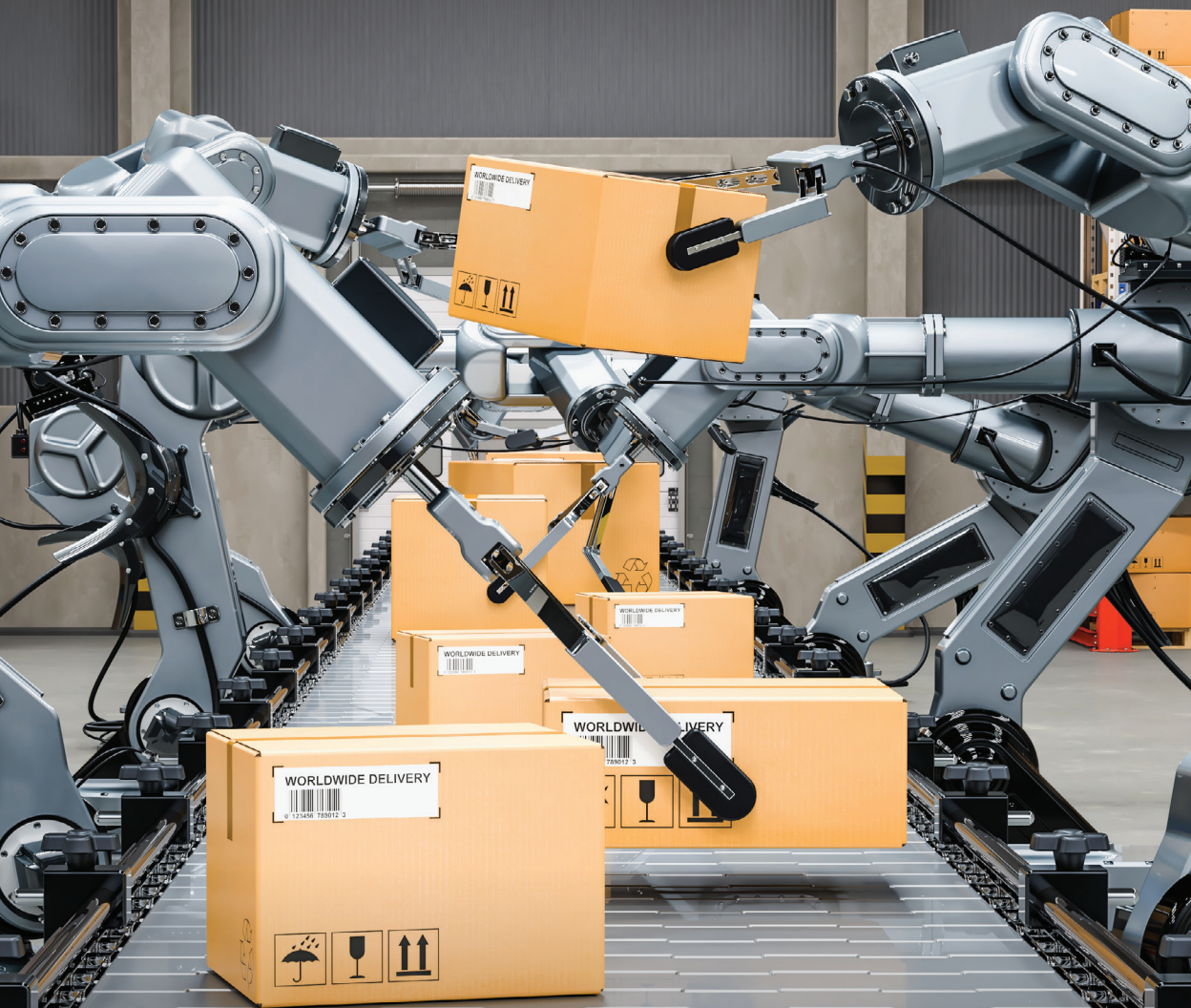


Grayway

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DISTRIBUTION

ADVANCED TECHNOLOGIES
MEET NEED FOR SPEED



WELCOME



Stephen Gray
President &
Chief Executive Officer

Today's consumer expectations are off the charts. Companies are expected to know what we want and need before we do, all while delivering the goods or services instantaneously. This puts quite the pressure on distribution networks.

