

UPDATE

COMPANY MAGAZINE

No.
30

COVER STORY

Software and IT as success factors for the future of intralogistics

SECTOR CHECK

Deep-freeze intralogistics: ice-cold delivery

BEST PRACTICE

Implemented solutions for higher efficiency and flexibility

IDEAS, VISIONS & SOLUTIONS FOR INTRALOGISTICS

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SSI SCHÄFER

COMMITTED

It is our responsibility and duty to promote the success of our employees, customers and business partners and we reassert these objectives every day with our enthusiasm and commitment. This resolution runs seamlessly through all departments and across all aspects of our work.

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Dear readers,

As you may have already noticed, our company magazine "*Update*" has been given a fresh new look!

We put a lot of thought into how we could better share our deep involvement with intralogistics - a passion that drives us every day as one of the sector's world-leading providers. You are now holding the result in your hands. With its rejuvenated layout and a new editorial concept, we aim to provide you with exciting insights and background stories on internal material flows around the world, while also introducing pioneering ideas and practical project solutions.

The new "*Update*" is not the only new thing at SSI Schaefer. Just like the logistics sector as a whole, our company is making strategic decisions to overcome the challenges of the future. In doing so, we are staying true to our values as a family-owned company and we are pursuing sustainable growth with global recruitment programmes and investment in new manufacturing sites and development centres.

Over the coming years, everything will continue to revolve around the "mega trend" of Digitalisation and the accompanying developments of the Fourth Industrial Revolution. In this climate, software and information technologies are becoming ever more relevant and significant. This was a key factor in the decision to found SSI Schaefer IT Solutions GmbH in January 2017, in which we have pooled and expanded our IT expertise. This IT powerhouse, consisting of over 1,000 experts, makes SSI Schaefer the perfect global partner to analyse, optimise and visualise intralogistics processes and to meet the high technological challenges of the future. With a constant focus on market and customer demands, we are also orientating our sales structure for complete automated systems towards market sectors. A more detailed explanation of the organisational changes and especially the resulting advantages for our customers, as well as much more from the world of intralogistics, can be found in this latest issue of our new customer magazine.

I hope you enjoy reading the new "*Update*". Perhaps we will have the opportunity to meet in person at one of our events and discuss the allure and the exciting challenges of intralogistics. I certainly hope so!

Kind regards,

Klaus Tersteegen

Member of Operational Management Board,
SSI Schaefer



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LET'S **TALK**

LET'S TALK ABOUT MARKETS: MORE LOGICAL MARKET-SECTOR ORIENTATION FOR THE OPTIMAL CUSTOMER SOLUTION

After 80 years on the path to success, SSI Schaefer is today a leader in planning and implementing comprehensive logistics systems including software solutions. The market, its demands and the needs of customers have changed. Today's customer-driven markets call for a new focus - a sector-specific one. Michael Mohr, Executive Vice President Sales Automation, and Dieter Zeiml, Senior Vice President IT Realization, discuss the new orientation of the sales organisation and perspectives in intralogistics.

Michael Mohr: Our sales team is globally active, seeks to make contact with customers and sells solutions and products. In recent years, we have been noticing a new movement - a transition towards more holistic system requirements and, relating to this, ever more specific and demanding customer expectations. For example, a brewery has entirely different requirements of its warehouse logistics to an eCommerce fashion company; pharmaceutical companies are likewise completely different. For this reason, it is important to speak our customer's language and also to recognise their market situation and to develop individually-tailored solutions. Whether it's the IT or the hardware, we have to develop the right range of services for each customer and respond to their demands. To achieve this, we have specialised in the following six market sectors, in which we combine specific expertise: food retail, food & beverage, retail & wholesale, health-care & cosmetics, industry and fashion.

Dieter Zeiml: IT means analysing our customers' intralogistics processes to then automate, support, optimise and visualise them using our software solutions. Our WAMAS® logistics software can do all this, making it an outstanding, scalable solution for all six market sectors. Let's take the example of eCommerce; this is a driving force and is at home in all market sectors. There is no such thing as a universal "eCommerce functionality". You have to differentiate between market sectors. With our new orientation, we are able to develop the exact solution that the customer needs - even for eCommerce. We can compose the right package of services for the individual demands.

Michael Mohr: Within the framework of this orientation, we are carving out market segments that we can serve professionally, globally independently and optimally. In doing so, it is important to us to use synergies from different projects in the global market sectors. Fashion customers in Asia can, for example, benefit from our experiences with customers in America. This concentrated expertise will also be supported by local experts in the hubs - our national subsidiaries. Eventually, the central expertise in our global sales organisation will be completed by the expertise of the individual regions - for the benefit of the customer.

Dieter Zeiml: Our customers follow different business models and therefore focus on heterogeneous specifics. For each of them, different processes take precedence, to which the software solution must also be adapted. We have recognised this and now take it into account in our approach to market sectors.

Michael Mohr: Both in sales and IT, we are now much closer to the customer and so can respond to their requirements even more individually. What distinguishes us at SSI Schaefer, is that as a system provider, we develop unique solution packages. And that's exactly what the market expects. Our product portfolio includes all kinds of modules and components that can be integrated and that are associated with each other thanks to intelligent and scalable software solutions. As a general contractor for construction and intralogistics we realise a turn-key system solution. Customers want to know how the machines are set up and linked to each other or precisely which processes have been integrated. But most important is the final, working solution, and that is exactly what we offer the customer.

Dieter Zeiml: This is true both for the hardware and the software. Even if the same components are used in individual solutions, the focus is on the specific customer solution. Of course, synergies are used between different market sectors: there are functionalities that everyone draws on, but there are also specific applications. We have the particular advantage in IT of being able to interact between sectors, as all our software engineers speak the same language and so can act across sectors. The sector-specific language is a particular feature that requires expertise to transfer the requirements to our WAMAS logistics software and ultimately to the customer solutions that are being implemented. We are now implementing this way of thinking and acting throughout the entire SSI Schaefer Group.

Michael Mohr: As SSI Schaefer, we are now very focussed, with our specific orientation towards market sectors. Our aim is to even better understand market and customer demands, to take on new challenges and to continue to successfully implement our projects. Opting for this structure has already proved to be the right decision after only a short while and will confirm and strengthen our leading market position. To that effect, we have already been able to form clusters that assign special products to the market sectors. The trend towards product developments for specific sector requirements must also be recognised. With this approach, we are looking ahead to the future with optimism and are looking forward to further exciting topics in the individual market sectors.





