The new 4.0 distribution center of Ypê

dcvelocity.com/media/videos/play/2494-the-new-4-0-distribution-center-of-ype

DC Velocity

Videos

Reinforcing its commitment to innovation, efficiency, and process optimization, Ypê has transformed its distribution center in Amparo (SP) into one of the most modern and technological centers in Brazil and Latin America.

The goal is to offer the best customer service from north to south Brazil and to continue expanding at an accelerated pace.

The project relied on the experience of the Italian company E80 Group, a global reference in high technological warehouses systems, which has a complete portfolio of integrated solutions that guarantee an efficient process from start to finish, safe and with maximum quality.

The DC has adopted the latest innovations in the industry: laser-guided vehicles, robots that assemble pallets using layers of different SKUs, voice command systems to optimize employees' work, and new, fast, productive, and intelligent stacker cranes. Furthermore, this Distribution Center has conveyors that unload the trucks from the production units in a fully automatic and fast way, taking less than five minutes to perform the task.

To learn more about E80 Group integrated systems, visit www.e80group.com or contact e80.usa@e80group.com.

Demand for warehouse automation soars

mmh.com/article/promat_c_suite_interview_with_andrea_pongolini_of_e80_group

MMH Staff

Andrea Pongolini, EVP of Sales, E80 Group Inc.

Andrea Pongolini

EVP of Sales

E80 Group Inc.

MMH: What were your main takeaways from Promat 2023?

Andrea Pongolini: At Promat 2023, we noticed a significant shift in the priorities of multinational corporations. Rather than focusing on individual projects, companies are seeking long-term technological partners that can offer total integration solutions for consistent growth. This trend presents an excellent opportunity for E80 to continue to establish genuine partnerships with the world's leading brands. The goal is to work together and leverage end-to-end automated and integrated systems to create a lasting and sustainable growth path. We're thrilled to see the industry's recognition of the importance of long-term commitment and look forward to standing by our customers side in the achievement of their next goals.

MMH: What are the three key market trends from your perspective?

Pongolini: The market trends we observed at Promat 2023 confirm the increasing demand for automated and sustainable supply chain solutions, especially in the CPG industries. This demand is driven by the need for greater efficiency, accuracy, and cost-effectiveness in material handling operations, as well as the growing concern for the environment.

At E80, we are at the forefront of this trend, having been one of the leaders in the design, development, and implementation of fully automated and energy-efficient material handling solutions for many years. Our focus on end-to-end integration and remote monitoring has allowed us to offer our customers a unique value proposition that optimizes their supply chain.

MMH: How is E80 responding to these market trends?

Pongolini: E80 Group is responding to market trends with end-to-end fully automated solutions, including integrated hardware and software. We have successfully implemented truck loading and unloading operations, as well as other automated solutions in factories and distribution centers in the US and Canada.

Data management is a fundamental element of our software development, and our use of lithium-ion battery-powered automatic vehicles has allowed us to reduce site activities and installation times, as well as energy and maintenance costs. Remote system monitoring has resulted in a significant decrease in the number of physical interventions at the customer's site, resolving 93% of issues remotely. Safety is another fundamental element of our offer, and our R&D is constantly looking for innovative solutions to ensure the maximum safety of our systems.

Learn more about E80 Group

Transform your factory

How Laser Guided Vehicle Systems can improve safety and efficiency

TECHNOLOGY Mar 6, 2023

Metsä Tissue is investing in a fully automated high-bay warehouse and efficient logistics

SHARE

Metsä Tissue Mariestad.

Metsä Tissue is investing in a fully automated high-bay warehouse with state-of-the art in-house logistical solutions that enable higher production capacity, storage efficiency and improve the inventory turnover at the tissue paper mill in Mariestad. The investment is part of the company's Future Mill programme, aiming to world class environmental and operational performance in tissue production.

Metsä Tissue and the Italian **E80 Group** has agreed of the delivery of a fully automated high-bay warehouse to Metsä Tissues tissue paper mill in Mariestad, Sweden. Fully automated logistics processes improve the inventory turnover and efficiency, reduce errors and shorten delivery times to customers. The investment is part of the recently announced modernization and expansion project of the Mariestad mill with a total investment of 370 MEUR.

"We are talking about a state-of-the-art warehouse logistics system. For instance, the automated intralogistics solutions with laser guided vehicles provide flexibility in our finished goods and raw material handling and ease the in- and outbound logistics within the warehouse. The reduced forklift traffic also improves safety at the mill", says **Esa Paavolainen, Vice President, Projects, Metsä Tissue**.

“This order represents for us one of the biggest greenfield projects developed worldwide. We share a unique goal with the Metsä Tissue team, to provide a solution that would be beneficial for the environment and the people, not only for the business. Thanks to our SM.I.LE80 software platform – which coordinates, supervises and manages all intralogistics operations, guaranteeing optimized flows -, and laser-guided vehicles powered by lithium-ion batteries, we are committed to ensuring the highest level of safety for the overall sustainability of the project”, says **Enrico Grassi, President, E80 Group**.

The construction work on the new warehouse is expected to start at the end of 2023, to be put into operation in the summer of 2025. The parties have agreed not to publish the value of the investment.

Metsä Tissue to boost logistical capabilities with E80 Group investment

tissueworldmagazine.com/world-news/metsa-tissue-to-boost-logistical-capabilities-with-e80-group-investment

Helen Morris

Metsä Tissue's Mariestad site will house a state-of-the-art warehouse logistics system

Metsä Tissue is investing in a fully automated E80 Group-supplied high-bay warehouse with state-of-the art in-house logistical solutions at its tissue paper mill in Mariestad.

The company said the investment in fully automated logistics processes will improve the inventory turnover and efficiency, reduce errors, and shorten delivery times to customers.

Construction work on the new warehouse is expected to start at the end of 2023 and will be put into operation in the summer of 2025.

Esa Paavolainen, Vice President, Projects, Metsä Tissue, said: "We are talking about a state-of-the-art warehouse logistics system.

"For instance, the automated intralogistics solutions with laser guided vehicles provide flexibility in our finished goods and raw material handling and ease the in- and outbound logistics within the warehouse.

“The reduced forklift traffic also improves safety at the mill.”

Enrico Grassi, President, E80 Group, added: “This order represents for us one of the biggest greenfield projects developed worldwide.

“We share a unique goal with the Metsä Tissue team, to provide a solution that would be beneficial for the environment and the people, not only for the business.

“Thanks to our SM.I.LE80 software platform – which coordinates, supervises and manages all intralogistics operations, guaranteeing optimized flows – and laser-guided vehicles powered by lithium-ion batteries, we are committed to ensuring the highest level of safety for the overall sustainability of the project.”

The investment is part of Metsä Tissue’s recently announced modernisation and expansion Future Mill programme for the Mariestad mill, which will see a total investment of €370m.

Looking to increase production capacity by redeveloping tight spaces? Check out this Case Study

dcvelocity.com/media/videos/play/2568-looking-to-increase-production-capacity-by-redeveloping-tight-spaces-check-out-this-case-study

DC Velocity

Founded in Italy in 1993, Abafoods has its HQ in Italy and is a member of Ecotone Group.

Today, the company is one of the European leaders in the production and distribution of plant-based beverages and creams alternative to milk and dairy products.

Thanks to a close collaboration with Tetra Pak and E80 Group, Abafoods has effectively increased its production capacity by 20%. Ambitious targets have also been achieved, like a 15% reduction in film consumption and a 50-ton reduction in CO2 emissions in parallel with an 8% increase in product-on-pallet and a 50% increase in automatic product management. Around 400 m² of space has been cleared for a potential future expansion of the production lines, and safety levels have significantly improved too in the whole plant. "The solution designed by E80 in collaboration with Tetra Pak and Abafoods is extremely efficient and flexible since future expansion in production lines or changes to the line layout will only require the re-routing of LGVs instead of dismantlement or the construction of new floor-mounted structures for material movement. It has improved the efficiency of all our intralogistics operations and reduced our environmental impact, too," explains Luca Europeo, Ecotone’s Operations Director Italy.

Read the full case study and watch the full video interview on E80 Group website >> smart-factory.elettric80.com/en/case-studies/end-to-end-solution

E80 Group to supply a high-bay automated warehouse for Metsä Tissue in Sweden

tissueonlinenorthamerica.com/e80-group-to-supply-a-high-bay-automated-warehouse-for-metsa-tissue-in-sweden

Metsä Tissue, part of the Metsä Group, in collaboration with the Italian multi-national E80 Group is investing in a fully automated high-bay warehouse with state-of-the-art intralogistics solutions that enable higher production capacity and improve the inventory turnover at the production paper mill in Mariestad, Sweden, reducing the margins of error and the delivery time to clients.

The investment is part of the company's Future Mill program, aiming to obtain world-class environmental and operational performance in tissue production thanks to a modernization and expansion project amounting to €370m.

"This is a state-of-the-art warehouse logistics system that provides a great flexibility in our finished goods and raw material handling. The automated intralogistics solutions with laser-guided vehicles provide high flexibility for the in- and out-bound logistics within the warehouse. There is more than that: the reduced forklift traffic improves safety at the mill," said Esa Paavolainen, Vice President, Projects, Metsä Tissue.

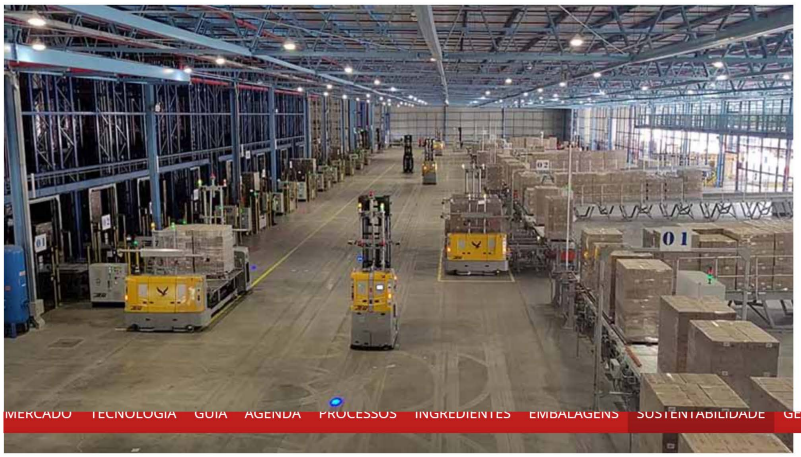
Enrico Grassi, President, E80 Group, added: "This represents for us one of the most ambitious greenfield projects developed worldwide. We share a unique goal with Metsä Tissue team: we look at the future together through efficiency, safety, and sustainability.

"Thanks to our SM.I.LE80 software platform – which coordinates, supervises and manages all intralogistics operations, guaranteeing optimized flows -, and laser-guided vehicles, we are committed to ensuring the highest level of safety for the overall sustainability of the project."

The construction work on the new warehouse is expected to start at the end of 2023, to be put into operation in the summer of 2025.

Engarrafador MODERNO
Negócios | Produção | Processo | Tecnologia em Bebidas

CD 4.0 prepara Ypê para o futuro



Ypê investe em tecnologia para implantação de um dos mais modernos centros de distribuição da América Latina

Por Carlos Donizete Parra

Uma visita ao novo CD da Ypê é muito mais que um evento corporativo. É um exercício futurístico incrível. O CD 4.0 está instalado no Complexo Industrial da Ypê, um espaço composto por 9 fábricas que produzem desde óleo vegetal, passando por embalagens até chegar aos produtos de higiene e limpeza entregues a milhões de lares brasileiros e que fazem o sucesso da empresa no mercado nacional. O atendimento carinhoso dos anfitriões (Ypê e E80 Group) combina com o cenário do CD tomado por robôs e LGVs, deixando o ambiente com a cara de cidadezinha do interior onde está instalada a fábrica, em Amparo, a cerca de 120 kms de São Paulo.

Os produtos da Ypê estão presentes em 94% dos lares brasileiros em 23 categorias diferentes com um portfólio amplo e crescente. Pela terceira vez foi eleita como a marca mais escolhida no universo online. São 6 unidades industriais, 28 unidades logísticas, mais de 3000 clientes

"Esse projeto nos coloca em destaque para enfrentar os desafios do presente e do futuro, WALDIR Beira Jr., Presidente Executivo da Ypê

capilaridade e agilidade.

Com esses objetivos, a Ypê iniciou lá em 2018 o projeto de ampliação e modernização do seu Centro de Distribuição culminando no mais moderno CD da América Latina e que vai gerar mais competitividade contribuindo para a liderança da empresa no setor de limpeza. "Trata-se de um projeto de grande ousadia e que nos coloca em posição de destaque para enfrentar os desafios do presente e do futuro que toda empresa na área de consumo tem pela frente", garante Waldir Beira Júnior, Presidente Executivo da Ypê.

Eficiência e segurança ao processo

Instalado em uma área construída de 50 mil metros quadrados, o Centro de Distribuição dispõe de uma estrutura com 43 mil posições de paletes de armazenamento, 58 docas de expedição, 6 esteiras de recebimento e 318 colaboradores responsáveis pela movimentação de cerca de 500 carretas por dia.

São 72 AGVs/LGVs de três tipos, que executam tarefas diferentes de acordo com a necessidade do CD, sendo que dois desses LGV's ficam sempre em manutenção preditiva. Os LGVs garantem ao sistema uma disponibilidade superior a 99%. Através da tecnologia de picking por camadas, os robôs montam os paletes de acordo com a necessidade dos clientes permitindo a colocação de diferentes sku's. Esse sistema traz mais agilidade na preparação das remessas aos clientes que necessitam de paletes com produtos e camadas diferentes.

Todo o recebimento é automatizado, realizado por esteiras que agilizam o sistema permitindo o descarregamento de um caminhão cheio em menos de 5 minutos. Toda a solução é gerenciada pela plataforma software SM.I.LE80 desenvolvida pelo E80 Group que permite que sistemas e fluxos dentro do CD sejam coordenados e monitorados em tempo real, garantindo maior

produtividade que já apresentam inúmeros resultados. Antes da implantação do CD 4.0, o tempo médio de carregamento de 1 caminhão na Ypê girava em torno de 9 horas, esse tempo caiu para algo em torno de 4h20 minutos com uma taxa de erro perto de 0,06%.