In this issue of the GrayWay, we explore how distributors live up to these strong demands. The secret? It's all about technological solutions.

We also look at the growth in the cold storage market and the impact it has on supply chain processes.



Gray practices methods which protect our environment.

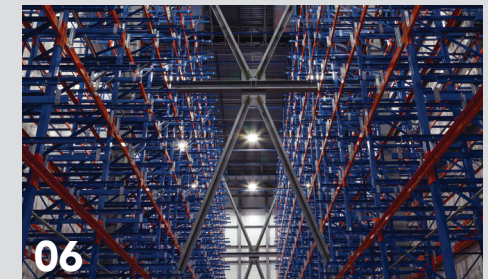
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GRAY... WE'RE BUILDING

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Mooresville, North Carolina



FULL THROTTLE

Making distribution faster than ever before

On-demand, real-time and without-delay products are what most of today's consumers expect.

This mentality is a key driver for distribution centers to meet the needs and demands of the consumer.

To provide the best consumer experience, distribution companies are investing in advanced technologies to provide the efficiency, speed and low cost that consumers demand and expect.



Fergal Glynn
Vice President of Marketing,
6 River Systems

Modern distribution technologies and management systems are essential for efficient shipping and delivery. Technologies include automation, robotics, artificial intelligence and sophisticated software systems, such as automated storage and retrieval system (AS/RS). Not only does technology improve efficiency and customer satisfaction, it's become a necessary factor to counter the growing labor shortage especially as the logistics workforce ages and retires

"Every day you read about the biggest companies in the world overhauling their supply chains," says Fergal Glynn, vice president of marketing at 6 River Systems, a Boston-based manufacturer of collaborative mobile robots. "In reality, however, most companies cannot make the big investments like e-commerce giants can, yet everyone feels the pressure to transform and compete. Increasingly, it is the top supply chain leaders that realize fulfillment is the key to differentiation in the distribution market."

Drone technology is being used as a transportation and delivery method from modern distribution facilities.

Technology Transforms Distribution

Customers expect to receive their products quickly, with more delivery options, at minimal or low delivery costs. Speed and low costs create differentiation in the marketplace, which becomes more challenging for distributors as their customers create increasingly customized products that are equally difficult to deliver. “Add it all up and the sector is under acute and growing pressure to deliver a better service at an even-lower cost,” states Andrew Tipping, a strategist and consultant for Price Waterhouse Coopers and author of *“Shifting Patterns: The Future of the Logistics Industry.”*

Top technology trends in distribution include:

- **Robotics.** The speed and accuracy of robotics in picking, packaging and loading continue to evolve and help stressed supply chains achieve multichannel fulfillment and satisfy the needs of a growing customer base. Warehouse efficiency is optimized by integrating warehouse management and control systems that manage automated systems “such as pick-by-voice, conveyors, goods-to-person picking systems, inline scanners, scales and printers, and perhaps even automated vehicles or warehouse robots,” according to the Logistics Bureau, a consulting firm that specializes in logistics and distribution. Adoption of automation-as-a-service also allows warehouses to automate without the up-front investment in expensive equipment.
- **Distribution nodes.** Demand for fast, low-cost shipping and delivery is forcing distributors to set up smaller fulfillment centers that are geographically closer to customer bases. With the trend toward “just in time” delivery, distributors rely on

distributed inventory flow forecasting to manage local inventories. These distribution nodes must fit into smaller spaces in urban areas and rely on automation and robotics to maximize efficiency. “They’ve already filled out their big hubs, the one-million square footers,” says Gillam Campbell, an industrial research manager at Jones Lang LaSalle. “Now they’re filling in their spokes to get that very fast delivery time in densely populated cities and urban areas.”