DEEP-FREEZE LOGISTICS: ICE-COLD DELIVERY

Because of the growing trend towards convenience products and the corresponding increasing range of items, deep-freeze intralogistics for the retail sector. Warehouse solutions for temperature-controlled foods require processes with a high degree of availability and a quick turnaround time. The whole process chain is gaining momentum.

Consumers' eating habits and personal living situations have changed considerably in recent years. However succinct on paper, this statement has an enormous influence on the entire food industry. The increasing number of single-person households, the rising consumer demand for foods to be available regardless of the season and the growing trend towards convenience products result in the demand for a much broader range of items. In order to be able to satisfy these requirements, temperature-controlled foods - in other words frozen foods and fresh produce - have consistently gained importance in the retail sector. The prerequisite for this is an optimally organised and closed cool- and deep-freeze sequence along the entire supply chain.

Deep-freeze intralogistics plays an important role in the overall distribution process. The required quantity of goods for retailers is pooled in central warehouses. The cold warehouses serve as buffers between industry and retail - seasonal or weather-related sales fluctuations are balanced out here. Deep-freeze logistics also presents the operator with additional challenges. Products are temporarily stored and thoroughly chilled, during which strict BBD specifications, HACCP hygiene standards and traceability - required by many customers - must be guaranteed.

Warehouse solutions such as these require processes with a high degree of availability and a quick turnaround time. Frequently changing product ranges and rising order numbers, with ever smaller batch sizes, demand flexible, (semi-) automated systems with minimal space requirements. Demands from politicians and society for more environmentally friendly logistics and a reduction in CO₂ emissions are also drivers towards automation. In addition to purely environmental aspects, modern high bay warehouses also ensure more cost-effective

warehousing due to reduced energy costs. Increasing labour standards lead to a reduction in staff efficiency, particularly in the picking area. As well as time-intensive manual picking tasks, up to 65% of the total warehousing costs are incurred here.

SSI Schaefer solutions bring support, flexibility and reliability as well as speed and traceability.

Modular system components and holistic solutions ensure optimal process workflows. Taking into account the extreme environmental influences (especially in the deep-freeze sector), the ergonomic workplace conditions are optimised using the latest technologies and bespoke solutions.

The high technical demands on the logistics processes for temperature-controlled foods, growing price pressure and political developments all contribute to shaping the market. Agreements between the political and economic spheres, as well as industry associations, also play an increasingly important role in this area in order to establish uniform standards and transparent, efficient processes outside the warehouse.

Frozen solid? Not at all - deep-freeze logistics is constantly developing. Trends such as online food retail are also spreading to frozen products. Currently, internet orders and the individual dispatch of frozen goods only account for a small proportion of overall transactions. But one thing is for sure: in future they will open up new aspects in logistics, which will demand innovative intra-logistics solutions.



**REFRESHINGLY
EFFICIENT**





SSI Schaefer has brought the intralogistics processes of drinks manufacturer Vitaqua up to date with state-of-the-art technology, while also increasing the capacity and efficiency of the system. WAMAS® logistics software controls and optimises all the warehouse processes.

Breuna, Germany. Although the drinks industry is one of the few commercial sectors that has not been affected by developments in eCommerce, manufacturers must still react to major trends such as digitalisation. On the one hand, the information flow in the supply chain must be continuous and all relevant data must be made available (in real-time where possible) to all parties involved. On the other, the optimisation potential between manufacturing and consumption must be exploited as fully as possible in terms of technology and cost-effectiveness, in order to ensure long-term flexibility and competitiveness. Vitaqua GmbH in Breuna faced that challenge.

In 2007, the company began producing and storing mineral water, lemonades and fruit juice spritzers at their site covering 24 hectares. The system was steadily expanded, production increased until 2010 and eventually reached its limits. When the call for tenders was issued, SSI Schaefer was awarded the contract for the expansion project. Ronald Göring, plant manager and authorised representative at Vitaqua, explains the reason behind this decision: "The concept presented to us was an impressive solution tailored perfectly to our requirements, involving excellent expansion options, the use of the available production electric monorail system (EMS) and an optimised software connection. As a general contractor, SSI Schaefer also provided services for the implementation of the entire project from a single source - from the construction of a front building and the high bay warehouse (HBW), including floor foundation right through to automated components and IT."



Storage-retrieval machines (SRMs) from the Exyz generation ensure a total turnover performance of up to 200 storage and 400 retrieval processes per hour, across five aisles, using double-deep telescopic forks.

In addition to the increase in capacity, the manufacturer wanted the expansion project to include the separation of material flows for required materials and finished products. The 40-metre high building provides roughly 26,500 storage locations for double-deep storage.

The logistics software WAMAS manages the new HBW, controls the processes and provides the control centre with a transparent visualisation of these processes. In addition to the EMS control system being expanded to include sensor technology and a new track route, WAMAS also needed to be equipped with interfaces to the production lines and overarching IT system and connected to the customer's control system. The retrievals for distribution are carried out according to the specifications of this overarching IT system via a conveying section in the existing system. Outgoing goods are consolidated here and the goods are then loaded onto HGVs. With the implementation of the expansion project, SSI Schaefer has dramatically improved the material flows.

"The expansion project from SSI Schaefer has tailored our storage capacities to our requirements and separated material flows for raw materials, required materials and consumables for supplying production lines and delivering finished goods. It has also modernised the technology used for our internal transport processes," enthuses plant manager Göring. "This has enabled us to increase our load throughput by roughly 30 % and has significantly improved the energy efficiency of the entire system. It was definitely worth it."



FLEXIBLE, EFFICIENT AND SCALABLE

At its production site in Hochdorf, Switzerland, Bachmann Forming AG relies on the IFOY Award 2016-winning solution using WEASEL® automated guided vehicles (AGV) from SSI Schaefer for its automated internal transport processes. The project, featuring the innovative AGV solution, was implemented within a mere five weeks and has already paid for itself after only a few months.



Bachmann Forming AG supplies customers in both the food and non-food sectors with packaging manufactured using a 'deep-drawing' process.