"Beneficios ja conquistados"

- Melhoria do nfvel de serviço ao cliente;
- Melhoria da eficiéncia operacional;
- Reduçao de mais de 50% no tempo dos caminhoes dentro do patio da empresa. Sao quase 500 caminhões por dia dentro da Ypé;
- 0,06% de erro no carregamento de caminhao;

- Rastreabilidade de 100% dos processos no CD;
- Melhoria exponencial na segurança do trabalho;
- Gestão online de todo o processo do CD.

"A tecnologia da E80 possibilitou um diferencial competitivo que lá na frente vai fazer a diferença em relação aos nossos concorrentes. Além disso, a pegada de carbono, a sustentabilidade com redução do consumo de energia e outros insumos só é possível com essa tecnologia. Com esse processo totalmente lean, digital e automatizado fornecido pelo E80 Group conseguimos obter uma confiabilidade maior, entrega mais veloz, uma adaptabilidade às mudanças do mercado.

"Hoje estamos mais alinhados com nossos clientes, atendendo suas expectativas e, com isso, vamos aumentar a parceria e crescer junto com eles",

Hoje conseguimos estar mais alinhados com nossos clientes, garantir que as expectativas deles sejam atendidas e, com isso, vamos

A complexidade do projeto, bem como o crescimento e os requisitos de qualidade de entrega apresentados pela Ypê, colocaram desafios consideráveis. "Com o objetivo de implementar uma solução sob medida para o centro de distribuição da Ypê, a aplicação do software de simulação de eventos discretos, SmartDesigner, teve um papel fundamental, permitindo a realização de testes em ambiente simulado e controlado. Dessa forma, foi possível obter resultados antecipadamente, antes da implantação da solução, e estabelecer investimentos, fazendo as alterações necessárias. Através da utilização da ferramenta, foram simulados os fluxos da fábrica, avaliando todos os cenários operacionais, atuais e futuros, garantindo assim o desenvolvimento de um cenário realista.

Assim, foi possível identificar a solução intralogística mais eficiente, ou mudanças de mercado", explica Luca Guidetti, Head of Sales & General Manager do Grupo E80 no Brasil.

"Com a utilização das tecnologias apropriadas foi possível identificar a solução intralogística mais eficiente,

LUCA Guidetti, Head of Sales & General Manager do Grupo E80 no Brasil

Outro grande desafio é que esse CD foi implantado durante a pandemia. Segundo o diretor de operações logísticas da empresa, Iclacir Mascarello, a equipe realizou as operações do dia a dia em meio às mudanças de implantação do Centro de Distribuição. " Foi um grande desafio não perder faturamento na principal unidade da empresa e não prejudicar as obras. Outro desafio foi capacitar a equipe e fazer essa transição de um modelo tradicional para esse projeto totalmente automatizado e digital. A equipe se adaptou muito bem e com isso mantemos nosso propósito de desenvolver e manter nossos colaboradores na empresa", comemora Iclacir.

Empresa familiar e 100% brasileira, a Ypê participa de diversos projetos sociais que mostram sua preocupação com as pessoas e comunidades, principalmente no entorno de suas unidades. Uma das maiores empresas de produtos de limpeza do Brasil, o Projeto CD 4.0 é fundamental para a estratégia de crescimento e posicionamento no mercado. A companhia é referência em qualidade de entrega e

"Um grande desafio foi capacit r a equipe e fazer a

ICLACIR Mascarello, Diretor de Operações Logísticas da Ypê

Business Success Story: French food multinational Danone Group invested in an automated and integrated new production plant in Spain

dcvelocity.com/media/videos/play/2602-business-success-story-french-food-multinational-danone-group-invested-in-an-automated-and-integrated-new-production-plant-in-spain

DC Velocity

The 51,000 m^2 facility becomes the first avant-garde Danone center in Europe to develop, along with dairy products, plant-based alternatives to coconut-based and oat-based yogurt, enhancing the adoption of healthy, sustainable, and inclusive eating and hydration habits.

To address all the challenges related to this project, Danone chose the E80 Group ecosystem of intralogistics hardware and software solutions.

"For Danone team, it has been fundamental to dialogue with only one partner," says Javier Casassas, Industrial Projects Technician at Danone Group "Otherwise, the greater the number of interlocutors, the greater the loss of efficiency of a system. It is an innate, essential condition. The supplier must be competitive in software, hardware, and efficient solutions to meet the industrial customer’s needs, which implies great flexibility."

Read more about the successful partnership between Danone Group and E80 Group by following this link >> tinyurl.com/e80casestudies

- All
- DCV-TV 1: News
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- DCV-TV 3: Webcasts
- DCV-TV 4: Viewer Contributed
- DCV-TV 5: Solution Profiles

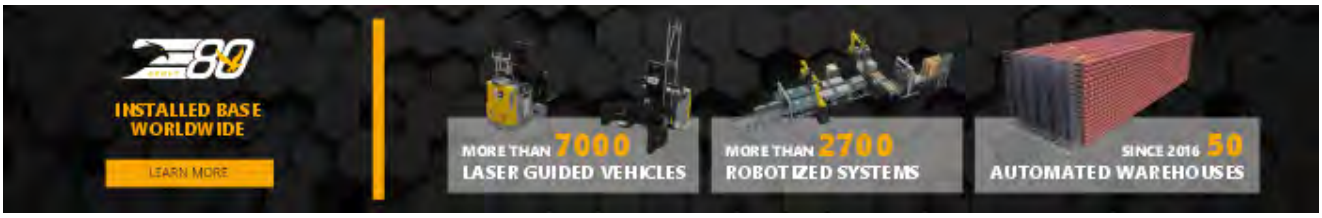
E80 supplies robotized systems to increase the Smart Factory sustainability

tissueonlinenorthamerica.com/e80-supplies-robotized-systems-to-increase-the-smart-factory-sustainability

With over 40 years in the market, E80 Group specializes in the development of automated logistic solutions for daily consumer goods manufacturing companies in the tissue, beverage and food sectors and other diversified areas. Its tailor-made solutions allow the management of supply chain activities and guarantee a significant improvement in factory and distribution centres efficiency and in product traceability.

The company has a vast portfolio with products that allow the customization of each solution. Its Robotic division, for example, specializes in developing innovative end-of-line systems that perfectly integrate with all automated handling, palletizing and storage solutions.

In particular, the quality, compliance and safety levels of wrapping and labeling are continuously tested and improved within the BEMA Lab, a space dedicated to the development of customized solutions aiming at anticipating customers' production needs.



BEMA LAB, THE LABORATORY DEVOTED TO THE GROWTH AND SHARING OF TECHNICAL EXPERIENCE

BEMA Lab represents the perfect synthesis between cutting-edge industrial reality and corporate values of sustainable growth. An in-house research and consultancy team tests wrapping and labelling recipes with the aim of developing the best tertiary packaging solutions for its customers, ensuring maximum load stability, total traceability and product integrity. These benefits arrive on top of a significant reduction in the packing material used, arriving to halve the quantity of film needed. For instance, to wrap a 4.4 feet-high pallet, only 0.15 pounds of a 12-micron film are needed.

Two systems check the load stability at different speeds and on different means of transport: the vibrating table for the simulation of transport by road, sea or rail and the bench for pallet acceleration and stability test complying with standard EUMOS 40509, which is a recognized standard applicable under European directive EU 2014/47 for load safety on the road.

In addition, a set of load cells is used to measure the containment force of the film on the product's corners during the wrapping process. Therefore, inside BEMA Lab the E80 team test the stability of the various products and develop a custom wrapping solution, guaranteeing results to the customer over time.

To learn more about this and other solutions offered by E80 to tissue customers around the world, please visit www.e80group.com.

HOW MUCH DO YOU VALUE SAFETY, SUSTAINABILITY AND EFFICIENCY?

William Nelson, President, E80 Group North America, states a case for full scale material handling automation as an answer to today's challenges.

Would you ever imagine putting in a new production line without automatic end-of-line packaging (wrapping, bundling, case packing), or for that matter decide it's more efficient to palletise by hand? Imagine what that would look like from a personnel staffing perspective, not to mention the efficiency of a human stacking product for eight hours a day – coffee and restroom breaks not withstanding! Think about the toll such labour takes on the individuals engaged in a high-pressure, high-output, repetitive tasks standing day in and day out at the end of a modern rewinding line. Good luck! So, what's the difference once the product is packaged and palletised?

From the end of production lines, a swarm of fork trucks transport finished goods to a warehouse and then to a shipping bay – time after time after time. Isn't this just an extension of the previous high-pressure, high-output, unsafe and repetitive tasks we talked about at the end of a production line? What benefits do manpower bring to these tasks? What risks are inherent in fork trucks racing around a facility, crossing paths with each other, honking horns at intersections and blind corners?

These questions are obvious provocations, but really, can we shift our thinking a little bit towards a safer, more sustainable, highly predictable solution? Can we consider a new paradigm in which automation of all material flows is part and parcel of any plant design?

Over the past three distribution editions we have explored how automation technology can be deployed as the final frontier of efficiency, how both internal and external logistics energise productivity, and the economics of automation working equally for small, medium, and large producers.

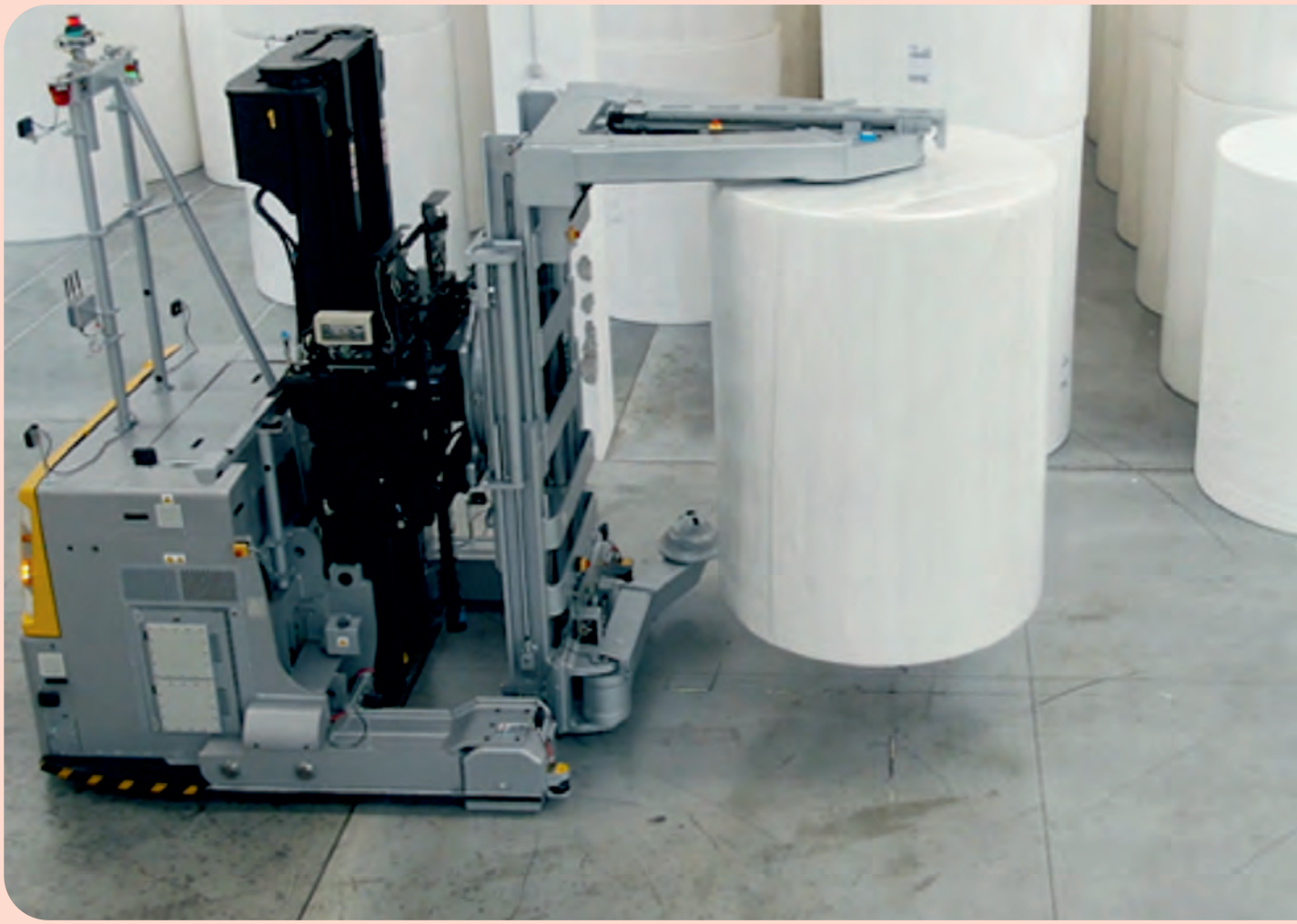
We'd like to discuss in this edition a further evolution in the marketplace: Automation is a Must, not an Option. We'll talk about all the different options available in the production and distribution space as well as some new technological developments that provide nearly infinite product mix capabilities to support market future needs. Let's go with the flow of material movements within an ideal factory.

RAW MATERIAL HANDLING

As a start, an ideal factory excels in the efficient management of raw materials. Employing innovative raw material storage solutions such as the Double Deep storage system, maintains impeccable order within its inventory, and reduces space required. This enables seamless monitoring and streamlined management of stock, ensuring precise, timely deliveries to production lines—exactly where and when they are needed for optimal operations. Raw material handling with automation ensures:

- Total traceability to reduce waste and bottlenecks.
- Deliver on-demand to production line, at the right place and at the right time.
- Inventory control and auto-replenishment.

