



# Optimising efficiency

## Automation transforms racking & shelving

As retailers and supermarkets adapt to the growing demands of e-commerce and omnichannel strategies, automation in racking and shelving systems is emerging as a key solution. By optimising space, improving inventory management and speeding up order fulfilment, automated racking and shelving systems can enhance operational efficiency.

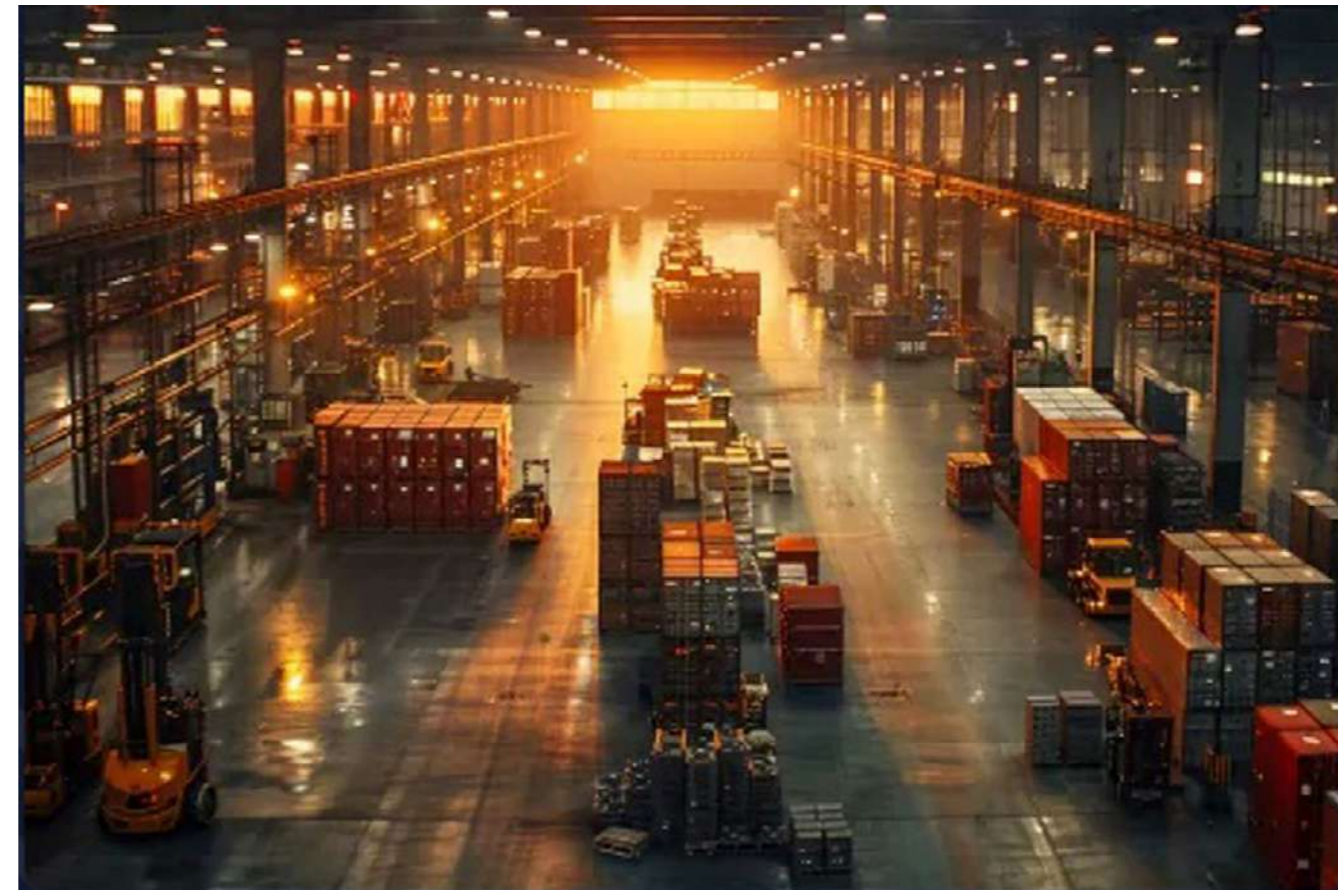
These innovations are not only streamlining traditional retail operations, but also helping businesses meet the fast-paced requirements of online orders, providing quicker and more accurate fulfilment in an increasingly competitive retail environment.