The articles from the production machines are manually packed into cartons of varying sizes at twelve linked work stations. The cartons are then transported from the production area to the dispatch area via a stock conveying system. "It was not possible to connect the work stations to the conveying system due to the limited amount of space," explains Bruno Skraber, head of sales planning at SSI Schaefer. "Conventional solutions couldn't be used to automate the transport of goods and materials from the production machines to the transfer location on the conveying system."

Maximum flexibility, high levels of efficiency and scalability, a short project and implementation period, and a quick return on investment (ROI) are all benefits offered by SSI Schaefer's WEASEL AGV as a convenient

entry-level to automated transport solutions. These all constituted compelling advantages that won over the Bachmann.CH Group. Their performance has been commendable: switching from manual to automated internal transport processes using the WEASEL saves the company around 7,000 hours a year, which has led to an ROI in significantly less than one year.

The track between the twelve production work stations and the transfer unit to the conveying system measures 175 m in length. Manual transfer stations have been set up at the production machines. Measuring 810 x 420 x 180 mm, the extremely compact automated WEASELS cover this transport distance with ease and with no restrictions. "Due to their compact size, these vehicles can even be used in areas that would not be accessible to ground conveyors," adds Bruno Skraber.

Behind this lies innovative technology that can be integrated into the existing IT and warehouse infrastructures. As a result the vehicles navigate at a speed of up to 1 m/s along an optical lane that can be installed



quickly, easily and in a flexible manner. "If revenue or transport structures change, additional vehicles can easily be integrated into the entire system immediately," explains Bruno Skraber. "The system is designed for maximum flexibility, both in terms of the number of WEASELS used and the predefined track." The Hochdorf

WEASELS handle 120 transport movements per hour. The efficiency of the WEASELS enables them to support Bachmann's prompt delivery service. At the same time they offer the company a high level of flexibility in terms of the automation of their internal transport processes, future growth rates and expansion to the AGV system, while also relieving employees of unproductive, time-consuming transport tasks.



"The low procurement and operating costs, as well as the minimal maintenance requirements, mean the WEASELS have not only paid for themselves in a matter of months, but have also proven to be the ideal semi-automatic solution to the customer's needs."

Bruno Skraber,
Head of Sales Planning at SSI Schaefer

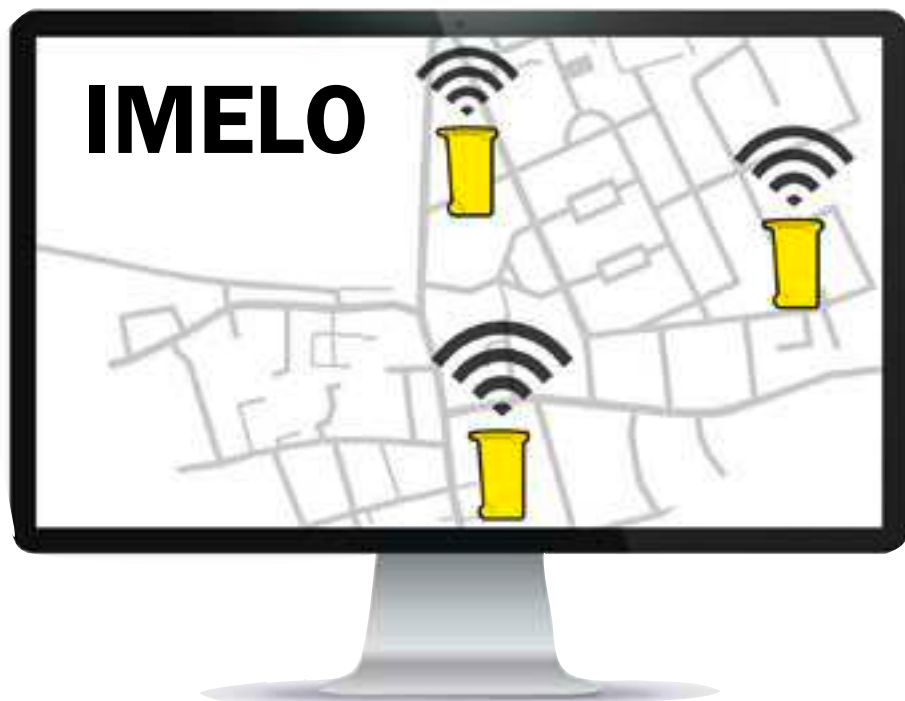


The AGV was honoured with the IFOY Award 2016 and holds the prestigious title "Best of 2016" of the Industry Award.

IMELO: PLANNING AND CONTROLLING LOGISTICS PROCESSES IN WASTE DISPOSAL

ALWAYS ONE STEP AHEAD

Digitalisation for waste disposal logistics and innovative concepts for the future and needs-oriented collection of recyclable materials are areas in which SSI Schaefer excels. In fact, they are core elements of SSI Schaefer's everyday business. With IMELO, SSI Schaefer offers a waste management product platform for optimising waste disposal logistics, which has been developed from the company's considerable experience in the field.