These benefits apply also when it comes to parent roll handling. Based on roll characteristics, space availability, and WH methods, you have four options



Parent roll handling thanks to the Unicorn LGV, patented by E80 Group, an automatic handling system designed for tissue.

that are capable of handling all known parent roll weights and dimensions on the market today:

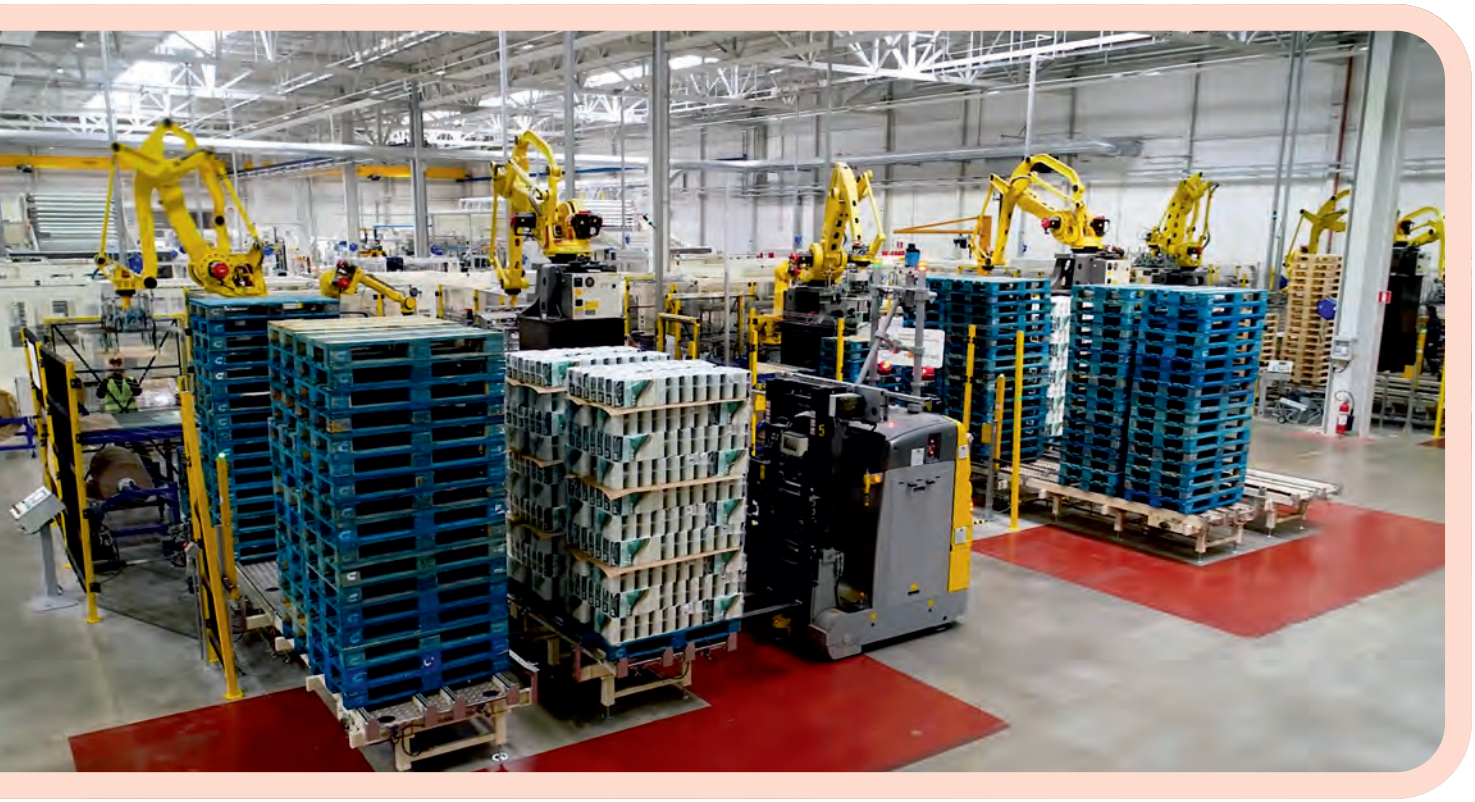
1. LGVs with clamps
2. Prong LGVs

And two completely new technologies that prevent any damage to the paper and save space respectively:

3. ANT PR-LGV
4. UNICORN LGV

Elephant LGV, with clamps. Time-tested and proven concept allowing stacking up to three levels, delivery of parent rolls, and pick up of cores over about 100 systems installed just in North America, the Elephant is proven to reduce roll waste by up to 2% over manual handling as well as provide important functions such as back-to-back roll placement, which is favoured by insurance carriers. Efficient stacking optimises the use of warehouse space by up to 7% and reduces the risk of fire by minimising the "chimney" effect.

An ideal factory excels in the efficient management of raw materials. Employing innovative raw material storage solutions maintains impeccable order within inventory, and reduces space required.



End-of-line Robot Systems such as robotic palletisers, stretch wrappers, and robotic labellers seamlessly integrate with LGVs.

ANT, designed to interface directly into the unwind stand of the converting machine to deliver full parent rolls and return used cores. This concept provides increased safety as the operator does not have to interact in the parent roll handling process, in addition to being highly maneuverable and space-saving.

Unicorn LGVs, the next-generation laser-guided vehicle (LGV) specifically developed to lift, move, and deposit jumbo rolls weighing up to five tons and of three metres in diameter both vertically and horizontally. Patented by the E80 Group, this LGV prevents damage to the paper by automatically inserting two chucks inside the core and avoiding any contact with the external surface. Efficient stacking optimises the use of warehouse space by up to 7% and reduces the risk of fire by minimising the "chimney" effect.

FINISHED GOODS HANDLING

At the end of the production lines, robotic palletisers integrate seamlessly into finished goods handling systems, including LGVs and ANT, providing a wide range of options based on your finished good warehousing strategy.

BLOCK STORAGE is a standard in finished goods tissue handling, allowing up to four levels stacking heights for all products, including display pallets and unit load of cased products. It is the simplest and lowest cost solution from an infrastructure point of view.

DRIVE-IN racking has successfully been employed in the tissue industry, while it is widely used in the beverage and food industry up to 11 metres. It provides for higher density in a vertical sense.

ASRS provide for the highest density utilisation of space. All product types can be stored independent of dimensions. One key benefit of high bay storage is speed in preparing outbound shipping loads and flexibility to mix loads.

TOWARDS DISTRIBUTION CENTRES OF THE FUTURE

Global distribution centres (DCs) have to deal with a significant increase in logistical challenges, driven by heightened market competition and increasing customer demands for enhanced service quality. The trends underscore a growing range of products focused on achieving quicker and more efficient time-to-market, alongside the proliferation of innovative distribution channels, including advanced last-mile delivery solutions. The role of integrated supply chain systems and the digitalisation of intralogistics processes is pivotal in ensuring business success.

One example of innovation for pallet customisation is EAGLE TRAYS, a solution that tackles the issue of multi-shape and multi-size picking by implementing innovative robotic systems capable of preparing pallets with non-homogeneous products. The system is a combination of software and hardware, both developed in-house. The

software allows the customer to select the right SKUs to build the pallet with the maximum stability.

The reality is that on a single pallet you could have a box of tissue, a bundle of towels, a box of facial tissue, and a case of diapers all prepared for a small retailer. The system intelligently selects the configuration of the pallet based on stability factors, meaning a safer product for end consumers.

The ability to configure a more stable pallet offers benefits beyond retailer convenience, including reduced shipping costs. There's less damage to the product and better utilisation of the pallet itself. If you optimise the pallet footprint, then you can also optimise the loads on the truck, leading to fuller trucks for better utilisation of your vehicles.

All of this is made possible through the interaction of different automated vehicles and machinery to carry out tasks with high precision and speed. In our vision of distribution centres of the future, we see a web of automation that handles materials, coordinates movements, and optimises processes seamlessly.

Global distribution centres have to deal with a significant increase in logistical challenges, driven by heightened market competition and increasing demands for enhanced service quality.

Finished Goods Block Storage System with LGVs.

Finished goods handling thanks to Laser Guided Vehicles.

STREAMLINING OPERATIONS WITH SMART SOFTWARE

In the ever-evolving landscape of automation, software plays a pivotal role in orchestrating seamless intralogistics. E80 proprietary Software Platform is designed to manage high-volume LGV fleets and robotic systems, dialoguing with customer's ERP and ensuring the integrated and automated flow of materials throughout your plant. It acts as the conductor of this intricate symphony, communicating with production lines, palletisers, and wrappers, while coordinating warehouse movements from receiving to shipping.

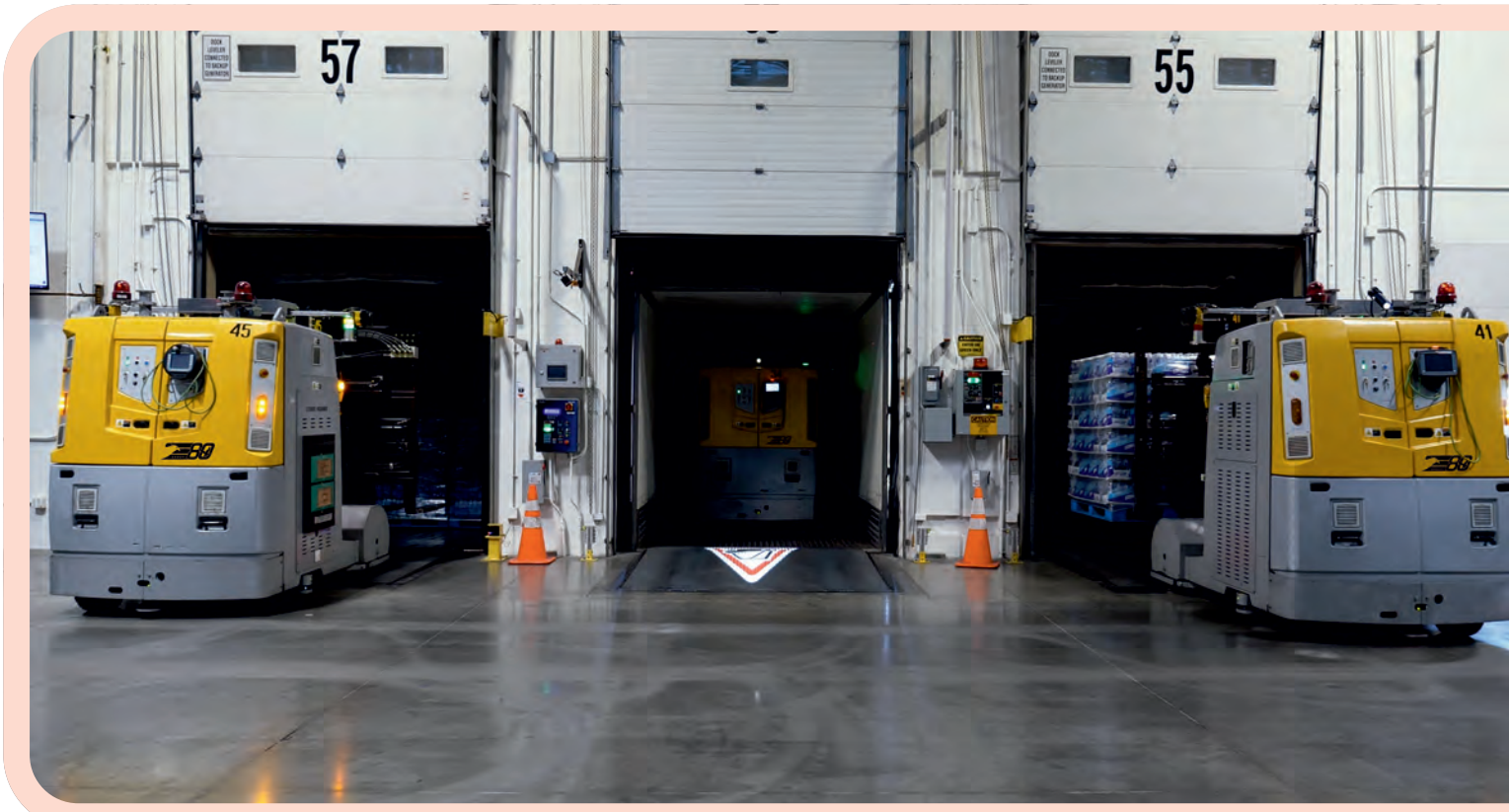
This smart decision-making software not only optimises resource utilisation but also provides real-time performance monitoring, predictive traffic management, and intelligent route selection. With a single durable interface, it guarantees efficiency, safety, and total product traceability, ensuring that your operations are faster, safer, and more sustainable. As the digital economy reshapes distribution, embracing integrated automation and smart software solutions becomes not just an option but a necessity for businesses looking to thrive in the modern era.

We return to our original question: how much do you value safety, sustainability and efficiency?

As we have seen, there are endless possibilities to discover about automation. And it's the only way you can be future-ready, enhancing efficiency from the inside out, and continuously making your operations faster, safer, more sustainable, and more profitable.

You can work hand and hand with your supplier to develop custom solutions made just for you. E80 Group is investing in logistics concepts of the future at its welcoming InnovE80 collaborative Hub – downtown Chicago – a creative home to shape the future of your business.

This article was written for TWM by William Nelson, President, E80 Group North America.

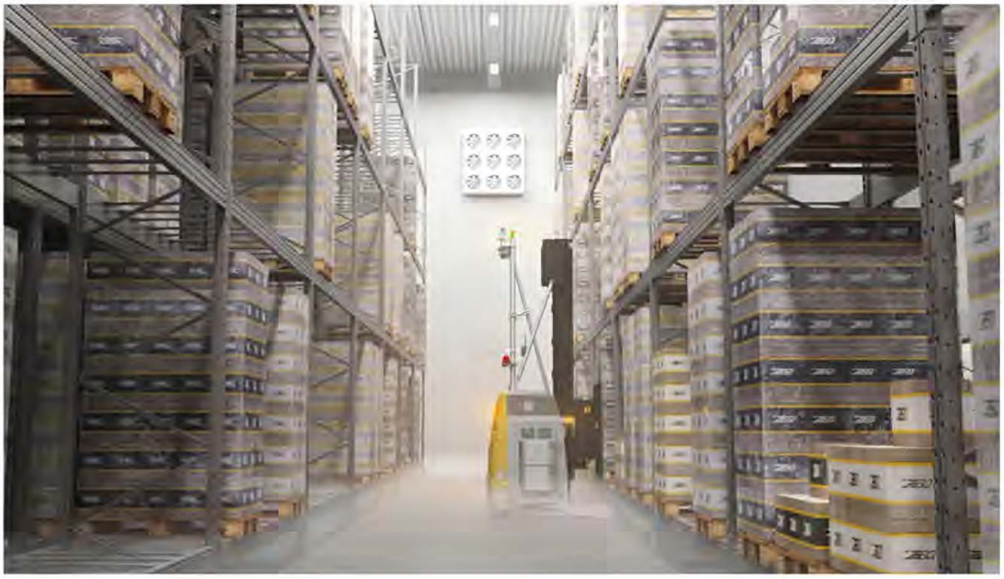


Automatic loading of the trucks with LGVs.