According to Floris Visser, CEO at Relog, any retail strategy should start with a focus on the customer's needs – an approach that should be substantiated by proper research and data.



Floris Visser

“We often speak about waste in the food supply chain and the majority can be attributed to perceived customer requirements on quality, which for the most part is focused on visual quality before anything else.”



With this in mind, Visser emphasises the importance of careful consideration before starting a digitisation journey. Businesses should ask themselves key questions: why are they digitising, what outcomes do they want to achieve, and whether they truly need all the data points currently being collected, or if more critical ones are being missed. “How can the business automate the capture of some data points to improve efficiency and accuracy?” he adds.

### Evolving role of storage & material handling

E-commerce and omnichannel retail strategies have significantly changed storage and material handling requirements. Alan Richard, owner of Apex Real Time Solutions, notes that the shift from bulk shipments to handling higher volumes of smaller orders has increased the pressure for accuracy and speed.

Rising customer expectations, global supply chain complexities, and operational costs require companies to adopt smarter logistics solutions to streamline operations, improve cost efficiency, and allow businesses to focus on their core activities. By leveraging warehouse management software, businesses can optimise logistics operations and gain a competitive edge.

<https://apex-rts.co.za/>



Alan Richard

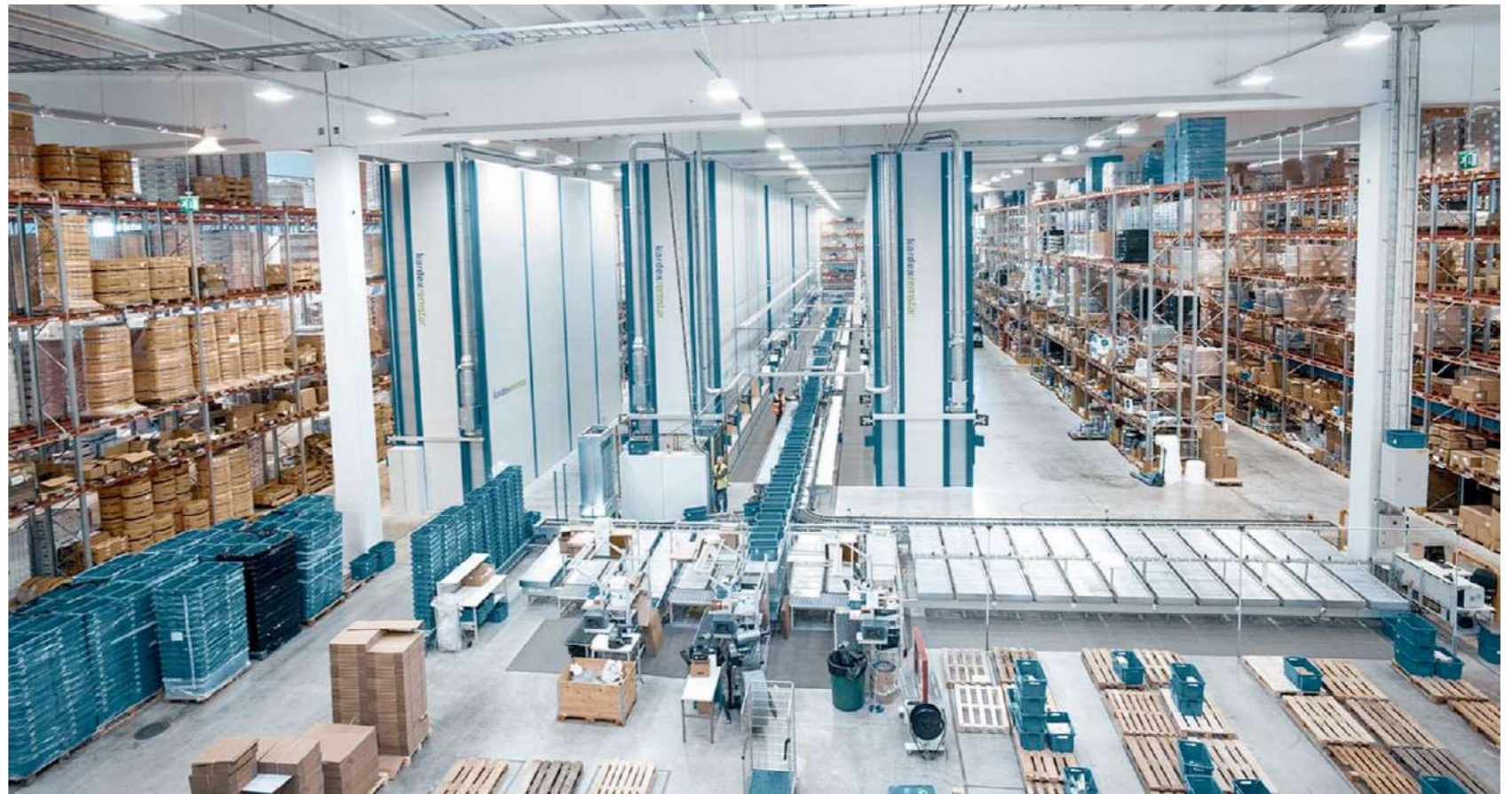


“Retailers must simultaneously manage physical restocking and online fulfilment, which drives demand for agile and tech-driven systems. Rising warehouse rentals in South Africa highlight the need for efficient solutions like robotics and automated storage and retrieval systems (AS/RS), which streamline processes and optimise storage,” says Richard.