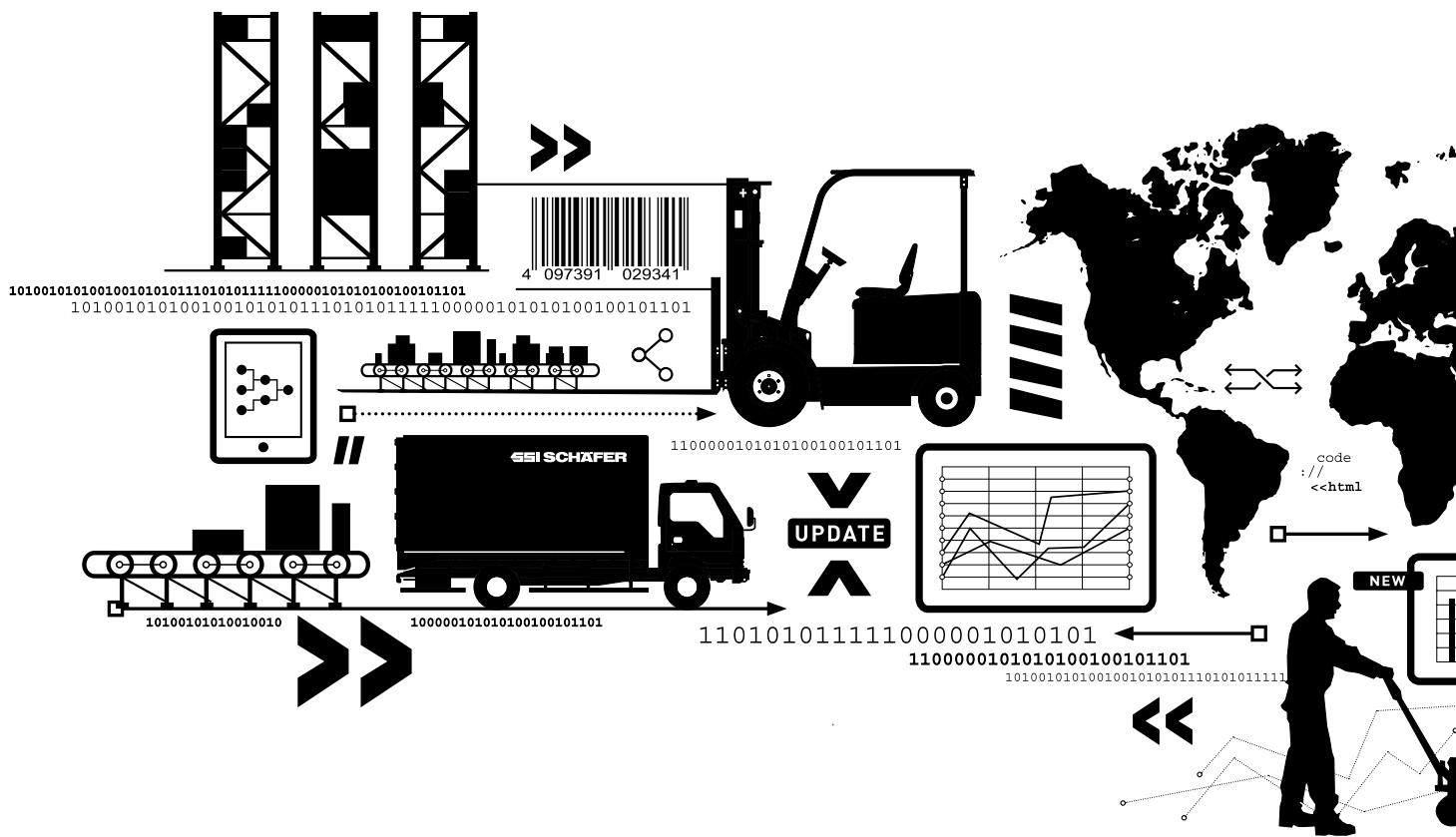


Precise, efficient and transparent planning and control of logistical processes for waste disposal is more important than ever before. The tools and software solutions required for this purpose play a significant role in the success of the tasks at hand. The IMELO portfolio offers a range of innovative expert solutions for commercial and municipal waste disposal orders. With over 1,500 users and 850 systems, IMELO has been closely associated with reliable software and hardware solutions for waste disposal logistics for more than 15 years.

IMELO CONSULT has been developed to define waste disposal logistics that are optimally tailored to customer requirements based on professional advice. The services include transparent support when preparing tenders as well as checking the existing waste disposal logistics setup. An objective assessment of the situation using professional consulting methods and efficient modeling of new waste disposal concepts form part of IMELO CONSULT's approach.

At the heart of the IMELO world is the IMELO DISPO software, which boasts individual software modules with practical functions, making it the ideal planning and control tool for modern waste disposal logistics and electronic order processing. As early as the planning of the bin allocation, maximum levels of transparency are defined. This is then carried through to the downstream modules, such as district and tour planning, material planning, order and stock management, and fleet tracking. All the relevant processes can be planned and controlled quickly and easily.

The solutions from the IMELO FLEET area make processes associated with vehicle deployment and vehicle movements transparent and traceable. From simple vehicle tracking through to holistic telematic solutions with bin identification and weighing, the IMELO FLEET product range offers a solution for an array of requirements. In combination with the IMELO DISPO solutions, vehicle deployment can be controlled in a transparent manner, even in these days of increasingly complex requirements.



IT IN THE FOCUS OF INTRALOGISTICS

The Fourth Industrial Revolution and the Internet of Things are hot topics at the moment. Both have become determining factors in the industrial processes that not only have a significant effect on the production of goods, but also on logistics. The complex, interconnected systems that have come into being between production and storage can no longer be handled without modern, high-tech solutions. As digitalisation has increased, intralogistics has become a technology driver.

As a result of the increasing growth and relevance of eCommerce, retailers are taking logistics into their own hands again. Up to now, many preferred to outsource these tasks to external suppliers. Ultimately, online and offline sales channels and stocks are no longer maintained in parallel, but instead in a combined manner. eCommerce, in all its forms right up to omni-channelling, is changing the preconditions for companies. Individualised production, increased customer expectations, shorter product life cycles and rapidly changing product variety are the result. More frequent yet smaller ordered quantities present the intralogistics sector with the challenge of satisfying the customer's individual requirements.

In order to respond to market conditions, a standardised logistics platform for all sales channels is needed, along with the associated planning, material planning and

control of the logistics processes across all sales channels in a flexible warehouse management system. Where the logistics software is concerned, these trends demand a reassessment by the company. The software is no longer merely a supporting pillar, but instead is of exceptional strategic importance for the internal material flows and processes. Companies are not simply looking for pure software modules anymore; now they need system solutions for specific requirements.

The IT in the intralogistics process used to resemble a patchwork quilt of individual modules. At the start of the transformation process, a logistics module was added to existing ERP systems or separate warehouse management systems were installed. In these traditional systems, each system optimises the area of the supply chain assigned to it. The changes to logistics tasks and the rise in complexity increase the demand for coordination between the individual fulfilment subprocesses.

A superordinate control instance to optimise, control and monitor all data and goods flows along the supply chain is needed, in order to be able to clearly track all relevant goods movements and postings. It is essential to take a holistic approach to controlling the logistics network. All orders, master data, stocks and stock changes, execution instances and the status of every participant must be linked in real time. This enables the supply chain to be actively and fully controlled. In

Video:
"IT solutions
and warehouse
management for
intralogistics"



accordance with digital readiness, the intralogistics must be capable of optimising the preparation of the supply chain strategies and thus analysing the costs in parallel so they can be proactively corrected.