E80 GROUP'S CUTTING-EDGE ADVANCED TECHNOLOGIES ARE RESHAPING THE LANDSCAPE OF COLD STORAGE FACILITIES

5 min

Intralogistics plays a key role in an industry for which it is vital to ensure food quality and efficient operations



In the ever-evolving cold chain ecosystem, the pursuit of **logistics and warehousing high performance** has emerged as a paramount goal for businesses aiming to maintain a competitive edge. A groundbreaking solution that's transforming the industry is the combination of automated guided vehicles and high-bay warehouses. This **game-changing synergy** offers several advantages, fundamentally reshaping the storage, retrieval, and transportation of goods.

INTRALOGISTICS: THE KEY TO OPTIMAL OPERATIONS

Within an industry for which it is vital to ensure food quality and efficient operations, **intralogistics plays a key role** in enabling the optimization of handling, storage, picking, and shipping at the required temperatures. Manufacturers and distributors, driven by market dynamics, are encountering a series of challenges. These encompass the pressing need for higher productivity to meet **surging market demands**, the necessity for quicker stock turnover, and the ever-expanding array of products falling within the temperature range of -4°C to -26°C.

In this **transformative landscape**, the cold chain's rulebook is being rewritten by the joined

use of automated guided vehicles and high-bay warehouses. Efficiency, precision, and adaptability are the cornerstones of this revolution, promising to change the very essence of how we store, retrieve, and transport goods in the pursuit of optimal cold chain operations.

REVOLUTIONIZING COLD CHAIN THANKS TO E80 GROUP'S SOLUTIONS

Also developed to respond in a scalable and flexible way to the performance needs of the cold chain, the solutions of **E80 Group**, an Italian-based multinational specialized in integrated and automated solutions for manufacturers and distribution centers, primarily in the food, beverage, and tissue sectors have been revolutionizing the way deep-freeze warehouses operate. Also with its **Smart Integrated Logistics** (SM.I.LE80) software platform, which manages all intra-logistics flows, and **laser-guided vehicles** (LGVs) portfolio, the Group offers flexibility to its customers while significantly increasing plant efficiency and product traceability throughout the supply chain.

In order to guarantee the most efficient intra-logistics solution, **E80 Group** provides consulting and after-sales services, such as discrete-event simulation software and 24/7 remote and on-site support. The **SmartDesigner** plays a key role in the design phase, as tests are carried out in a simulated and controlled environment. This makes it possible to obtain results before the implementation, as well as to establish investments and apply the required modifications. All the current and future operating scenarios are assessed, thus enabling the development of a realistic scenario. This allows to maximize **process optimization in plants** where many variables are in play, verify flows, identify potentially critical issues well in advance, and validate the most appropriate control logics with 95% reliability.

Moreover, the Group offers a vast array of **after-sales services** aimed at protecting the added value guaranteed by the implemented solutions over time and meeting the demands that may arise during the lifecycle of the system, such as new market situations and different production requirements.

With a focus on **innovation and sustainability**, this integrated strategy aims to guarantee safety in warehouses and to ensure a smooth and efficient workflow in deep freeze plants, where the extreme environment creates difficult working conditions for personnel.

The purpose is to optimize **productivity and service to customers** while maintaining the quality and integrity of temperature-sensitive goods.

LGVS' AND AUTOMATED WAREHOUSE PERFORMANCES IN SUB-FREEZING PLANTS

The use of **LGVs** connected with different types of storage, engineered to operate even in

temperature conditions as low as -26°C, has been crucial in deep-freeze manufacturing and distribution operations.

In detail, **E80 Group laser-guided vehicles** interact seamlessly with various systems bringing the right product in the right place at the right time. All LGVs designed for deep freeze environments feature internal heating systems, insulated and thermoregulated hydraulic power units, and lithium batteries enabling operations in temperatures as cold as -30°.

One of the most important automated storage solutions for industries requiring cold storage is the use of advanced **AS/RS systems** for the automated handling of products in several different storage layouts, ensuring high performance, reliability, and energy efficiency even under freezing conditions. The integration with LGVs makes the entire solution completely flexible and each crane completely independent, eliminating the risk of bottlenecks. In this scenario, one of the keys to optimizing performance and **reducing cost** per pallet is to maximize density while ensuring the required throughput rate. The complete solution is designed to be modular and upgradeable.

By combining **Smart Integrated Logistics software**, **E80 Group** empowers manufacturers and distribution centers to meet the challenges of deep freeze environments head-on. These technologies not only optimize operations but also preserve product quality, and ensure traceability, and safety throughout the supply chain, ultimately benefiting both businesses and their consumers.

To take a closer look at how these customizable and configurable solutions can have a pivotal role within **deep-freeze warehouses**, let's see an example of one of E80 Group's customer plants handling and storing frozen foods.

Niagara Bottling, a Showpiece for Integrated Robotic Pallet Handling

dcvelocity.com/media/videos/play/2640-niagara-bottling-a-showpiece-for-integrated-robotic-pallet-handling

DC Velocity

Based in Diamond Bar, California, Niagara Bottling, LLC (Niagara) is a leading beverage bottler in the U.S., supplying major retailers across the nation. The company is the largest provider of private-label bottled water in America. Family-owned since 1963, Niagara owns and operates 35 combined production/distribution facilities throughout the U.S. and Mexico, bottling purified water, spring water, distilled water, alkaline water, sparkling water, its V-ssentials® brand vitamin enhanced water, and Tea Joy® brand bottled tea.

In 2010, Niagara decided to invest in automation and selected E80 Group (E80) as key partner to automate its operations.

“For our warehouse automation we were using forklifts, double front end forklifts, to move our product around,” said Bill Hall, Executive VP Manufacturing & Engineering at Niagara. “In 2009 I was touring a plant that had E80 LGVs in operation, and I thought we could apply LGVs in our distribution. I was particularly interested in loading pallets onto trucks with LGVs for shipping, which E80 LGVs were capable of doing. We had E80 automate one of our plants and have continued partnering with them to automate our remaining facilities.”

Since 2010, E80 has automated the distribution operations of Niagara’s 34 plants with fleets of unmanned LGVs moving pallet loads from end-of-line bottling throughout all phases of distribution, including pallet rack storage, floor staging for shipping, and loading directly into truck trailers for shipping.

“The LGVs floor stack everything in our facilities,” added Hall. “They handle 2,500 lb. pallets of water, while each of our facilities are making 50 – 60 turns of inventory annually.”

These distribution functions are standardized for each of these facilities, and custom-integrated with E80’s software warehouse control system (WCS), which ties into Niagara’s ERP within each plant. All distribution functions are fully coordinated and controlled by E80’s software, enabling to streamline finished goods and raw material handling.

Watch the video to see how integrated automation has streamlined and supported Niagar’s overall efficiency.

For more information, please visit www.e80group.com

E80 Group – Chicago, Ill.

businessviewmagazine.com/e80-group

E80 Group

E80 Group keeps the world moving

An Italian company maintains deep links in North American markets

E80 Group is a global company, headquartered in Italy, that specializes in automated intralogistics solutions for the manufacturers and distribution centers of consumer goods, supply chain-related matters, and storage.

Also known as E80, its North American HQ is in Chicago, IL. It offers laser-guided vehicles for material handling and automated warehousing, ASRS, automatic palletizers, robotic labeling systems, case picking systems, and wrapping systems. The company caters to food, beverage, tissue, and other such diversified sectors.

We recently spoke with E80 Group Inc. EVP of Sales Andrea Pongolini, and he told us more about this vast organization centered around materials handling functions. Pongolini credits Enrico Grassi with birthing the company in 1980. Grassi is still the major shareholder and the company's president.

"It started as a software company," Pongolini recalls.

"After a few years, Mr. Grassi realized that to provide tangible benefits to our industry, we had to provide both hardware and software. We started to produce and design the innovative hardware needed for our project. Nowadays, E80 is a leading provider of material-handling systems that allow our customers to fully automate the production facility and distribution center."

He adds E80 can control with its proprietary software platform all the logistic business decisions from raw packaging materials to finished goods handling and shipment. To adjust for the North American market, it made some changes, Pongolini notes.

"In 1994," he recalls, "E80 had only 48 employees, but we had the bright idea to open our first branch outside Italy. As Mr. Grassi used to say, 'If we succeed in the U.S., we can succeed anywhere else in the world,' and that was right. Right now, North America is our most important market, with many references that vary from large, international companies to privately held companies."

Indeed, it is. E80 has more than 100 employees in its Chicago office, 40 in Houston, and more than 200 in Monterrey, Mexico. There is a comprehensive support service.

Andrea Pongolini

“We have been implementing local service, 24/7 remote support and a key account structure to support our customers in the long-term,” says Pongolini.

He adds that what he calls an integrated supply chain approach has been a key factor in the company’s success since 2016.

He explains, “we have been partnering with strategic suppliers, which today are part of the E80 Group. Our short supply chain helped us during the pandemic. In fact, we were able to minimize the project delays because most of our system’s components are manufactured internally.”

One thing the company has seen in recent years is that both its current and potential customers have gained a deeper appreciation for the significance of automation in the support of their business. Many of E80’s potential customer clients who hesitated to embrace automation because of an initial capital investment have taken the plunge.

“Presently,” says Pongolini, “we have seen a lot of our clients returning to us and expressing interest in automation driven by their newfound understanding of the automation intangible advantages and their ability to demonstrate these advantages.”

A must-have

Today, intralogistics automated solutions are seen as a must-have implementation for any business with a chance to grow and keep a leadership position. The trend E80 anticipated is that it always believed end-to-end automation and integration have been the key factors to delivering customers tangible results.

“We also enhanced our software and our hardware to provide more opportunities to our customers. Now E80 is positioned to be a one-stop-shop company, able to provide real turnkey solutions, and we look forward to helping our customers take full advantage of total

automation, spanning from raw and packaged materials to the loading of finished goods onto trailers. To sum it up, our overarching vision has always centered on seamless end-to-end integration, and we're now actively working to seize this significant trend."

E80 doesn't look only at one part of automation. The company believes in fully integrated and automated systems, as Pongolini emphasizes.

"Many providers usually don't have the technology to fully automate customers' plants," he reveals, "focusing on a few automation solutions, for instance going from A to B. Instead, E80 partners with the customer. We look at the plant or distribution center in its totality and globality. We do a simulation of the whole plant. We have come up with a solution to automate every single movement within the four walls of that facility, including software integration."

E80 offers comprehensive software solutions that seamlessly handle hardware management and cater to all customer requirements, integrating with existing ERP (Enterprise Resource Planning) and WMS (Warehouse Management System) systems.

"This, from our point of view, is the end to end," says Pongolini. "We have software and hardware solutions that can turn a manual plant or manual distribution center into a fully automated solution."

The role of AI

Artificial intelligence (AI) plays a big part, too.

“We already rely on AI to make predictions and decisions about what our systems are doing,” says Pongolini. “It is still in its infancy, from our point of view, but we are already experimenting and trying it.” It’s bringing profitability to E80’s table.

“From my point of view,” says Pongolini, “we have always provided solutions that give tangible benefits to our customers. In this way, we have built up a long-term partnership and repeat business with them. Our customers know what they need to increase their profitability and they are not shy when it comes to telling us.”

“So, we always try to listen to them. Our investment in R&D and new technologies have been guided by our customer’s needs. We believe this is the only way to grow and progress, we want to do it along with our customers.”

A good customer base

He also described the company’s customer base.

“We have been focusing historically always on the CPG (consumer packaged goods) industry,” says Pongolini, “so the majority of our references are in the consumer goods companies. We work with all the big ones in North America. These are very recognizable brands. When you go to the supermarket in the main aisles, you will see all of our customers.”

Right now, in North America, E80 is implementing 50 large automation systems. Some of them are greenfields, and some of them are at existing facilities that will be completely upgraded from manual to automatic.

“I’m going to give you two examples to show you the type of project we are executing,” says Pongolini. “For instance, right now we are implementing a greenfield. It’s a bottling plant that will have seven high-speed bottling lines. E80 will supply equipment and software for complete automation, spanning from palletizers at the end of the production lines to trailer loading.

“Also,” he adds, “E80 will supply palletizers, stretch wrappers, labelers for end-of-line applications, LGVs for raw and packing material handling, packaging material delivery, finished product pickup, and trailer loading. Additionally, an ASRS system with cranes for storing approximately 60,000 pallet positions and empty pallet inspection systems will be implemented. This comprehensive material handling automation initiative is expected to yield significant cost savings, enhance plant efficiency, improve product quality, and enhance safety.”

E80 is currently working on another project that involves enhancing and upgrading an existing one-million-square-foot food industry distribution center, as Pongolini points out.

“We are going to transform it,” as he reveals, “from fully manual to completely automated by replacing all existing forklifts with AGVs (automated guided vehicles) and implementing a fully automated layer and case picking system. What makes this project unique is the size.”

“We are going to be able to fully automate the case-picking operations. We are also going to use all the existing racks so no modification would be required. We are planning to do this implementation without any disruption to the day-to-day customer activities. That makes it very challenging.”

With great support comes great results, says Pongolini.

“Right now,” he says, “I would say 80 percent of our business in North America is from repeat business from existing customers. We are very proud of that!”

Laser-Guided Vehicles: Supporting Sustainability in Manufacturing and Distribution

Compared to conventional lift trucks, LGVs provide more consistent throughput of pallets between manufacturing and distribution functions, less damage to racking, raw materials and merchandise, reduced labor requirements, and lower cost of operation.