These trends are reshaping how businesses approach fulfilment. Visser stresses that storage solutions must facilitate rapid picking, while minimising errors. High-density storage systems, goods-to-person solutions and real-time inventory visibility are all essential to improving picking speed and reducing manual handling errors.

Richard agrees, highlighting how omnichannel strategies demand even greater synchronisation between in-store and online fulfilment. “Think about how we shop today – maybe you browse online, pick up in-store or get same-day delivery to your doorstep. Coordinating all this requires advanced warehouse technology,” he says.

Companies like Apex are making this possible by integrating robotics, guided vehicles and light-guided picking systems that work together to ensure products are picked, packed and delivered quickly and accurately. “These frictionless workflows support faster restocking, efficient order fulfilment and enhanced customer satisfaction. Whether it’s restocking shelves in a Johannesburg store or delivering an online order to Lagos, these flexible systems ensure seamless service,” he explains.



Automated storage and retrieval systems (also referred to as ASRS systems) are most commonly used in manufacturing and distribution facilities. They typically replace large areas of shelving to save floor space, improve safety and increase productivity. With varying technologies and applications, it can be a bit overwhelming researching ASRS systems for the first time.

Find a one-stop “Intro to Automated Storage and Retrieval Systems” for you complete with definition, technology differences, primary benefits, common applications and signs it’s time to start considering at: <https://us.blog.kardex-remstar.com/automated-storage-and-retrieval-systems-asrs>

### Enhancing inventory accuracy through automation

Accurate inventory management is critical to ensuring smooth operations in omnichannel retailing. According to Richard, automated materials handling systems play a vital role in reducing stockouts and overstocking.

“Materials handling systems manage everything from bulk pallets to single-item online orders. Thanks to barcodes and smart tags, the systems update inventory records in real-time to reduce stockouts as items move through the supply chain,” he says.