The logistics software must be understood as a complete solution, which, on the one hand operates the system with maximum efficiency and, on the other, rules out potential interface problems. SSI Schaefer stands out with its logistics software, WAMAS®, which is an upgrade-compatible software solution that goes above and beyond this requirement. Another unique selling point is that the solutions can be fully integrated: third-party systems can also be taken into account by SSI Schaefer experts and controlled in a holistic manner.

Thanks to its wide range of products and services and wealth of expertise in consultancy and customer service, SSI Schaefer provides its customers with all the tools they need for their transformation. The answer to the transition from established to customer and technology-driven business models is an "omni-channel fulfilment platform". This will guarantee that the customers' processes lead the way. The goal of the SSI Schaefer solution is to achieve a holistic logistics platform for all sales channels, along with the associated planning, material planning and control of the logistics processes across all channels.

COMBINING THE IT EXPERTISE IN THE SSI SCHÄFER IT SOLUTIONS GMBH

The IT powerhouse, consisting of over 1,000 IT experts, makes SSI Schaefer the perfect global partner to implement optimal and efficient IT-supported processes.



“We want to provide our customers with comprehensive advice.”

A conversation with Franz Bauer-Kieslinger, CEO of SSI Schäfer IT Solutions GmbH, about the significance and strategic areas of activity for IT in intralogistics.

How important is IT in times of digitalisation and the increasingly global dynamic?

The relevance of IT has increased dramatically for us and this can be seen organisationally at SSI Schaefer. Alongside the numerous logistics professionals, over 1,000 SSI Schaefer employees are already working in IT around the world and this number is set to increase. In order to meet customers' needs optimally, we designed the SSI Schäfer IT Solutions GmbH in which we are combining our IT expertise located in Germany and Austria. With our own logistics software WAMAS® and as a certified SAP Silver Partner, we offer customers transparent monitoring and control functions to cater to all their logistics demands. With our solutions we are able to provide optimal integration of the systems into their intralogistics processes.

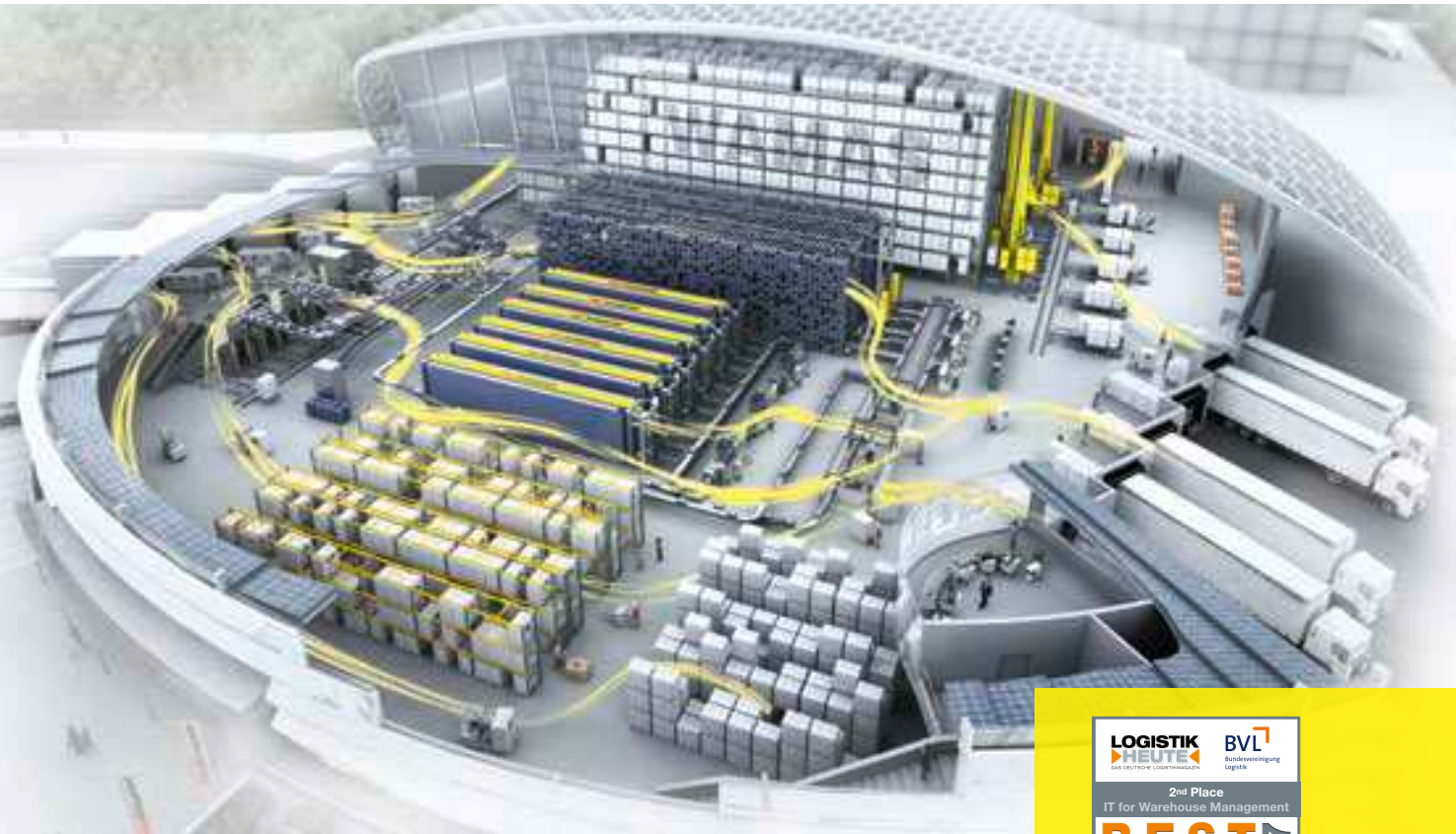
What is essential to giving customers optimal advice and creating the perfect solution package?