Jim McMahon for | E80 Inc

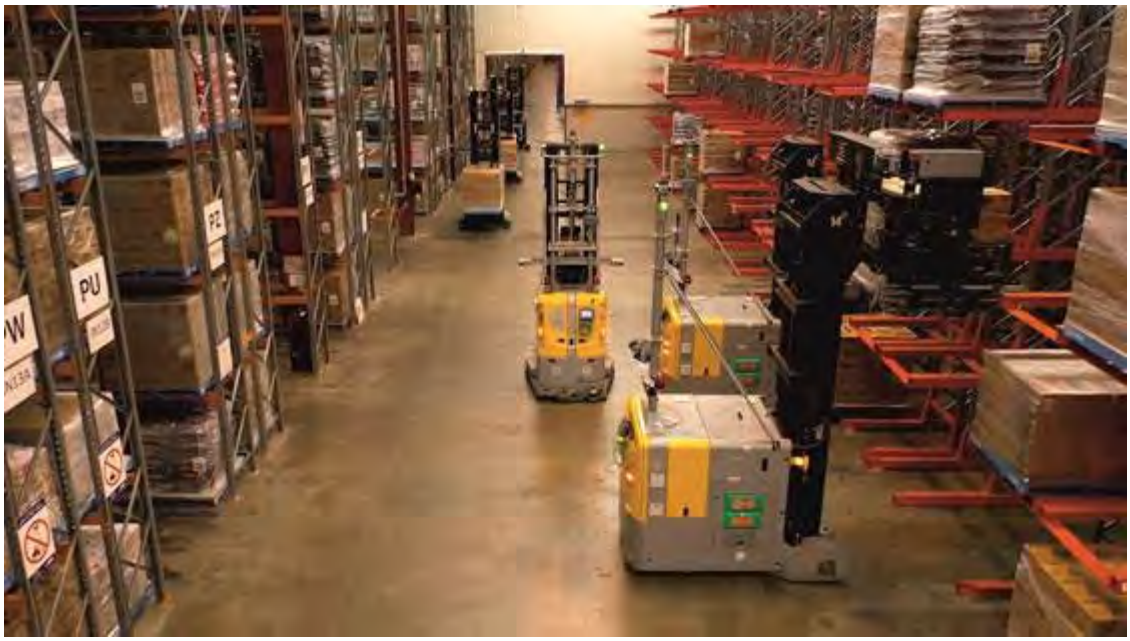
Technology advances in automated manufacturing and distribution have enabled a more integrated approach for the operation of material handling systems, which, in turn, has provided significant advantages for increased throughput, system uptime and a better ROI. Along with this technological evolution, an accelerated capability for streamlined energy management, energy efficiency and sustainability has also become possible, allowing ambient-temperature, deep-freeze and chilled distribution facilities to better manage their power draw, energy utilization, systems integration and overall operational costs.

In recent years, a number of material handling manufacturers have literally gone back to the drawing board and reengineered many of their material handling systems from the ground up to improve energy efficiency and sustainability, while maintaining these systems' load-carrying capability. One of these systems is laser-guided vehicles (LGVs), which, at least one manufacturer has significantly improved the performance of lithium batteries to keep its LGVs operating on the floor longer, even in challenging deep-freeze temperatures, while increasing battery life, and reducing battery recharging time and energy draw. These LGVs,

operating with highly-sophisticated real-time controls, have enabled their integration with plant-wide packaging, storage and distribution functions, effectively optimizing plant footprint and throughput, thereby enhancing sustainability initiatives.

Laser-Guided Vehicles

Laser-guided vehicles enable significant efficiencies to manufacturing and distribution. They improve production flow by bringing material to the operators, thereby cutting cycle times, and eliminating wait, walk and search time. They reduce work-in-progress inventory. They cut labor costs by eliminating simple jobs related to material and movement, and permit reassignment of those workers to areas where they can add more value to the facility. LGVs virtually eliminate product damage with gentle handling of loads, and provide flexibility of process flow and throughput, as needs change.



LGVs are designed to handle various pallet types, with loads up to 3,400 lbs. (Image courtesy E80)

LGVs provide for movement of pallets between integrated functions in manufacturing and distribution. Interfacing with multiple systems, LGVs enable reliable raw material and product handling, with near zero potential for product damage. Utilizing a combination of logic software and wireless navigation, LGVs can perform tasks that are not possible with other transport systems – such as the uniform movement and positioning of pallet loads to within a fraction of an inch of their designated targets, without noise, and with a high degree of safety for workers and their operational environment.

Latest Evolution of LGVs

The most recent automation developments in laser-guided vehicles for pallet movement enable warehouse operators and plant production supervisors to optimize for system flexibility, modularity and scalability.

Many types of LGVs exist for use in different industries, but for a large number of applications in manufacturing and distribution, LGVs are utilized for pallet movement. Four types of LGVs are commonly employed: 1) Fork AGVs; 2) Lift-deck/unit-load AGVs; 3) Conveyor-deck AGVs; and 4) Tugger AGVs.

Designed to handle various pallet types – such as CHEP, EURO, Blockpallet and Stringer, with load requirements up to 3,400 pounds, these LGVs are able to accommodate single-deep and double-deep racking with a telescope fork. Using a satellite remote unit, lane depth can be considerably extended.

LGVs accommodate single- and double-deep racking, and extended depths with satellite remote units. (Image courtesy E80)

Transporting heavy pallet loads, however, imparts huge forces upon these vehicles, resulting in significant maintenance and power requirements to keep LGV fleets functioning. The latest generation of LGVs, however, incorporates design, navigation, sensor, power and controls improvements that significantly streamline their prior operational performance.

An increasing number of supply chain manufacturers require 24-hour operation at maximum throughput in lights-out facilities. Today's latest generation of LGVs have been designed to efficiently meet and exceed these requirements.

An excellent example of this new evolution of laser-guided vehicles is E80's latest LGVs designed for pallet movement. E80 – a multinational leader specialized in creating automated solutions for companies that produce fast-moving consumer goods, particularly in

the food, beverage and tissue sectors – has been a leading manufacturer of LGVs for almost three decades. Some of the company's latest technology advances have made LGVs particularly attractive for sustainability, and particularly with reduced energy consumption through enhanced lithium flash-battery technology and wireless induction charging.

Lithium Flash Battery® Technology

A key factor in LGV operation is battery performance, which directly influences energy usage. Some of the latest technology advances in lithium-ion chemistries have made LGVs particularly attractive with reduced energy consumption. One of these is lithium Flash-Battery® technology.

Introduced for use with LGVs by E80, lithium Flash Battery technology, developed by Flash Battery Srl, provides a higher level of performance than other batteries for industrial vehicles. Flash Battery technology uses the safest and most stable chemistry available, lithium iron phosphate (LiFePO4), which is cobalt-free (material with high environmental impact) and delivers well-defined performance and long-term stability. Having a very constant discharge voltage, Flash Battery technology allows the LGV to maintain the same performance at every state of charge.

The cells in a lithium battery are not all the same and have small differences in capacity, internal resistance and self-discharge. These differences lead to an imbalance among them. The response of conventional systems is to perform long balancing charges several times a week, which translate into dozens of hours a week of LGV downtime at charging stations. To avoid these problems and keep efficiency high, Flash Battery electronics employs a patented high-power balancing system, with active and passive mode, 20 times faster than conventional balancing. This allows the cells to be equalized in just a few tens of minutes once every 2-3 weeks. Only one lithium Flash Battery is required for each LGV, with an expected lifetime ranging from 6 to 10 years depending on the consumption of the specific plant.

Supporting the performance of LGVs using Flash Battery technology, E80's Flash Data Center daily monitors and controls every battery of the fleet integrated system to ensure the LGV network maintains its battery potential in peak performance to maintain plant uptime and efficiency.

Lithium Flash Battery technology, a better solution for LGV operation. (Image courtesy E80)

Reduced Energy Usage

The importance of reducing energy consumption and better management of energy utilization becomes a more critical issue as energy costs escalate, and manufacturing and logistics operations are pressured to lower operating costs without loss of productivity. This is driving the evolution of more energy-efficient material handling systems, along with the analytic tools and controls to optimize their operation.

LGVs with lithium flash-battery technology, combined with wireless induction charging, can deliver a considerable reduction in energy usage, when compared to LGVs using lead acid batteries.

Compared to pallet conveyors which require considerable energy to power their motors, the power requirements for LGVs using flash-battery technology are up to 30 percent less to move the same load weight over the same distance in a manufacturing or distribution facility.

Integrated-Plant Supports Sustainability

The smooth functioning of LGVs is dependent on their controls system, which has the task of coordinating the orders received from the plant's process system or warehouse management system, or ERP, then directing the work for the automated guided vehicles.

But the latest-generation of LGV control systems can do much more. For example, Smart Integrated Logistics (SM.I.LE80®) from E80, ensures the **integrated and automated management of systems and flows,** communicating with production lines, palletizers and wrappers, as well as coordinating the movement of pallets in the warehouse, through to shipping. The entire logistics flow of the manufacturing and distribution environment can be

centrally managed from an integrated-logistics **software platform** that ensures the efficient integration and optimization of all operations. Such a controls system also guarantees total product traceability and safety throughout the facility's supply chain.

Optimizing LGVs for energy efficiency. (Image courtesy E80)

These controls optimize for system flexibility, modularity and scalability. The net result is better utilization of the facility's footprint. Off-site storage, so common in manufacturing, can now be consolidated back into the main plant, reducing vehicle travel and energy needed to power the off-site locations, particularly so in chilled and deep-freeze storage. This supports sustainability.

Control systems like SM.I.LE80 also enhance predictive maintenance and cloud-based condition-based maintenance by providing better visibility to the operating state of every machine within the integrated environment, in real time. This not only means improved system uptime, but supports sustainability. More efficiently operating machines make better use of energy consumption, and reduce leakages of lubricants and other chemicals into the environment, particularly so with rotating equipment which is so prevalent is manufacturing and distribution facilities.

These latest high-performance LGVs for pallet movement, and their controls systems, pack extreme improvements in battery performance, energy utilization and vehicle uptime. These factors make LGVs serious systems in any manufacturing or distribution facility seeking to upgrade its sustainability initiatives.

INNOCENT'S BLENDER: THE SAFE AND SUSTAINABLE SMART FACTORY

SPONSORED

A leap forward in innovation and sustainability, from ingredients processing to warehouse and shipping

Starting as a smoothie stall at a music festival in London in 1998, **innocent is one of Europe's leading juice and smoothie manufacturers**. The reason for their success? They went the extra mile in terms of creating preservative-free and not-from-concentrate smoothies with a clear focus on sustainability.

THE COMMITMENT TOWARD DECARBONISATION

"The c*limate crisis is moving faster than climate action*": as a signatory to the Business Ambition for 1.5°C, **innocent recognizes that the planet is at a critical juncture** and is committed as part of its verified Science-based target (SBT) to reducing the carbon footprint per bottle (from farm to fridge) by 50% between now and 2030 as well as reduce our Scope 1&2 emissions to zero by the same timeframe.

A FACTORY BETTER FOR THE PLANET

On its path towards decarbonization, innocent built the so-called "the Blender" at the Port of Rotterdam; this location facilitates the reception of raw materials, thereby removing significant amounts of carbon from their supply chain. The Blender is indeed a factory that has thought about sustainability at every step of the design process: "*It will be a factory that's better for the planet, the people, and our business, as we believe in being a business that's good all around. We are big fans of collaboration and inspiring wider change, and we hope by sharing our learnings from the Blender we can play a part in shaping the future of sustainable production.*"

INNOCENT DRINKS AND E80 GROUP

innocent's demand was to design a state-of-the-art factory, fully automated and integrated, with a strong focus on performance, safety, and carbon footprint reduction. **E80 Group has been able to fully satisfy the requirements** by offering a turnkey solution.

contributing to developing one of the most advanced smart factories in the beverage sector. From raw and packaging materials to storage and shipping of the finished products: all is managed, handled, and controlled by E80 via its unique and powerful **SM.I.LE80 software platform**.

E80 Group's Robotic Palletizer

At the Blender, **9 E80 automatic laser guided vehicles (LGVs) efficiently coordinate the distribution of all the ingredients** into a 1500-pallet capacity store up to 8,8 meters high, which is a temperature-controlled warehouse that allows to conserve quality at a temperature that varies from 0° to 4°C. E80 LGVs then bring the ingredients to the blending department according to the juice's recipes.

In the production hall, **15 E80 automatic vehicles feed the machines with packaging and raw materials** required and collect the finished products from the **E80 robotic palletizers equipped with a universal gripper** that manages all different SKUs without any changeover. The LGVs then transfer these pallets to the E80 wrapping and labeling islands.

Smoothies and packaging materials are stored in the E80 AS/RS high-density warehouse with 12.000 pallet locations and segregated areas for finished goods and packaging materials. **The temperature-controlled crane store ensures the beverages' preservation at a 4°C temperature**, **maximum energy savings, and minimum maintenance costs** while presenting a high selectivity, a fundamental requirement for this business.

E80 Group's Quad LGVs

Finally, the automatic laser-guided vehicles retrieve the finished good pallets from the AS/RS and take them to the shipping docks, where **every single delivery is prepared according to the customer order and placed onto gravity racks**, facilitating and accelerating the loading process. Every day, up to 165 pallets are safely and efficiently transported throughout Europe in a 16-hour period.

Performance and safety are also guaranteed by the automatic empty pallet inspection system, which controls up to 200 pallets/hour and guarantees that only pallets complying with the customer's requirements are reaching the production hall, avoiding any issue at the palletizers and even more importantly inside the high bay warehouse and during the truck loading.

During the factory's nonstop operations, E80 Group stands always by the innocent's side, thanks to the **remote 24/7 available customer service**, which assures constant support to the Blender, protecting its investment over time.

TECHNOLOGY FOR SAFETY AND SUSTAINABILITY

Overall, the brand-new, innovative factory will concretize the founders' requirements, ensuring high capacity, while striving for a healthy and safe workplace. As the team claims: "*What makes the Blender special is that we have a great set of tasty and high-quality products we pay attention to, but we also have an amazing team and a modern process and systems.*" Following the policy to do business in the right way, **as of 2018 innocent is officially a B Corporation – a certification acquired thanks to verified high social and environmental performance**.

HIGHLIGHTS:

- Thanks to E80 solutions, innocent manages the entire factory flow, from ingredients to warehousing and shipping.
- The Blender's production chain is entirely integrated by E80's complete range of systems.
- By using LGVs instead of kilometers of conveyors and hundreds of motors for material handling, innocent lowers overall energy consumption and carbon emissions, as well as packaging and raw material waste.