Automating manual processes dramatically improves accuracy. Light-guided picking eliminates searching, real-time digital inventory replaces paper tracking, AI handles counting and predictive restocking streamlines reordering. “Tasks that once took hours are now completed in minutes,” says Richard.

For example, apex-RTS’s material handling systems integrate AI-driven predictive inventory management with AS/RS, enabling demand forecasting and optimised stock levels. Managers gain a “network-wide view,” tracking inventory across stores, distribution centres and borders





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in real-time. AI further enhances efficiency by optimising storage layouts, positioning high-demand items for faster access and improving fulfilment times.

“These systems achieve up to 99% accuracy and process inventory significantly faster than manual methods, even with older IT infrastructure,” says Richard.

### Accuracy in e-commerce

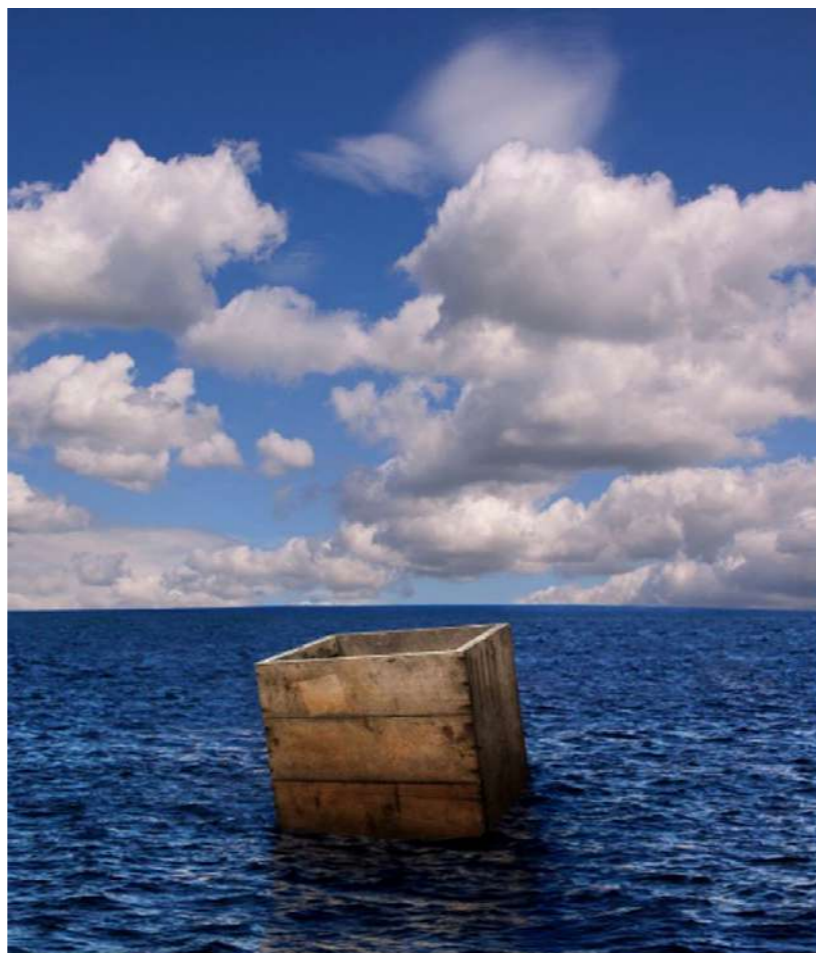
“In e-commerce, first-time accuracy is non-negotiable. Unlike in traditional retail, where minor discrepancies can be corrected at the store level, errors in e-commerce directly impact customer satisfaction and can lead to costly returns,” says Visser.

He stresses that the focus should be on prioritising solutions that ensure accuracy at the picking stage, such as automated picking technologies (e.g., robotic picking arms, pick-to-light systems) and real-time quality checks integrated into the picking process.



Werner Serfontein

Werner Serfontein, CEO of Palian Racking and Shelving, also highlights the transformative impact of advanced technologies like RFID and AI. “These technologies improve visibility and control over inventory, reducing errors and enabling precise inventory management, which minimises wastage and maximises availability to meet demand,” he told *Supermarket & Retailer*.