That's clear: understanding their business processes. Our main focus is on comprehensive and complete customer care - throughout the entire duration of the project we are there to actively guide and advise. After all, every customer has its own business model and pursues its own strategic

and operational aims. The corresponding demands on the IT structure of the logistics solution also depend on this of course. Designing the solution is always orientated to sustainability for the customer. It is crucial to the customer that we offer genuine added-value and guarantee their competitiveness in the long term.

How does SSI Schaefer go about this and what solutions do you implement?

As well as advising and evaluating our customer's processes throughout the entire supply chain, with the WAMAS logistics software functionalities we cover, orchestrate and synchronise the entire material flow of the intralogistics solutions. At the same time, we deliver a solution that designs the warehouse processes more efficiently by visualising and analysing the relevant key performance indicators (KPIs). It also helps customers to optimise their planning with regards to productivity and efficiency. And with that in mind, there is an extensive range of products on the market and a globally active service network available to the customer. And as a strategic SAP service partner, we support our customers in choosing, implementing and operating all SAP products relating to warehouse management.



WAMAS® LIGHTHOUSE

The high level of efficiency required of process workflows in manual to fully automated storage systems demands their measurability and visualisation. To achieve this, comprehensive information on the current status of the system from the various system components, in real time, is absolutely essential. The new WAMAS Lighthouse information platform from SSI Schaefer is the perfect answer to this requirement. In addition to a topological view of the system, WAMAS Lighthouse also provides additional views, including the key performance indicators of the material flow system and the order-processing status. This new software combines the functionalities of a visualisation tool for all warehouse components with a notification centre for system faults, component availability, error statistics and event logs.

The components and subsystems of the warehouse can be viewed individually and their current status can be checked. All the data is compiled centrally and consolidated accordingly. This means the user is provided with the information in the desired degree of detail, enabling

them to call up a variety of key performance indicators. These include warehouse filling levels, material flow performance, the degree of order performance, picking performance and much more. WAMAS Lighthouse also integrates the data from the connected IT system in the warehouse. A high performance connection from the automation level, right through to the ERP system is achieved by using the latest technologies and interface concepts such as OPC UA and web services.

The web-based interface of WAMA Lighthouse is optimised for various terminal equipment, which ensures a user-friendly and intuitive display from the control centre PC right through to the mobile.

Thanks to the combination of different views and roles, WAMAS Lighthouse generates a clear overview of all the material flows in the warehouse. This forms the basis for optimising and exploiting the full performance potential of the system and represents another step towards the fourth industrial revolution by SSI Schaefer.

ASIA CARVES ITS WAY TO AUTOMATION

Brian Miles, Regional Managing Director (APAC, Middle East, Africa) at SSI Schaefer, has been living and working in Asia for many years and writes articles on the opportunities and risks in the Asian market for *"Update"*.



Asia. The largest continent on Earth and home to over 60% of the world's population. This figure alone signifies the relevance of this part of the world for the global economy. Since the global financial crisis in 2008, the entire Asian economy has benefited from strong growth. Even countries that were comparatively little affected, like Indonesia, Vietnam and the Philippines, record annual growth rates of 5 to 7%. The same goes for India and Thailand. The only exceptions are Singapore and China, whose projected growth rates are lower.

However, the relatively slow development in the economy presented China's market with significant opportunities and the chance to reposition itself within the established structures, to understand the challenges of the market and customers, and to orient itself to them.

China is still the manufacturing centre of the world, but the Chinese economy has witnessed a significant transformation in recent years. Labour-intensive industries have moved to south-east Asia, mainly due to sharply rising wages (by up to 200%). Considering the shortage of labour with the required skill levels and the increasing labour costs, Chinese companies are appreciating and adopting automation far faster than experienced in Europe or the USA in the past. It is significant that Chinese companies are taking over larger, well-known European brands in the Logistics industry, which will also bring some interesting challenges and options: not just for China, but also for the global market.

In keeping with expectations, the middle class in China will see substantial growth. By 2020, the number of people in this social class is projected to reach 300 million. This trend



will also lead to change in the Chinese economy, which up to now was very strong in terms of exports, but will now develop into a strong domestic market. Up to 10 % of Chinese people travel overseas annually. Chinese airlines in particular are benefactors of this, but there are negative consequences too: the airspace is completely overloaded and delays have become the norm.

ECommerce is a buzzword in Europe just as much as in China and across Asia.

Online shopping is increasingly becoming part of everyday life. Forecasts show that in 2020, 891 million Chinese citizens will make more than twice as many online purchases than in 2015. This will amount to approximately 2.17 billion US dollars, which equates to 26.7% of total retail sales. In order to meet the challenges that online retail poses to intralogistics, Chinese companies are focusing on automation.

For a large eCommerce customer SSI Schaefer constructed one of the largest distribution centres in Asia. With an area of 140,000 m², this fully automated warehouse is equipped for up to 600,000 picks per day; a future-proof response to the online boom.

In Singapore, the government is also pursuing similar strategies. The aim is to increase productivity. Hence, companies are being encouraged to reduce low-wage work and strive for a higher degree of automation. These measures increase the demand on intralogistics. At a height of 44 m and with 62,000 pallet storage locations, SSI Schaefer created the largest and tallest high bay clad warehouse in the region for a local third-party logistics provider. For a drinks manufacturer that also operates in the eCommerce market, SSI Schaefer implemented a system with 13,000 pallet storage locations in a 42 m high rack clad warehouse. All this demonstrates just how rapidly automation is gaining ground in Asia.

In Hong Kong and Thailand too there is increasing interest in semi-automated and fully automated solutions. Following a period of many years in which a high rate of manual warehouse operations has prevailed in Asia, companies are now placing increasing value on the fast profitability of dynamic system solutions. They recognise that the increased productivity, even with a basic conveying routing systems for order picking, will allow them to rapidly see a return on their investment. For now, it can be assumed that this trend will continue over the coming years and automated solutions will be in higher demand in the future.



BRILLIANT, SIMPLE, CARRIER

Flexibility makes it possible: transporting with high throughput, dynamic buffering and sequencing.

The SSI Carrier is a highly dynamic pocket sorter for eCommerce and multi-channel distribution.

Online shopping with increasingly shorter delivery times causes constantly higher demands on logistics. Conventional distribution and logistics processes are continuously changing as the requirement of rapid access to goods and returns in warehouses continues to grow. With this in mind, modern logistics warehouses must be as compact, flexible and dynamic as possible.