Walk in innocent Blender:

If you can't see the video remember to enable Embedded Videos Cookies

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Laser-guided vehicles: Supporting sustainability in manufacturing and distribution

australianmanufacturing.com.au/laser-guided-vehicles-supporting-sustainability-in-manufacturing-and-distribution

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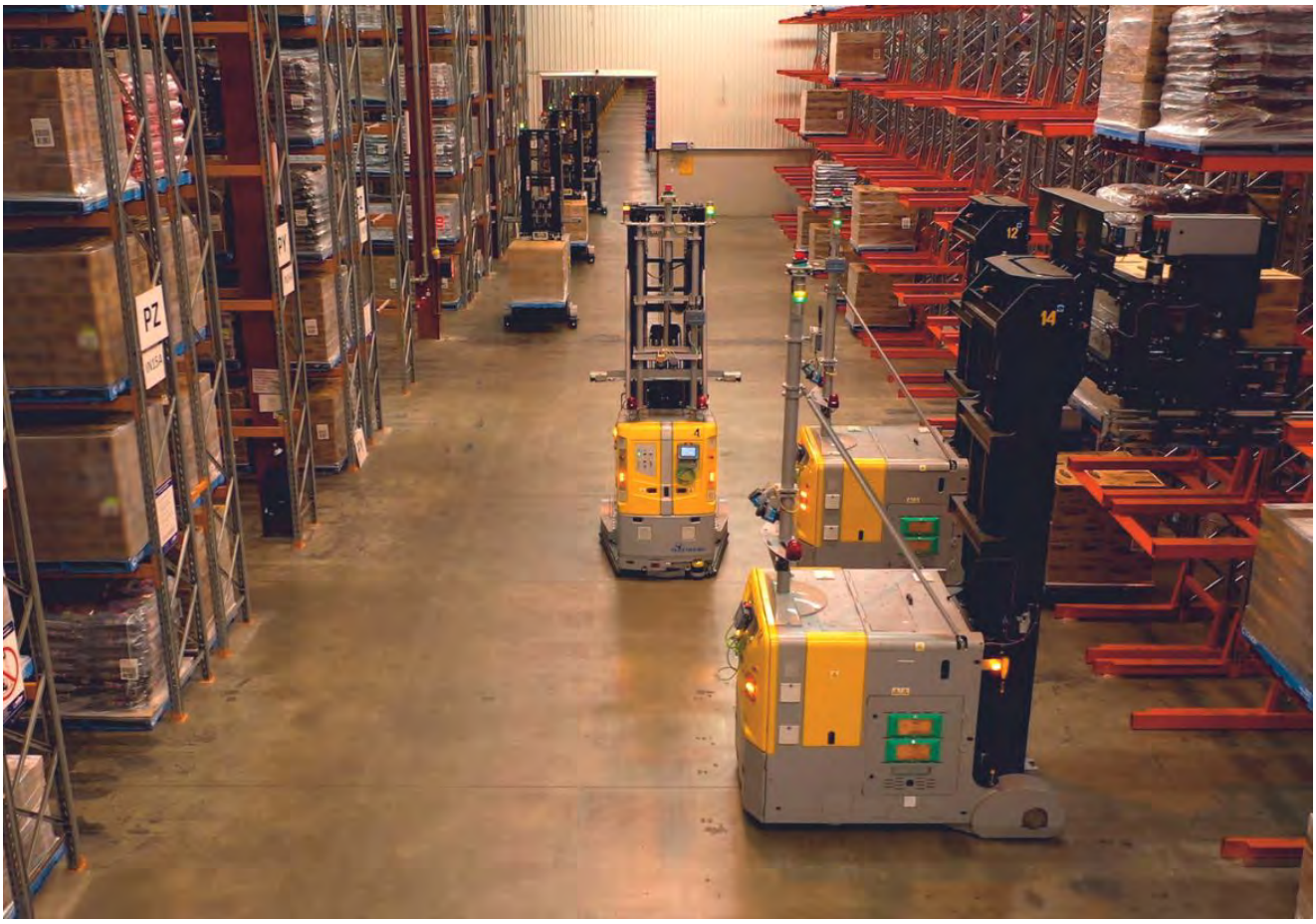


Image supplied.

Article by Jim McMahon, CEO of ZebraCom, Inc.

Laser-guided vehicles (LGVs) are increasingly utilized in a growing number of manufacturing and distribution facilities, and for good reason.

Compared to conventional lift trucks, LGVs provide more consistent throughput of pallets between manufacturing and distribution functions, less damage to racking, raw materials and merchandise, reduced labor requirements, and lower cost of operation.

Although recognized as a more sustainable option to lift trucks, the latest high-performance LGVs for pallet movement – such as those manufactured byE80 – pack extreme improvements in battery performance, energy utilization, vehicle uptime, CO2 reduction, and

enable a more integrated and space-optimized facility, making these LGVs serious systems in any manufacturing or distribution facility seeking to upgrade its energy sustainability initiatives.

Technology advances in automated manufacturing and distribution have enabled a more integrated approach for the operation of material handling systems, which, in turn, has provided significant advantages for increased throughput, system uptime and a better ROI. Along with this technological evolution, an accelerated capability for streamlined energy management, energy efficiency and sustainability has also become possible, allowing ambient-temperature, deep-freeze and chilled distribution facilities to better manage their power draw, energy utilization, systems integration and overall operational costs.

In recent years, a number of material handling manufacturers have literally gone back to the drawing board and reengineered many of their material handling systems from the ground up to improve energy efficiency and sustainability, while maintaining these systems' load-carrying capability. One of these systems is laser-guided vehicles (LGVs), which, at least one manufacturer has significantly improved the performance of lithium batteries to keep its LGVs operating on the floor longer, even in challenging deep-freeze temperatures, while increasing battery life, and reducing battery recharging time and energy draw. These LGVs, operating with highly-sophisticated real-time controls, have enabled their integration with plant-wide packaging, storage and distribution functions, effectively optimizing plant footprint and throughput, thereby enhancing sustainability initiatives.

Laser-Guided Vehicles

Laser-guided vehicles enable significant efficiencies to manufacturing and distribution. They improve production flow by bringing material to the operators, thereby cutting cycle times, and eliminating wait, walk and search time. They reduce work-in-progress inventory. They cut labor costs by eliminating simple jobs related to material and movement, and permit reassignment of those workers to areas where they can add more value to the facility. LGVs virtually eliminate product damage with gentle handling of loads, and provide flexibility of process flow and throughput, as needs change.

LGVs provide for movement of pallets between integrated functions in manufacturing and distribution. Interfacing with multiple systems, LGVs enable reliable raw material and product handling, with near zero potential for product damage. Utilizing a combination of logic software and wireless navigation, LGVs can perform tasks that are not possible with other transport systems – such as the uniform movement and positioning of pallet loads to within a fraction of an inch of their designated targets, without noise, and with a high degree of safety for workers and their operational environment.

Latest Evolution of LGVs

The most recent automation developments in laser-guided vehicles for pallet movement enable warehouse operators and plant production supervisors to optimize for system flexibility, modularity and scalability.

Many types of LGVs exist for use in different industries, but for a large number of applications in manufacturing and distribution, LGVs are utilized for pallet movement. Four types of LGVs are commonly employed: 1) Fork AGVs; 2) Lift-deck/unit-load AGVs; 3) Conveyor-deck AGVs; and 4) Tugger AGVs.

Designed to handle various pallet types – such as CHEP, EURO, Blockpallet and Stringer, with load requirements up to 3,400 pounds, these LGVs are able to accommodate single-deep and double-deep racking with a telescope fork. Using a satellite remote unit, lane depth can be considerably extended.

Transporting heavy pallet loads, however, imparts huge forces upon these vehicles, resulting in significant maintenance and power requirements to keep LGV fleets functioning. The latest generation of LGVs, however, incorporates design, navigation, sensor, power and controls improvements that significantly streamline their prior operational performance.

An increasing number of supply chain manufacturers require 24-hour operation at maximum throughput in lights-out facilities. Today's latest generation of LGVs have been designed to efficiently meet and exceed these requirements.

An excellent example of this new evolution of laser-guided vehicles is E80's latest LGVs designed for pallet movement. E80 – a multinational leader specialized in creating automated solutions for companies that produce fast-moving consumer goods, particularly in the food, beverage and tissue sectors – has been a leading manufacturer of LGVs for almost three decades. Some of the company's latest technology advances have made LGVs particularly attractive for sustainability, and particularly with reduced energy consumption through enhanced lithium flash-battery technology and wireless induction charging.

Lithium Flash Battery Technology

A key factor in LGV operation is battery performance, which directly influences energy usage. Some of the latest technology advances in lithium-ion chemistries have made LGVs particularly attractive with reduced energy consumption. One of these is lithium Flash-Battery® technology.

Introduced for use with LGVs by E80, lithium Flash Battery technology, developed by Flash Battery Srl, provides a higher level of performance than other batteries for industrial vehicles. Flash Battery technology uses the safest and most stable chemistry available, lithium iron phosphate (LiFePO4), which is cobalt-free (material with high environmental impact) and

delivers well-defined performance and long-term stability. Having a very constant discharge voltage, Flash Battery technology allows the LGV to maintain the same performance at every state of charge.

The cells in a lithium battery are not all the same and have small differences in capacity, internal resistance and self-discharge. These differences lead to an imbalance among them. The response of conventional systems is to perform long balancing charges several times a week, which translate into dozens of hours a week of LGV downtime at charging stations. To avoid these problems and keep efficiency high, Flash Battery electronics employs a patented high-power balancing system, with active and passive mode, 20 times faster than conventional balancing. This allows the cells to be equalized in just a few tens of minutes once every 2-3 weeks. Only one lithium Flash Battery is required for each LGV, with an expected lifetime ranging from 6 to 10 years depending on the consumption of the specific plant.

Supporting the performance of LGVs using Flash Battery technology, E80's Flash Data Center daily monitors and controls every battery of the fleet integrated system to ensure the LGV network maintains its battery potential in peak performance to maintain plant uptime and efficiency.

Reduced Energy Usage

The importance of reducing energy consumption and better management of energy utilization becomes a more critical issue as energy costs escalate, and manufacturing and logistics operations are pressured to lower operating costs without loss of productivity. This is driving the evolution of more energy-efficient material handling systems, along with the analytic tools and controls to optimize their operation.

LGVs with lithium flash-battery technology, combined with wireless induction charging, can deliver a considerable reduction in energy usage, when compared to LGVs using lead acid batteries.

Compared to pallet conveyors which require considerable energy to power their motors, the power requirements for LGVs using flash-battery technology are up to 30 percent less to move the same load weight over the same distance in a manufacturing or distribution facility.

Integrated-Plant Supports Sustainability

The smooth functioning of LGVs is dependent on their controls system, which has the task of coordinating the orders received from the plant's process system or warehouse management system, or ERP, then directing the work for the automated guided vehicles.

But the latest-generation of LGV control systems can do much more. For example, Smart Integrated Logistics (SM.I.LE80®) from E80, ensures the integrated and automated management of systems and flows, communicating with production lines, palletizers and wrappers, as well as coordinating the movement of pallets in the warehouse, through to shipping. The entire logistics flow of the manufacturing and distribution environment can be centrally managed from an integrated-logistics software platform that ensures the efficient integration and optimization of all operations. Such a controls system also guarantees total product traceability and safety throughout the facility's supply chain.

These controls optimize for system flexibility, modularity and scalability. The net result is better utilization of the facility's footprint. Off-site storage, so common in manufacturing, can now be consolidated back into the main plant, reducing vehicle travel and energy needed to power the off-site locations, particularly so in chilled and deep-freeze storage. This supports sustainability.

Control systems like SM.I.LE80 also enhance predictive maintenance and cloud-based condition-based maintenance by providing better visibility to the operating state of every machine within the integrated environment, in real time. This not only means improved system uptime, but supports sustainability. More efficiently operating machines make better use of energy consumption, and reduce leakages of lubricants and other chemicals into the environment, particularly so with rotating equipment which is so prevalent is manufacturing and distribution facilities.

These latest high-performance LGVs for pallet movement, and their controls systems, pack extreme improvements in battery performance, energy utilization and vehicle uptime. These factors make LGVs serious systems in any manufacturing or distribution facility seeking to upgrade its sustainability initiatives.

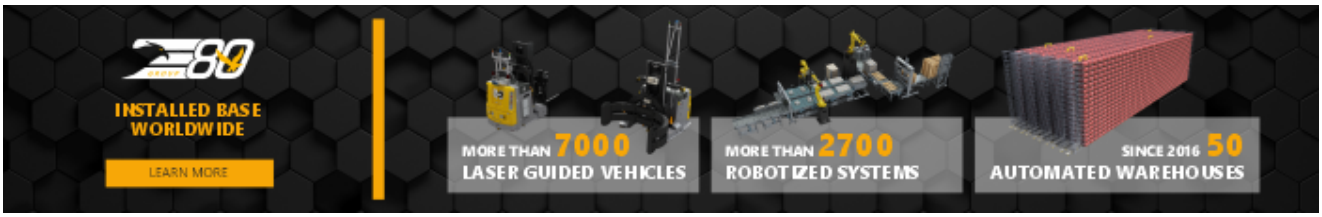
Drenik invests in E80 Group systems to become a Factory 4.0

tissueonlinenorthamerica.com/drenik-invests-in-e80-group-systems-to-become-a-factory-4-0

With a 200,000 m^2 plant just a few kilometers from Belgrade and a second 170,000 m^2 plant in Hungary, Drenik has a strong tradition in the production and distribution of tissue products that began in 1995. With a total annual production capacity of more than 110,000 tons of paper, the company is among the largest producers in the Tissue market in Southeastern Europe.

Drenik decided to revolutionize its existing factory by investing in new state-of-the-art systems to become a Smart Factory 4.0. The company chose E80 Group, an Italian multinational company specializing in the development of automated and integrated intralogistics solutions for manufacturers and distributors of consumer goods mainly in the beverage, food and tissue sectors, which worked with Impex Continental as a key player to realize the project.

The first palletizing and wrapping lines will be implemented in the Belgrade plant in March 2024. The former are robotic and customized solutions that ensure efficiency, reliability, and accuracy over time, handling the entire layer of products while guaranteeing its integrity. The latter are automatic wrapping machines, that have revolutionized the concept of stretch film wrapping by integrating robotics with the use of 1000 mm film reel and rotating product, thanks to the electrical axes patented functions.



To monitor and manage all the operations, E80 Group provides advanced software that integrates with the customer's ERP for the complete coordination of activities, from the automatic creation of product palletizing recipes to data analysis. The implementation of the new systems will be completed by the end of next year, marking a new era for the plant.

Drenik’s goal is to have production lines that, from start to finish, constitute the ultimate in productivity, flexibility and quality. The company has been supported by E80 Group with innovative systems that reflect technological evolution.

The second phase of the investment will be realized in September 2024, with the goal to become a Smart Factory by 2025.

These investments demonstrate Drenik’s determination to adapt to the challenges of the future and continue to provide its customers with high-quality products, keeping pace with market changes.

Niagara Bottling’s Latest DC, a Showpiece for Integrated Robotic Pallet Handling

FE foodengineeringmag.com/articles/101674-niagara-bottlings-latest-dc-a-showpiece-for-integrated-robotic-pallet-handling

Jim McMahon

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By Jim McMahon

Dual pallet movement with the model CB30 Dual Drive LGV. Image courtesy of E80

Supply chain executives in the food and beverage industry are faced with considerable challenges when balancing production runs, inventory volumes and delivery schedules. Warehouse managers are increasingly required to store more products in existing warehouses, to retrieve them faster for growing volumes of just-in-time orders to retail stores, make more efficient productive use of labor, reduce energy consumption and improve cost efficiencies.

