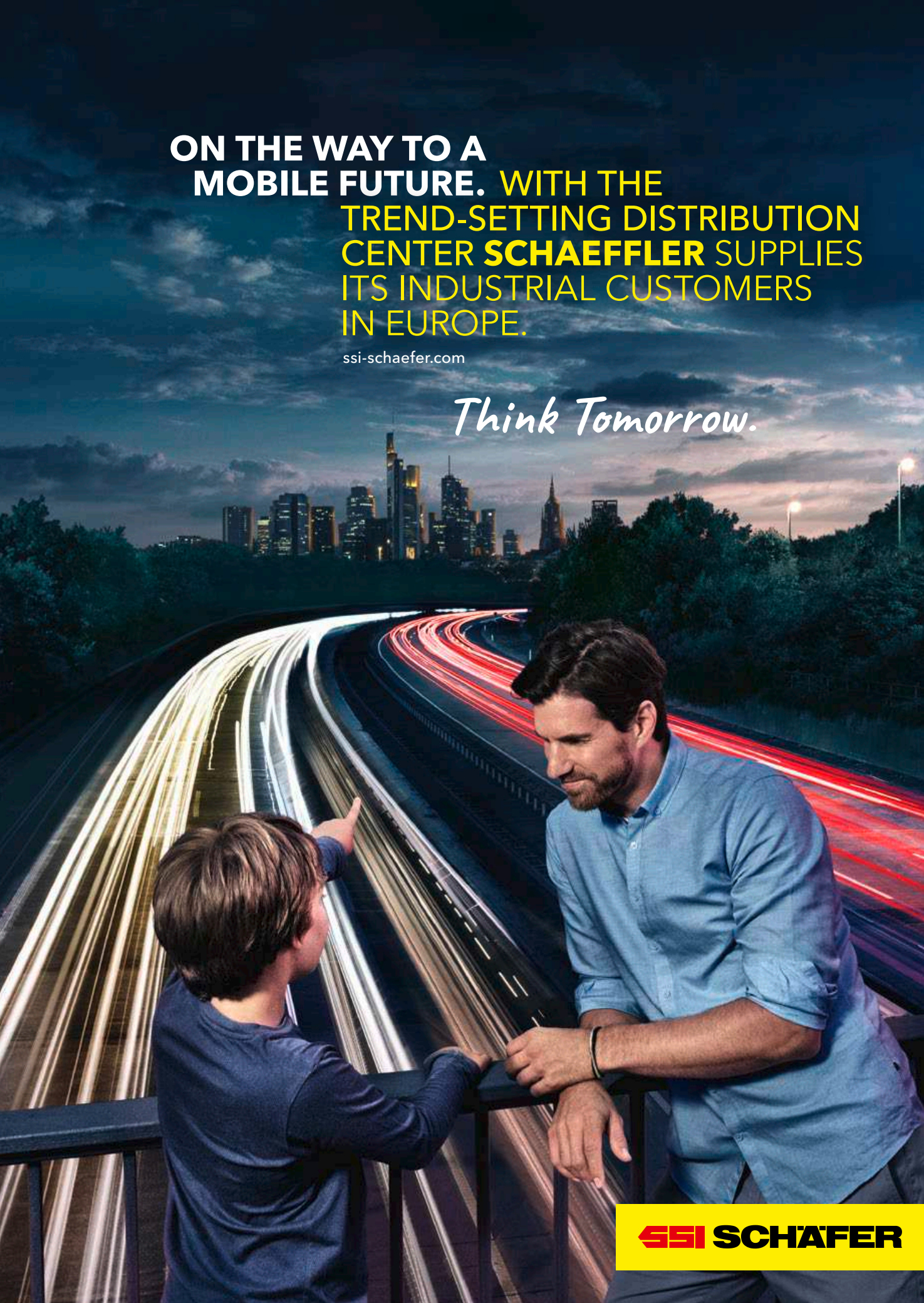
Every two years, Bosch honors the best of their suppliers from around the world with the "Bosch Global Supplier Award". This year, SSI Schaefer received the award in the category "Purchasing of indirect materials", in the field of plastic injection moulding containers. Bosch rewards outstanding performance in the manufacture and supply of products or services – very important are quality, costs, innovation, and logistics. From its roughly 43,000 suppliers, Bosch awarded 47 suppliers from 15 countries.

INVESTING IN THE FUTURE

The strong growth and global orientation of SSI Schaefer result in a worldwide investment boost for the company. New employees, prestigious buildings, and state-of-the-art production facilities. Currently, one of the greatest milestones is the construction of new buildings at the existing locations Giebelstadt (Germany) and Friesach (Austria), which will not only create more space for new employees but will also support the modern corporate culture.

With automation and the complexity of logistics systems increasing around the world, modern Customer Service & Support (CSS) solutions are essential for any business. To meet the high demand and more stringent requirements, SSI Schaefer has more than doubled its number of employees within just a few years: Of the more than 1,500 CSS experts worldwide, 130 team members now work at the site in Graz (Austria), growth that necessitated a move to a bigger space near the Merkur Arena.

"We are growing with the demands of our customers, continuously developing in all things related to technology, expertise and the number of our employees," explains Elie Zita, EVP Customer Services at SSI Schaefer.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