SSI Schaefer extended their product range for eCommerce and multi-channel distribution and developed a highly compact and multifunctional overhead conveying system for goods of up to 3 kg. The overhead SSI Carrier that transports pockets or hanging goods runs on maintenance-free rollers and with the driven circulating conveyor enables a performance of 10,000 load carriers per hour. The innovative and patent registered concept of the driven accumulation conveyor without descending sections ensures a very gentle transport of the goods in pockets. Two main advantages are crashes of pockets and goods are avoided and the horizontal allocation enables optimal use of the space.

“The innovative SSI Carrier is approximately 10% smaller than existing systems on the market. Thus, we can buffer about 10% more carriers on the same section length”, highlights product manager Klaus Hiesgen, director of HSP GmbH, part of the SSI Schaefer group.

A very efficient application is the use of the system as dynamic returns buffer. Its function guarantees a defined access time to all buffered goods, which is a prerequisite for the fast access in eCommerce. Above all, B2B and B2C orders can be processed in one system at the same time. Branch supply with different sizes of an item can also be sequenced in the same system (store-friendly delivery).



THE INVENTION THAT WILL REVOLUTIONISE LOGISTICS

You will definitely have heard of this invention but won't have related it to logistics: the self-driving car! It is mostly associated with the stubby Google car or adventurous YouTube videos from Tesla customers.

What does this invention have to do with logistics?

Technology that can move a car autonomously can also do the same for delivery vehicles. And that is exactly why this invention is important for logistics. The technology is already highly developed and the industry is working feverishly on improving the efficiency for partially autonomous series-production (!) vehicles.

At first glance, replacing the driver with modern sensors, elaborate algorithms and high-speed computers does perhaps not seem to herald a supply-chain revolution. Allow me to present some scenarios, in which this invention could bring about fundamental changes to logistics.

The infamous last mile

As well as returns, the "last mile" in particular drives logistics costs up for many eCommerce services. Driving to addresses a few hundred metres away, waiting for the customer to answer the door or, if necessary, attempting to deliver multiple times is very expensive - even though the salaries are truly not to dream about.

Now imagine if it were possible to stick to an individual order window of a quarter to half an hour for each customer for only 40 pence or less? That is exactly what self-driving cars will make possible!

Self-driving cars for the last mile will be smaller than the delivery vehicles currently used and will shuttle back and forth between the customer(s) and depot more often. Delivery vehicles are currently as big as they are to make the most of the resource of the driver by having them drive to the depot only once per shift, where possible.

In depots, small, self-driving, electric delivery vehicles will be loaded automatically, taking into account the desired delivery time slot, and will then drive autonomously to the customer. There they wait for the customer to take the goods out of the car themselves. This will allow the time and place to be easily tailored to the customer, whether it's at home, work or even before a trip to the gym.

Basically, it is about extending the internally well-known principle of automated guided vehicles to the supply chain outside the goods distribution centre. That extension is not limited by the so called "last mile".

A revolution for depots and distribution too

As the costs per journey will be significantly lower with self-driving cars, new possibilities will also open up for distribution warehouses and processes. There will be a more regular flow in the distribution warehouse, thanks to smaller loads on the delivery vehicles going more often - with fewer load peaks.

Long-haul transport will also be subject to change due to self-driving lorries. The elimination of restricted

"And what would it be like to combine shopping in the city centre with a delivery service similar to that of eCommerce?"

Dr. Max Winkler, Vice President
Solutions & Technology at SSI Schaefer



driving times will, for example, lead to altered routes and frequencies - with corresponding consequences for warehouses and distribution centres.

The effect on the city centre

In spite of eCommerce, we will still go to the city centre in the future to view, try and even buy products. If the costs of supplying businesses are dramatically reduced by autonomous vehicles, the need for expensive storage space in the city centre will fall and more space will be available for the customers and for presenting the goods.

And what would it be like to combine shopping in the city centre with a delivery service similar to that of eCommerce? For example, what about if my shopping and I leave the shop at almost the same time, and it is waiting for me when I get home in the form of a small delivery vehicle.

The shop's warehouse in the city centre could be moved to depots on the outskirts. Then subsequent deliveries could be made from there several times a day as required. These depots could also supply the eCommerce delivery vehicles for the last mile mentioned above.

Intelligent algorithms for analysing and predicting consumer behaviour will ensure that product availability remains guaranteed in this close-knit network. Companies that have core skills in this area, such as Google or Amazon, can therefore adopt a key role in the logistics networks of the future.

ESD - WHEN SPARKS FLY

Uncontrolled electrostatic discharges can be very dangerous for electrostatic-sensitive components. When transporting these sensitive goods, special solutions and defined processes are therefore necessary to prevent serious damage from occurring.

Plastic containers are indispensable for the intra-logistics material flow. However, most plastics have a problematic characteristic: they are insulators and therefore susceptible to an electrostatic charge. The surface potential of a normal plastic box can be up to 20,000 V, which poses a real danger for the electronic components that they contain. This is because an electrostatic discharge (ESD for short) at even a low voltage can lead to serious damage.

Electrostatic discharges predominantly occur when two objects rub against one another. Electrically charged particles are transferred and spread out over the surface. When the objects are separated, for example, when containers are consolidated in the material flow, the charge is discharged to the last point of contact. Rapidly repeated movement cycles and high separation speeds coupled with high electrical resistances of materials hinder charge equalisation and exacerbate the ESD effect.

Electrostatic discharge can also arise from the induction effect: if a body is placed in an electrical field, charge transfer occurs. These electrostatic inductions originate from operational machine systems and all types of electrical devices. The charge potential can reach several thousand volts.

An electric field is produced when two bodies with different levels of charge touch. The electrons of the more highly charged object or body flow to the other. Anyone who has had a static shock will be familiar with this phenomenon. For people, the ESD effect normally goes undetected, as we only notice it from 3000 V.

What is not dangerous for people, however, can pose a real threat to electrostatic discharge sensitive devices (ESDSs). A discharge of only 5 to 20 volts is already enough to damage the highly sensitive laser heads of hard disks; 100 V can delete all the information stored on





magnetic data carriers. Even the lowest electrostatic discharges can cause malfunctions, shorter service lives or the complete failure of electronic devices.