Space utilization within production warehouses is at a premium, and these facilities are consistently running out of space. Finished products are frequently stacked on floors and aisles, which contributes to increased fork truck accidents and equipment damage, spillage

and damaged products, and lost and expired inventory. The continuous increase in the cost of land, construction, labor and facilities has put a heightened demand on space utilization within these production warehouses.

These factors have forced food and beverage manufacturers into utilizing 3PLs or renting outside space to store manufactured products. But this presents a new set of issues. Although most contemporary 3PLs run highly-efficient operations, transporting pallets of product to off-site storage incurs rental costs, increased transportation costs, and loss of last-touch product control which can increase product damage and returns.

Consequently, manufacturers are more closely looking at their distribution and storage models, and how they can more optimally balance their inventory against production and delivery.

A growing number of manufacturers are moving away from utilizing fork trucks, and instead employing fleets of laser-guided vehicles (LGVs). Similarly, they are shifting their high-volume, palletized SKUs away from stationary rack storage locations, away from floor staging, and away from remote warehousing sites. Instead, they are embracing highly-automated, robotic shuttle-based pallet deep-storage systems, which provide excellent density and flexibility to fit within existing variable-ceiling-height facilities.

Niagara Bottling's Automated Distribution

One such manufacturer is Niagara Bottling, LLC (Niagara). Based in Diamond Bar, Calif., Niagara is a leading beverage bottler in the U.S., supplying major retailers across the nation. The company is the largest provider of private label bottled water in America. Family owned since 1963, Niagara owns and operates 35 combined production/distribution facilities throughout the U.S., Canada and Mexico, bottling purified water, spring water, distilled water, alkaline water, sparkling water, its V-ssentials brand vitamin enhanced water and Tea Joy brand bottled tea.

In 2010, Niagara selected E80 Group (E80) to fully automate each of its distribution operations. E80 develops automated logistics solutions for consumer goods manufacturing and distribution, with a focus on integrated robotic systems, such as laser-guided vehicles (LGVs), robotic palletizing, layer picking and repacking, and automated storage and retrieval (AS/RS) high-density warehouses. The company has considerable experience in food and beverage.

"For our warehouse automation we were using forklifts, double front end forklifts, to move our product around," says Bill Hall, executive VP manufacturing & engineering at Niagara. "In 2009 I was touring a plant that had E80 LGVs in operation, and I thought we could apply LGVs in our distribution. I was particularly interested in loading pallets onto trucks with LGVs for shipping, which E80 LGVs were capable of doing. We had E80 automate one of our plants and have continued partnering with them to automate our remaining facilities."

Since 2010, E80 has automated the distribution operations of Niagara's 35 plants with fleets of unmanned LGVs moving pallet loads from end-of-line bottling throughout all phases of distribution, including pallet rack storage, floor staging for shipping, and loading directly into truck trailers for shipping.

"The LGVs floor stack everything in our facilities," adds Hall. "They handle 2,500 lb. pallets of water, while each of our facilities are making 50-60 turns of inventory annually."

These distribution functions are standardized for each of these facilities, and custom-integrated with E80's Smart Decision Maker (SDM) warehouse control system (WCS), which ties into Niagara's ERP within each plant. All distribution functions are fully coordinated and controlled by E80's SDM, enabling very streamlined robotic pallet handling.

Rialto DC: A Model for Robotic Pallet Movement and Storage

Niagara's latest plant in Rialto, Calif., is the company's biggest and most complex, producing 120,000 bottles of water and beverages per hour, 24/7/365, and employing a fleet of 56 E80 LGVs to move the palleted water and beverages through the warehouse into pallet rack storage and shipping.

Opened as a greenfield in 2016 servicing the Southern California market, the facility not only handles water, but also hot-fill beverages and soft drinks. In 2019 the plant planned to add three new process lines, bringing the total to nine lines, which would have eliminated too much of the facility's storage space. Essentially, more product would be produced than the warehouse, and its off-site storage locations, could store—multiple offsite locations were already being used for supplemental finished-product storage. Niagara wanted to reduce the Rialto plant's dependency on external warehouse space, while maintaining more control over the speed of delivery to its customers. The bottler turned to E80 to design a solution.

"We outgrew the Rialto facility very quickly and wanted to maximize the square footage of the building on the site," says Hall. "We looked at real estate expansion, but it was cost prohibitive in the Southern California market, so we decided to go with vertical storage inside of the building. Once we made that decision, we looked at three or four different suppliers, including E80 who has always been one of our preferred partners. We felt technology-wise, cost-wise and execution-wise E80 was the right choice."

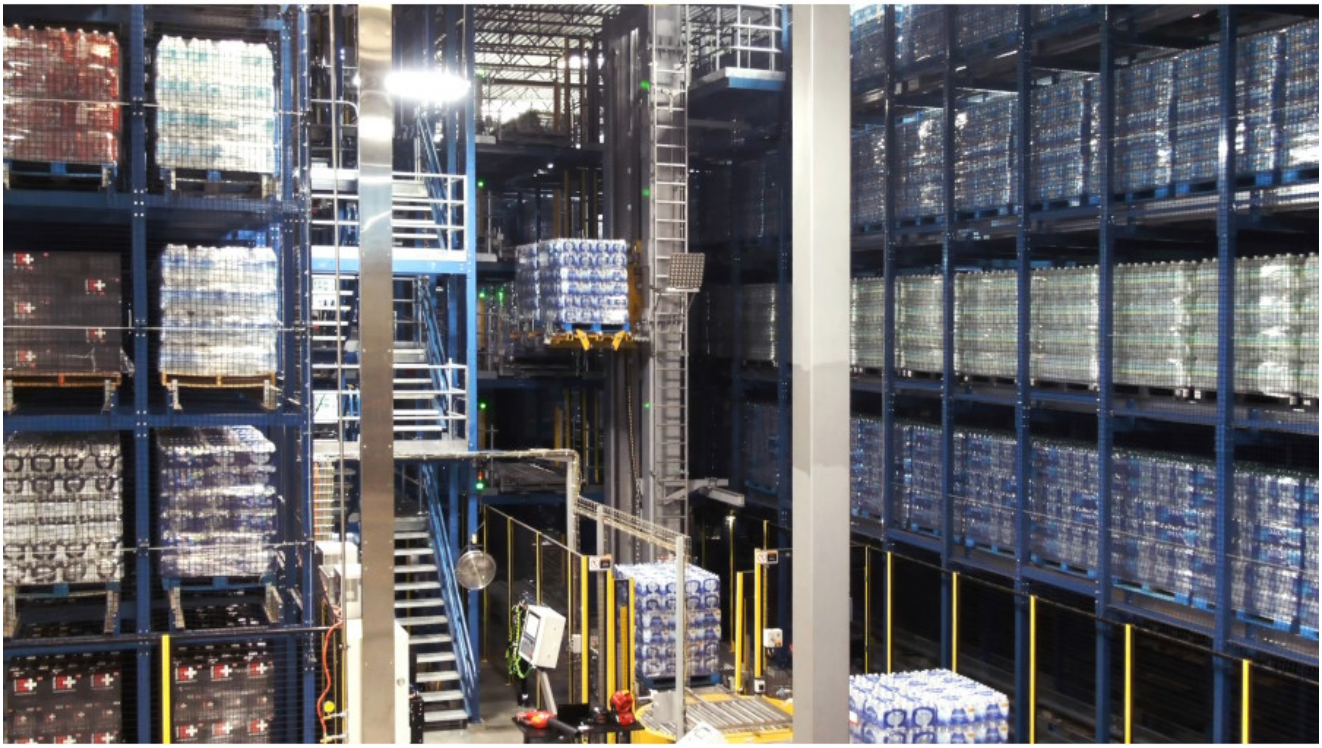
"The E80 engineering group, in conjunction with Niagara's logistics team, evaluated multiple options," says Luigi Dallasta, key account manager for E80. "We developed and assessed simulated models comparing different automated solutions to verify their functionality and process optimization."

High-Density Storage, Robotic Pallet Shuttle System

The solution proposed by the E80 team was to design a customized version of its SmartStore solution to be installed inside the Rialto distribution space. Essentially, a high-density 160,000-sq.-ft.five-level, mobile robotic shuttle-based storage and retrieval system

(AS/RS), with 33,000 pallet positions, designed for deep storage of palletized loads. The system would consist of five modular sections that can be expanded or contracted by adding or deleting pallet positions and shuttles, as future requirements may require. This would replace the existing pallet racking in the warehouse.\

“Although the SmartStore provided an ideal solution for pallet storage at the Rialto facility, it posed a significant challenge to execute the transition,” says Dallasta. “The challenge was two-fold. First, we had to build SmartStore within an existing building, and determine the module configurations to take full advantage of the space in the most efficient way, factoring in existing ceiling heights and supporting columns. Quite different from a greenfield solution.”



Rialto’s high-density SmartStore with 33,000 pallet locations. Image courtesy of E80

The second challenge was that this distribution facility was a high-volume working plant. Bottling production and distribution could not stop. The project needed to be executed with minimum impact on the working operation of the plant, a considerable challenge.

“During installation of SmartStore we expected to have some interruption of our existing throughput because we never could really shut the entire factory down,” says Hall. “We timed it to where the interruptions were during the off season to minimize the impact. E80 worked with us to keep the interruption down to about 20 percent of throughput at any given time. The modularity of SmartStore is what allowed us to continue to run during installation.”

The SmartStore solution delivers an option in automated pallet storage that is truly unique. By providing a dynamic combination of high density and high throughput, it enables a high-performance, lean and modular warehouse storage solution, designed to maximize capacity in either high-bay or lower-ceiling-height facilities, whether greenfield or brownfield sites. This is ideal for manufacturers in the food and beverage industries, like Niagara, whose operations demand flexible, high-density storage for high-volume SKU counts, and particularly those SKUs affected by seasonal volume fluctuations.

LGVs transfer pallets into and out of SmartStore. Image courtesy of E80

Palletized product is stored in five modules of highly dense rows, up to 20 pallets deep of the same SKUs. Lithium-ion battery-powered shuttles traveling at speeds up to 10 feet per second (fps) transport pallets within the system's aisles and rows. The shuttles carry a satellite on board that collects and transports the pallets in the channels of the rack, recharging the battery at the same time**.** Lifts and transfer stations vertically move pallets between aisle levels. The result is a solution of maximized storage density, operating frequencies and system modularity.

"SmartStore has proved to be a very dependable and repeatable ASRS solution," says Hall. "We are thrilled with the outcome."

Laser-Guided Vehicle Fleet

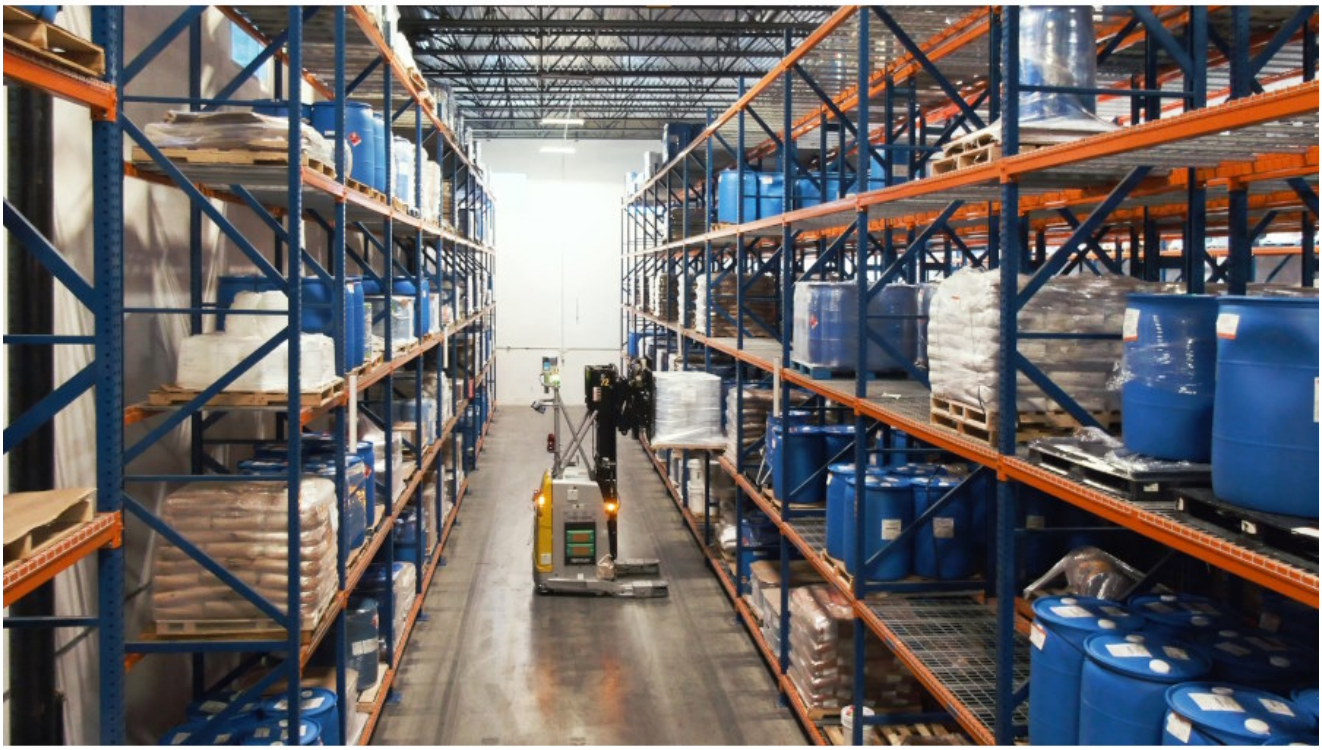
The Rialto warehouse fleet of 56 LGVs incorporate the most recent automation developments in laser-guided vehicles for pallet movement. Utilizing a combination of logic software and wireless navigation, these LGVs can perform tasks that are not possible with other transport systems—such as the uniform movement and positioning of pallet loads to within a fraction of an inch of their designated targets, without noise, and with a high degree of safety for workers and their operational environment.

“Most of the LGVs operating in the Rialto warehouse are transporting pallets, two at a time, from the nine stretch wrapper discharge locations in the end-of-line bottling area to the high-density storage induction platforms, or directly to floor staging in shipping,” says Dallasta. “Similarly, these LGVs transport pallets from high-density storage to floor staging in shipping. All pallets staged in shipping are loaded directly into trucking trailers with LGVs.”