- **Blockchain.** Blockchain is a heavily encrypted, decentralized, electronic ledger that records all transactions related to a defined process. Originally designed for the financial industry, blockchain also has applications for streamlining supply chain and distribution processes, as well as protecting products during shipping and delivery. Blockchain in Transport Alliance is an organization that helps the transportation industry better understand how it can use blockchain to improve operations and service.

“The sector is under acute and growing pressure to deliver a better service at an even-lower cost.”

– Andrew Tipping
Strategist and Consultant
Price Waterhouse Coopers



- **Internet of Things (IoT).** The Internet of Things and Industry 4.0 are all about connectivity and data. Robots, sensors, artificial intelligence, machine-to-machine communication and real-time data transmission and analytics provide accurate visibility into distribution and inventory. Radio frequency identification (RFID) tags, combined with GPS, can track shipments in real time. Mobile apps are used for inventory management, barcode scanning, fleet management, shipment tracking, order management and customer service.
- **Transportation management systems.** More companies are deploying transportation management systems (TMS) to manage logistics communications and processes, including route optimization, carrier management and distribution. “TMS applications have shifted from terminal-based installs to cloud-based platforms, reducing postponements in implementation, removing bottlenecks from downtime and refining cybersecurity simultaneously,” states Logistics Plus, a provider of transportation and warehousing solutions. “More companies will adopt such solutions to keep up with growing demand and integrate with other logistics technology trends.”

Moving Forward

Retailers and e-commerce companies will continue to offer expedited delivery services to differentiate themselves from the competition. As a result, distribution providers must continue to invest in technology solutions to meet the constant pressure to fulfill orders faster and with greater accuracy. Areas of interest include “last mile” facilities, drone deliveries and alternative fuel vehicles. Worker safety and cybersecurity are also top concerns.

“Innovations in logistics technology will continue to have a significant impact on the entire supply chain landscape, well into the future,” says Glynn. “Distributors who invest in new and effective warehouse capabilities will give themselves an edge in an ever-challenging environment.”