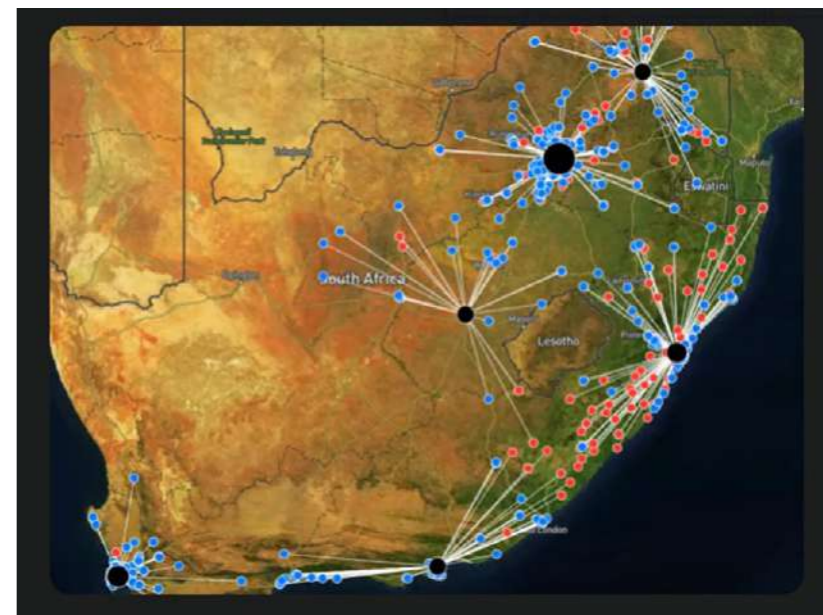
Ever played hide-and-seek with your inventory? One moment, it’s “in stock.” The next? A ghost. Put an end to stockouts, over-ordering, and warehouse inefficiencies with cutting-edge automation ...

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He further elaborates on the significant advantages of automated systems in warehousing, noting that these solutions offer higher precision, faster inventory processing and more efficient use of space.

“Traditional systems are often manual and static, whereas automated systems use cutting-edge technology for dynamic storage and retrieval,



There should be a high-level review of distribution networks to find opportunities to share infrastructure to the mutual benefit of all business units. The results will allow for the development of a long-term supply chain network strategy and infrastructure developments. <https://relog-supply-chain-logistics.com/>

which enhances speed and reduces reliance on manual labour,” he said.

“Automated systems allow for more compact and denser storage, thanks to features like automated shuttles that can move multiple pallets deep into racking systems. This significantly increases the number of pallets stored in a given space, making the best use of valuable warehouse floor space.”

“The ability to automate the movement of goods within the warehouse reduces labour costs by minimising the need for manual handling of pallets,” he says. “This not only cuts operational costs, but also improves overall productivity. In high-volume warehouses, this increased efficiency and speed become particularly valuable.”





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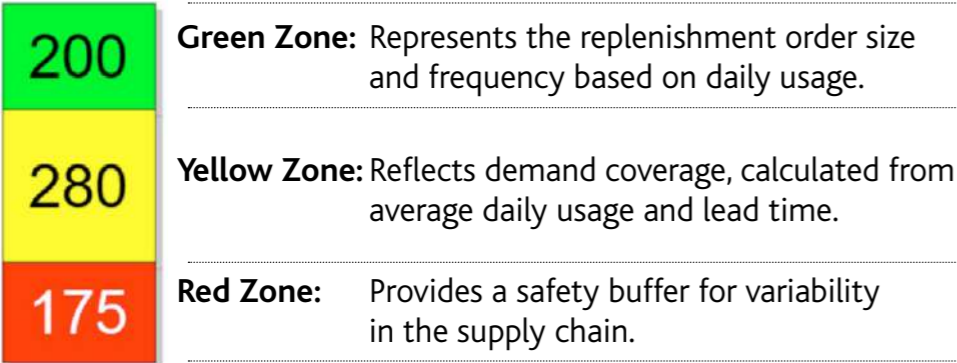


# Why does your car never run out of fuel, but your business constantly faces SKU shortages?

In your car, the fuel gauge tells you when to refill. If the gauge is green, you're good for daily trips. Yellow means a top-up is wise for longer journeys, and red signals an urgent need to refuel. This kind of visibility keeps your car running smoothly.