Dual pallet movement with the model CB30 Dual Drive LGV. Image courtesy of E80

These LGVs are E80 model CB30 Dual Drive, with extendable forks and dual side-by-side pallet carrying capability. They can lift pallets to a height of 31 feet, with a lift capacity of up to 6,000 pounds, and a maximum speed of 4.9 feet per second.

The second type of LGV in operation in the Rialto warehouse is the E80 model Reach. It is utilized to store and supply raw material pallets to the bottling floor with items such as corrugated for packaging machines, stretch wrapper film, and ingredients for carbonated beverages. The pallets in the raw materials warehouse are stored in racks 4-5 levels high.



LGVs provide automated storage and movement of raw materials. Image courtesy of E80

The Reach LGV is a single-pallet vehicle with extendable forks for double-deep pallet storage. Used for selective storage systems where the LGV's forks allow it to pick and place multiple product codes. It can lift pallets to a height of 39 feet, with a lift capacity of up to 6,000 pounds, and a top speed of 4.9 feet per second. The vehicle is designed to maneuver in tight spaces with a turning radius of 10.2 feet.

Lithium-Ion Flash Battery Technology

"A key factor in LGV operation is battery performance, which directly influences energy usage," says Dallasta. "Some of the latest technology advances in lithium-ion chemistries have made LGVs particularly attractive with reduced energy consumption. One of these is lithium Flash-Battery technology, which is in use with the LGVs at Rialto."

Introduced for use with LGVs by E80, lithium Flash Battery technology, developed by Flash Battery Srl, provides a higher level of performance than other batteries for industrial vehicles. Flash Battery technology uses the safest and most stable chemistry available, lithium iron phosphate (LiFePO4), which is cobalt-free (material with high environmental impact) and

delivers well-defined performance and long-term stability. Having a very constant discharge voltage, Flash Battery technology allows the LGV to maintain the same performance at every state of charge.

Rialto's LGVs are powered by Lithium Flash Battery technology. Image courtesy of E80

The cells in a lithium battery are not all the same and have small differences in capacity, internal resistance and self-discharge. These differences lead to an imbalance among them. The response of conventional systems is to perform long balancing charges several times a week, which translate into dozens of hours a week of LGV downtime at charging stations. To avoid these problems and keep efficiency high, Flash Battery electronics employs a patented high-power balancing system, with active and passive mode, 20 times faster than conventional balancing. This allows the cells to be equalized in just a few tens of minutes once every 2-3 weeks. Only one lithium Flash Battery is required for each LGV, with an expected lifetime ranging from 6 to 10 years depending on the consumption of the specific plant.

Supporting the performance of the Rialto facility's fleet of LGVs and its Flash Battery technology, E80's Flash Data Center continually monitors and controls every battery of the fleet integrated system to ensure the LGV network maintains its battery potential in peak performance to maintain LGV uptime and efficiency.

“The availability of these LGV assets is really high,” says Hall. “This LGV technology does really well in a repetitive manufacturing and logistics environment, like Niagara’s. Keeping our assets in prime operating condition is one of the key pillars we believe in at Niagara that drives our manufacturing culture, safety culture and maintenance culture. E80's Flash Data Center fully supports this initiative.”

Integrated Warehouse Controls
The smooth functioning of Rialto’s LGV fleet and SmartStore is dependent on E80’s SDM WCS, which coordinates orders received from the plant's ERP, then directs the work to the LGVs and SmartStore to execute. SDM controls the traffic of the LGVs in the warehouse, and where pallets will be stored in SmartStore and shipping.

“SDM ensures that the automated systems (LGVs and shuttles) are used in the most efficient way to distribute the workload to available resources, optimize LGV routes and balance throughput and product distribution in SmartStore,” says Dallasta. “The WCS also plans product movement between different warehouse areas to maximize warehouse saturation. It identifies opportunities for optimization and defragmentation as required.”

It ensures the integrated and automated management of systems and flows, communicating with the nine bottling line palletizers and wrappers. The entire logistics flow of the distribution environment is centrally managed from one integrated logistics platformthat manages the coordination and optimization of all operations. The SDM controls system guarantees total product traceability and safety throughout the Rialto facility's supply chain.

Niagara has standardized on the SDM WCS not only in its Rialto warehouse, but in all of its plants. This integrated standardization has streamlined and supported the company’s overall efficiency.

“The SDM software is really performing well for our inventory, tracking and visibility, well above 99 percent accuracy in all of our facilities,” explained Hall. “It is fully integrated straight to our ERP, so all of the information is automatically handed off between SDM and our ERP. It gives us confidence in our finished goods inventory, and is an easy tool to use at the facility level as well as for our senior management at our headquarters.”

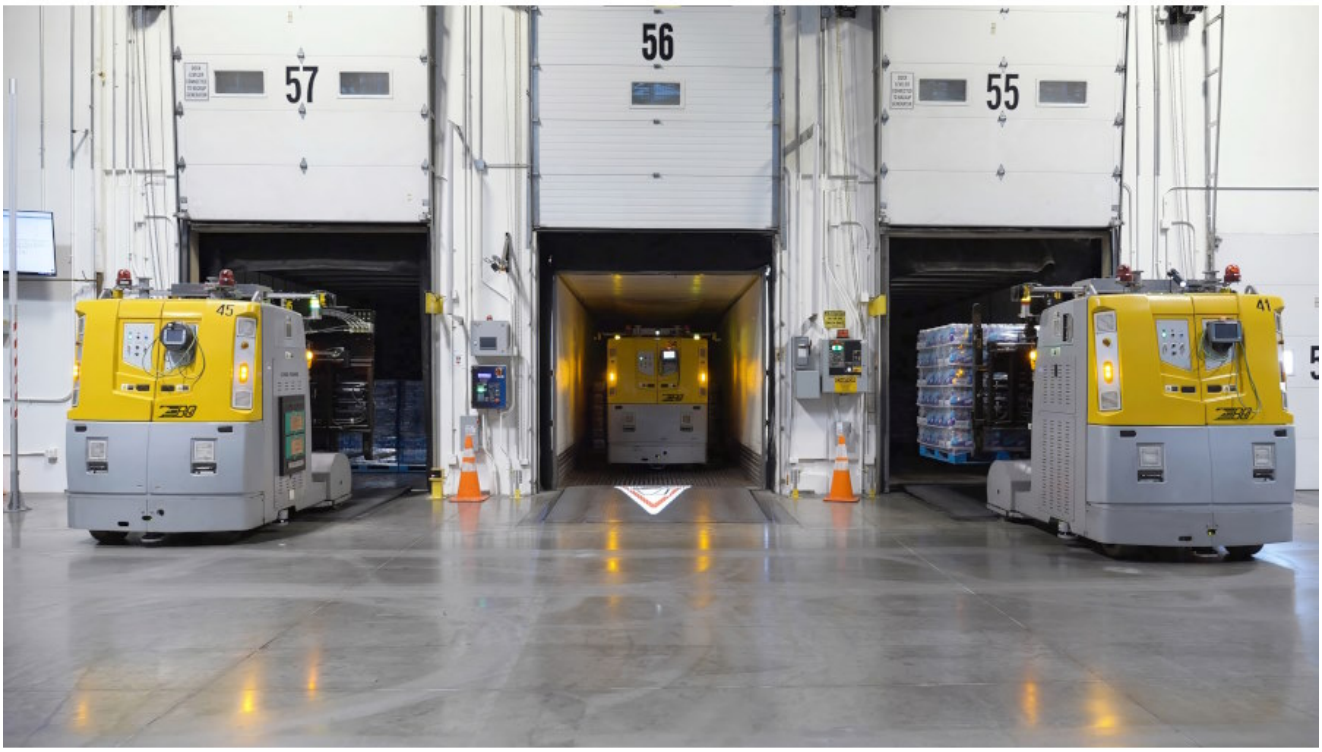
Performance
Fully operational since June 2021, the benefits to Niagara’s Rialto distribution facility include elimination of downtime, mistakes and product damage; reduced distribution costs; shorter delivery times; and improved sustainability of the warehouse’s supply chain.

LGVs maneuver pallets to and from block staging for shipping. Image courtesy of E80

Niagara builds approximately five new facilities each year. Each operation needs to utilize its square footage optimally. Turnaround and process time is very important. How fast it can turn a truck through its facilities is critical.

“This facility not only has the most advanced high-speed bottling lines, it now boasts a warehouse of system-optimized flexibility, modularity and scalability, says Dallasta.”

“E80 automation has taken the warehouse from 40 square feet per pallet position down to 20 square feet per pallet position,” says Hall. “It has taken mission time from 12 minutes down to 6 to 7 minutes. LGVs require less traffic to do the same job.”



Unmanned LGVs load pallets into trucks in shipping. Image courtesy of E80

“It is all very seamless,” says Hall. “This is one of the beautiful things about choosing E80 for our LGVs and SmartStore. The LGVs are upstream and downstream of SmartStore, and E80 is handling all of the transactions. The integration is really very easy for our leadership team.”

Over the last 20 years Niagara has become the biggest water company in the U.S.,” says Hall. “Maybe, by volume, the biggest in the world. Now, for the first time in our history we are transitioning from a strictly water company to beverage company. Automation will continue to play a central role in our facilities as we expand into new markets.”

InPerson interview: Andrea Pongolini of E80 Group

dcvelocity.com/articles/59145-inperson-interview-andrea-pongolini-of-e80-group

David Maloney

Andrea Pongolini has more than 20 years of experience in advanced automation solutions for the consumer goods industry. He joined E80 Group, a provider of automation and robotic solutions, in 2007 and is currently the executive vice president of sales. Based in Chicago, he leads E80 Group's sales efforts in the NAFTA region. Pongolini has a degree in mechanical engineering from the University of Parma in Italy and has done additional study at the University of Chicago's Booth School of Business.

Q: How would you describe the current state of the material handling industry?

A:The current state of the material handling industry is rapidly evolving, driven by a crucial need for automation. We've witnessed a significant shift in focus, especially in the CPG [consumer packaged goods] industries, toward total integration solutions. Companies are realizing the importance of end-to-end automation in their plants and distribution centers. This trend is a testament to the industry's commitment to automation as a key tool for maintaining competitiveness, particularly in the face of challenges like labor shortages, inflation, and rising material costs.

Q: How are automated solutions helping customers deal with the lack of available labor?

A: Automation plays a pivotal role in addressing the shortage of available labor. It's essential to note that automation doesn't replace labor and humans outright; instead, it targets manual, simple, and repetitive tasks. By automating these tasks, businesses enhance efficiency, accuracy, safety, and cost-effectiveness in material handling operations, ensuring that human workers can focus on more complex and strategic aspects of their roles.

Q: What do you consider to be the most significant advancements made by robotic systems in recent years?

A: In recent years, robotic systems have made remarkable strides, particularly in the context of total integration. The integration of hardware and software has become paramount, with a focus on flexibility and digital connectivity. In addition, the rise of the internet of things (IoT) has revolutionized data collection. Businesses now demand systems that can collect and process vast amounts of data, not just for maintenance purposes but also for strategic decision-making.

Q: What factors do companies need to consider when deploying automated guided vehicles?

A: Engaging the right people within the end-user's organization, especially during the preparation of the software function description, is crucial when deploying automated guided vehicles (AGVs). A comprehensive approach is necessary, with a focus on seamless integration into the existing workflow to automate all facility movements.

On top of that, flexibility in system design is of extreme importance when deploying AGVs. A well-designed system should be adaptable to changing needs and evolving technologies. The ability to easily reconfigure routes, tasks, and workflows as operational requirements shift ensures that AGVs continue to provide value over the long term. This flexibility extends to accommodating new products, production processes, or facility layouts, enabling seamless integration and scalability. A system that can adapt to emerging challenges and opportunities in the future is a key factor in the sustained success of AGV deployment.

Furthermore, safety remains fundamental. At E80, our laser-guided vehicle systems prioritize safety through continuous research and development.

Q: There are many companies producing automated and robotic systems. What makes E80 stand out?

A:What sets E80 apart is our unwavering commitment to total integration and automation. Unlike many providers, we don't focus solely on isolated tasks. E80 collaborates closely with customers, examining their entire plant or distribution center comprehensively. We begin with a consultancy approach, utilizing our Smart Designer software to simulate the flows of the entire facility before installation.

Our end-to-end solutions, encompassing both software and hardware, are able to automate every single movement, not just repetitive low-value tasks, transforming manual facilities into fully automated ones. Our dedication to listening to our customers' needs and adapting our technologies accordingly has fostered long-term partnerships and repeat business, making E80 a leader in the industry.

Q: Automation can be a significant investment. Where should companies start their automation journey, and which areas will likely offer the best return?

A: In our experience, starting with tasks that are labor-intensive or prone to human error is highly effective. In the CPG industries, initiating an automated journey from the finished-goods warehouse has proved to be the winning approach.

When possible, we also try to include automating truck loading and unloading operations, or implement fully automated layer- and case-picking systems, which can lead to significant incremental cost savings and efficiency improvements. But regardless of the application, focusing on seamless integration with existing systems, coupled with robust data management, ensures a streamlined transition and maximizes the return on investment.

Q: You have a degree in mechanical engineering. How does that background benefit you in helping customers find the right automated solutions?

A: My background in mechanical engineering equips me with a deep understanding of the technical intricacies involved in automated solutions. It allows me to bridge the gap between our cutting-edge technologies and our customers' specific needs. By comprehensively understanding the mechanical aspects, I can effectively communicate the capabilities of our solutions to our customers. It enables me to work closely with our engineering teams, ensuring that our automated systems are not only state of the art but also precisely tailored to each customer's unique requirements. This technical expertise forms the foundation of our customer-centric approach at E80 Group Inc.

David Maloney has been a journalist for more than 35 years and is currently the group editorial director for *DC Velocity* and *Supply Chain Quarterly* magazines. In this role, he is responsible for the editorial content of both brands of Agile Business Media. Dave joined *DC Velocity* in April of 2004. Prior to that, he was a senior editor for *Modern Materials Handling* magazine. Dave also has extensive experience as a broadcast journalist. Before writing for supply chain publications, he was a journalist, television producer and director in Pittsburgh. Dave combines a background of reporting on logistics with his video production experience to bring new opportunities to *DC Velocity* readers, including web videos highlighting top distribution and logistics facilities, webcasts and other cross-media projects. He continues to live and work in the Pittsburgh area.