CONSUMER DEMANDS DRIVE PROCESS IMPROVEMENTS

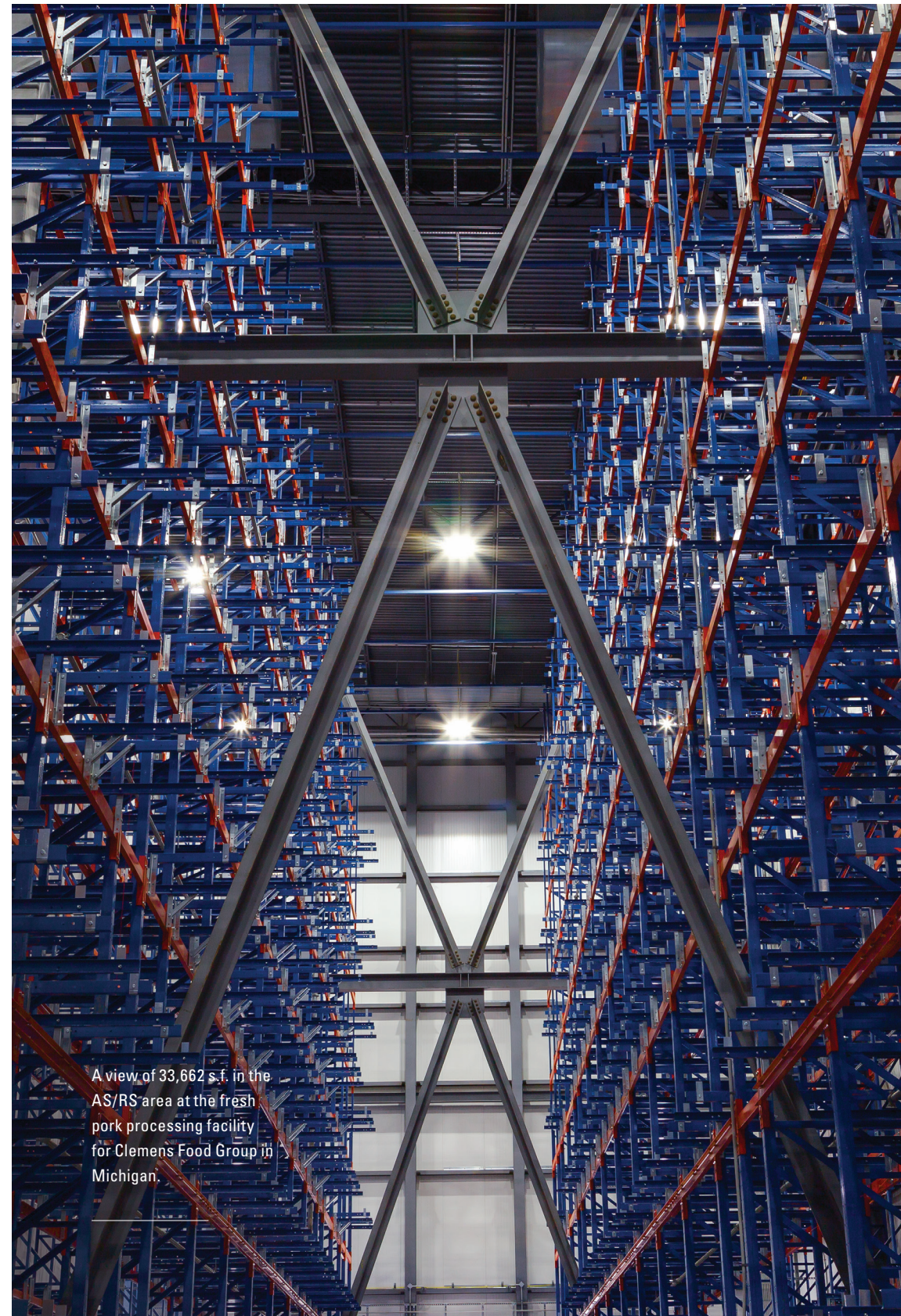
Technology and regional distribution make the difference

Cold storage is in high demand. According to Grand View Research, the global cold-storage market is expected to reach \$212 billion by 2025, expanding at a compound annual growth rate of 12 percent.

Cold-storage growth is driven by consumer demands for fresh and/or organic products. Consumers also want more home-delivery and in-store pick-up options, both of which require additional space that most grocery stores don't have. Industries such as food and beverage and pharmaceuticals are looking for new ways to protect perishable items and make them last longer during shipping. In response, cold-chain distributors must invest in technologies to optimize supply chain processes, including shipping, to deliver products as quickly as possible—especially over the “last mile.”

Regional Distribution

Speed of delivery is always a top concern—not to just keep food fresh, but to meet consumer demands for fast and low-cost delivery of customized orders. One way to do this is by creating a network of regional distribution centers, or nodes. Established in urban areas, these centers are closer to the customer base, which reduces delivery times and increases shelf life. Instead of constructing new distribution facilities, companies will rent and rehabilitate existing space to create a modern, cold storage environment.



A view of 33,662 s.f. in the AS/RS area at the fresh pork processing facility for Clemens Food Group in Michigan.

More Efficient Designs

To satisfy ever-changing consumer demands, cold storage distributors are paying more attention to efficient use of space in their facilities, and how and when they load product. For example, “shippers increasingly request that food processing be postponed,” states Spendedge, a procurement advisory firm that works with the food and beverage industry. “Products are held in cold-chain warehouses and, only after a specific order has been placed, is that product then prepared and packaged for shipment.”