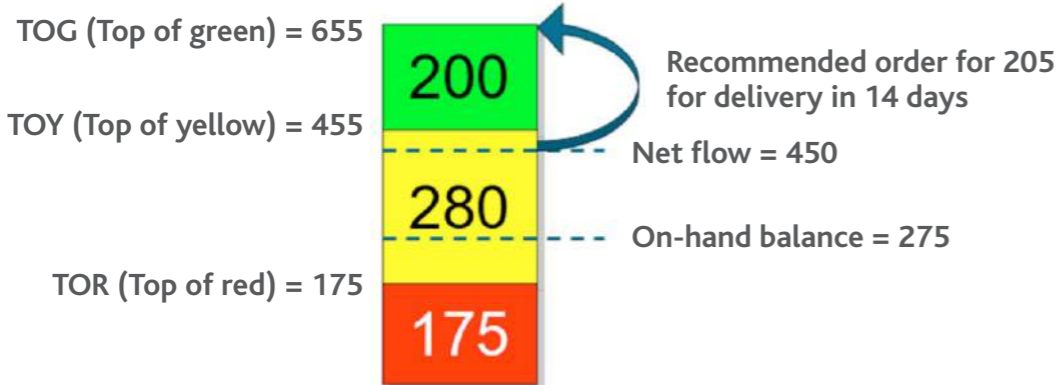
Now, imagine applying this concept to your inventory. With the Demand Driven MRP Methodology, you get real-time visibility of all your SKUs, helping you avoid stockouts.

### Here's how it works ...



For example, if a SKU has an average daily usage (ADU) of 20, a lead time of 14 days, and a minimum order quantity (MOQ) of 200 ...

- Green Zone: MOQ of 200
- Yellow Zone:  $14 \times 20 = 280$
- Red Zone: Adjusted for variability, e.g. 175



The secret is **continuous visibility!**

### Reordering is based on Net Flow (NF) ...

$Net\ Flow = Current\ On\ hand + On\ order - Qualified\ demand.$

If you have 275 on-hand, 200 on order, and 25 in demand, your Net Flow is 450.

This puts you in the Yellow Zone, prompting a reorder to ensure NetFlow stays in the Green Zone.

The stock, or on-hand inventory, should ideally hover around the lower half of the Yellow Zone.

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Contact us and see how you can gain benefits such as improved service levels, right sized inventory and reduced lead times.

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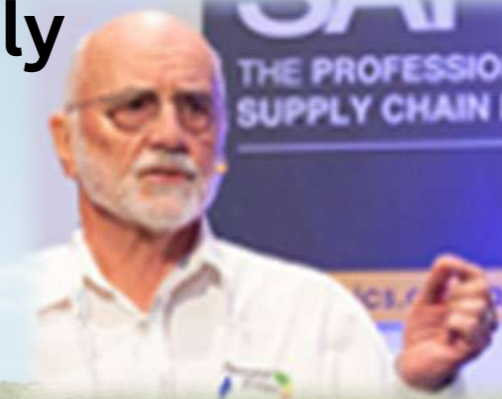






## Is Your Supply Chain Stuck in the Past?

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Additionally, Serfontein points out that automated racking systems contribute to improved workplace safety by reducing the risk of injuries.

“By minimising the need for manual pallet handling, these systems reduce the likelihood of accidents from heavy lifting or forklift operation, creating a safer environment for warehouse staff.”