Packaging and containers made from conductive plastics play an important role in protective systems for counteracting ESD effects. Conductivity is achieved by using a mixture of conductive materials, which usually includes graphite (carbon black), which explains why containers are normally black.

Yet ESD containers alone do not provide sufficiently effective protection. In special electrostatic protected areas (EPAs), the aim is to prevent all electrostatic charges of employees, machine systems, tools, floors, transport devices, racks and conveying systems, and to conduct away any charges that may be present in as controlled a manner as possible.

TERRIBLE CATASTROPHES HAVE DEMONSTRATED JUST HOW DANGEROUS THE SPARKS CAUSED BY ESD EFFECTS CAN BE.

Examples include the Hindenburg disaster or the explosion of a Pershing rocket in Ramstein. Although these are the exceptions and most accidents caused by electrostatic discharges are unspectacular, they are expensive. The financial losses, especially in the electronics and microelectronics industries, amount to millions per year.

LOGISTICS HALL OF FAME®

Berlin, Germany. For the first time, 13 individuals were honoured this year according to the motto "Historic Milestones of Logistics" from 1490 to 2000.

As the only intralogistics specialist among those honoured, Gerhard Schaefer (born 5th August 1924, died 19th July 2015) was chosen as one of the biggest names in the logistics industry. Gerhard Schaefer

is considered a pioneer and implementer of "Systemgedanke" within the field of container logistics. The 1953 launch and series production of the "fixed storage box" revolutionised intralogistics in a remarkable way. The special features of the fixed storage box are the enormous time and space saving as well as the visibility it brings. This was the beginning of SSI Schaefer's incredible story of success.

"SAFETY FIRST" IN ECOMMERCE



Tilburg, Netherlands. Together with SSI Schaefer, the Dutch online retailer Coolblue has expanded its distribution centre in Tilburg. Since October 2015, the renowned eCommerce supplier has also

catered for the delivery of white goods, including washing machines and other large kitchen appliances. Both the "CoolblueDelivers" service and company growth successes demanded an increase in warehouse capacity. The updated facility now encompasses 9,400 pallets, which are stored double-deep at staggering heights of over 10 m. The distribution centre now covers a total area of 60,000 m². The unusual feature of this particular SSI Schaefer solution is that picking is carried out by a forklift using an integrated goods clamp without pallets. This process guarantees the highest degree of goods safety and precision during transport and storage.

CONTINUOUS GROWTH

Riga, Latvia. In August 2016 SSI Schaefer North & East Europe expanded operations into Riga, Latvia, with SNS Nodala - now called SSI Schaefer SIA. The 20-year old sales office continues to install SSI Schaefer solutions and remains a dedicated and competent partner

for the worldwide organisation. The organisation in North & East Europe both advocates and supports a safe working environment and the consideration of safety and EU standards. Moving forward, SSI Schaefer SIA looks forward to growth in sales and further installations.



GROUNDBREAKING

Bielefeld, Germany. Schüco International KG, one of the world's leading specialists in window, door and façade technology, has contracted SSI Schaefer to expand its facilities for accessories and fittings logistics at the Metal division in Bielefeld. As the general contractor for intralogistics, SSI Schaefer is expanding the existing buildings at Schüco's headquarters with a logistics facility covering an area of 7,500 m². Fully automated processes will soon aid picking applying to the goods-to-person principle. The new logistics centrepiece is an automated high bay warehouse with 12,000 pallet storage locations and two picking halls with an automated miniload system including Cuby shuttles as shipping buffers and the most modern robotic technology. As a certified SAP Silver partner, SSI Schaefer is supporting Schüco with the further implementation of SAP EWM.

CORPORATE WEBSITE

Neunkirchen, Germany. Following the successful implementation of the new SSI Schaefer brand design with effect from 1st January 2017, the completely revised corporate website is a prime brand touchpoint. From today, it is one of the principal gateways into the SSI Schaefer world. As an important channel for information and communication with customers, it impresses with a user-friendly navigation, sector-specific solutions and an intelligent matrix structure. See it for yourself at ssi-schaefer.com

CUTTING EDGE TECHNOLOGY AND EXCITING PANEL DISCUSSIONS MAKE A STRONG IMPRESSION AT LOGIMAT

Stuttgart, Germany. At LogiMAT 2017 in March, SSI Schaefer proved to be communicative, innovative and committed to excellent technology.

At a press conference on the second day of LogiMAT, the operational management team, led by Rudolf Keller, CEO of the SSI Schaefer Group, explored the strategic topics that set the tone for the enterprise's trade fair activities. The executives emphasised how SSI Schaefer, as a global player and a family-owned business, continues to pursue a growth strategy. With its rising headcount, worldwide expansion, and new production sites in Kunshan, China and in Mexico, the intralogistics expert is well placed to address future customer and market challenges. A future-proof intralogistics portfolio, the new sales structure for automated, end-to-end systems, and the recently founded SSI Schäfer IT Solutions GmbH complement SSI Schaefer's trade show.

Furthermore, SSI Schaefer's new discussion format, "LET'S TALK", made a successful debut at the enterprise's main stand. Experts from the worlds of business and research, including Haribo, Zalando and Brose, provided fascinating insights into current projects and market trends. The talks were streamed live on the Internet, and are now available on SSI Schaefer's YouTube channels.



Gesa Eberl (centre) discussed the "Megatrend Digitalisation" with (f.r.t.l.) Thomas Reppahn from Schenker, Matthias Pieringer from Logistik Heute, August Harder from Coop and Franz Bauer-Kieslinger from SSI Schaefer.



"With 'LET'S TALK - SSI Schaefer's expert panel', we created a forum for high professional exchange, which will be developed. We are delighted about the exciting discussions and the more than positive fair visitors' feedback."

Klaus Tersteegen,
Member of Operational Management Board, SSI Schaefer



EQUIPPED FOR THE FUTURE

Companies across the world are relying on SSI Schaefer as their partner for future-proof logistics solutions. When it comes to mastering the increasingly complex and dynamic processes in your warehouse, our experts are there for you. As the world's leading supplier of logistics systems, we not only offer everything for your internal storage needs, but also concentrated IT power. Our solutions are developed by specialists who listen and will not rest until you are satisfied.

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