Maintaining high-density storage in a distribution facility allows for more products to be stored in smaller spaces. This typically requires more technology, including radio frequency identification and laser scanning. Smaller distribution centers are also effective as last-mile distribution points and require less energy to cool than larger refrigerated spaces.

Spoilage is a common problem in food delivery, especially for fragile or perishable foods and pharmaceutical products that have different temperature and storage requirements. Refrigerated warehouses are constructing separate storage rooms, each with a specific temperature range. This keeps products as fresh as possible and extends shelf life during storage and shipping.

Technology Matters

Distribution companies must invest in new systems and technologies to fulfill consumer expectations, strengthen their brand and stay competitive in the cold storage market. These technologies include automation, robotics, safer refrigerants and cooling systems as well as electronic monitoring devices. A great perk with robots is that they are unaffected by freezing temperatures and palletize perishable foods and pharmaceuticals far more quickly and efficiently

Automation plays a crucial role in all parts of the production and distribution process.

than human workers. One of the latest trends in cold storage distribution is the use of touchscreen technology to make the process fast and easy for the cold storage crew. “With touchscreen technology and digital display, the temperature and apparatus monitoring is more effective and clearly visible when it comes to quality control checks,” according RLS Logistics, a New Jersey provider of warehousing and transportation services to the food industry.

Web-based platforms and cloud computing allow cold storage companies to manage their operations more efficiently, including real-time monitoring of transportation and delivery of products. The ability to “leverage real-time information from the production, manufacturing, storage and distribution stages helps companies effectively monitor and manage temperature, asset health, vehicle location, work flow and environmental data,” points out Current, a company specializing in connected process management solutions as IoT to food retailers. “There is little doubt these programs will become imperative to reducing waste, reassigning resources, improving maintenance regimes and assuring the delivery of the highest-quality meats and produce.”



THE NEW FACE OF MANUFACTURING

Amanda Hutchings, Peak Manufacturing



As president of Peak Manufacturing in Pleasant Lake, Michigan, Amanda Hutchings oversees the operations of one of the world's largest bearing spacer suppliers for the heavy truck industry, including distribution and logistics fleets. The company's spacers are inserted into the hub assemblies of most heavy trucks to properly space the bearings.

When she joined the company ten years ago in an entry-level position, she had no idea that later she would eventually become its president.

“The owner had an unusual amount of faith in me,” says Hutchings, who was steadily promoted through positions of higher responsibility.

“Working for a small company has its advantages,” she adds. “I wore all the hats, which provided me with valuable hands-on experience and knowledge. I have done most of the tasks I ask of my management team and I understand their challenges.”

Hutchings was instrumental in creating an employee appreciation program and providing profit sharing plans and other benefits programs. She is a member of the Women in Manufacturing Association, chairman of the board for the Shop Rat Foundation, a non-profit organization that works with local youth, and is a tireless champion of community involvement.

“Profitability and customer satisfaction come much more easily when employees are satisfied and take pride in working for a company that cares about its community,” she says.





GRAY... WE'RE BUILDING

NGK CERAMICS USA, INC.

MOORESVILLE, NORTH CAROLINA

NGK Ceramics USA, Inc. selected Gray Construction to design and build a 293,082 s.f. greenfield warehouse facility. As the company's second facility in Mooresville, North Carolina, it will house finished goods and raw materials and serve as an international distribution center for raw materials.

Located on more than 40 acres in the Mooresville Business Park East, the new facility will enable NGK Ceramics to consolidate both raw materials and finished product in one location just five minutes away from the company's production plant and, ultimately, provide improved services to its customers.

NGK Ceramics USA, INC. was established in 1988 to provide HONEYCERAM® products to the North American automobile industry. NGK Ceramics USA, INC. is a subsidiary of NGK Insulators, Ltd., one of the world's leading ceramic technology companies with its headquarters in Nagoya, Japan.



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