Automated systems also offer better control over inventory management and access. With features like FIFO (First In, First Out) or LIFO (Last In, First Out), these systems improve tracking, reduce stock loss and ensure better goods rotation, enhancing operational efficiency.



<https://www.the-entourage.com/>

You can consider inventory management a subset of a greater supply chain network. Managing your inventory involves ordering, storing, and distributing products. When it is handled well, inventory management can have significant benefits for businesses. Conversely, poor inventory management decisions like over- or under-ordering can be not only expensive, but also devastating for the long-term health of a company. If a business doesn't invest in understanding and implementing inventory management best practices, it will almost certainly experience far more supply chain disruptions. And in the current climate, the last thing any organisation wants to experience is an uptick in supply chain issues and the resulting challenges.

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# Optimising Logistics with Reusable Packaging and Sustainable Solutions



CHEP is revolutionising supply chains in South Africa by promoting circular sustainability. Companies are shifting toward reuse over waste, optimising efficiency while minimising their environmental impact. Modern supply chain disruptions make strategies like route optimisation, fuel efficiency, and reusable packaging essential. CHEP, a global leader in reusable packaging solutions, partners with supermarkets and retailers to reduce waste and inefficiency.

By adopting CHEP's pooled pallets and containers, businesses cut costs, reduce their environmental footprint, and improve operational resilience. CHEP offers tailored services, high-quality and sustainable equipment, to help retailers optimise their supply chains. CHEP's commitment to sustainability ensures that businesses can thrive while building a greener future.

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## Balancing cost and efficiency

“While fully automated solutions provide the highest level of order accuracy and long-term sustainability, they remain out of reach for many South African businesses due to their high cost,” says Visser. Additionally, the local market presents unique challenges, such as a diverse customer base and a broad range of SKUs, which often surpass the complexity faced by first-world nations.

To address these challenges without entirely relying on automation, businesses can take a hybrid approach, combining critical thinking with selective technology adoption. This approach focuses on enhancing manual operations by improving accuracy at the source rather than relying on downstream checks, which tend to slow down order fulfilment and increase costs. Technologies such as pick-to-light, RFID tagging, AI-driven visual checking and mobile-assisted picking systems can significantly improve first-time accuracy without requiring full automation.

Beyond technology, retailers must also consider the financial impact of their material handling and storage systems. The decision to buy or lease racking and shelving plays a crucial role in balancing long-term investment with operational flexibility.

“For businesses, the choice between buying or leasing racking and shelving is similar to deciding between owning or renting property,” says Visser. “Both options have distinct advantages and disadvantages, depending on a company’s financial strategy and operational needs.”



According to Serfontein, ownership provides long-term financial benefits and control, while leasing offers flexibility and lower upfront costs – particularly valuable for businesses needing to adapt quickly to market changes.

However, as Africa’s e-commerce market continues to grow, AI-driven automation will become increasingly essential. “These technologies enhance supply chain efficiency, improve inventory accuracy, and support faster delivery, helping retailers remain competitive in a digital economy,” says Richard.

AI and machine learning (ML) are transforming automated storage systems, shifting warehouses from reactive to predictive strategies. By analysing real-time data, AI-powered systems can optimise

Twiga Foods, a Kenyan-based agri-tech startup, was founded in 2014 with a mission to aggregate informal retail demand and organise an efficient supply chain for fresh and dry goods across urban African cities.

Owing to Twiga Foods’ remarkable growth from 2014 to 2019, the company outgrew its informal storage facilities, leading to fragmented operations, inefficient flows, and a lack of operational visibility and quality control.

The solution was a new 20 000m<sup>2</sup> high-quality warehouse to consolidate operations, support future growth, and enhance operational control, visibility and quality standards.

<https://relog-supply-chain-logistics.com/>



stock levels, reduce stockouts and overstocking while minimising costs. Other key advancements include predictive inventory management, demand forecasting, real-time machine learning for fulfilment optimisation and automated reordering – reducing errors and improving product availability.



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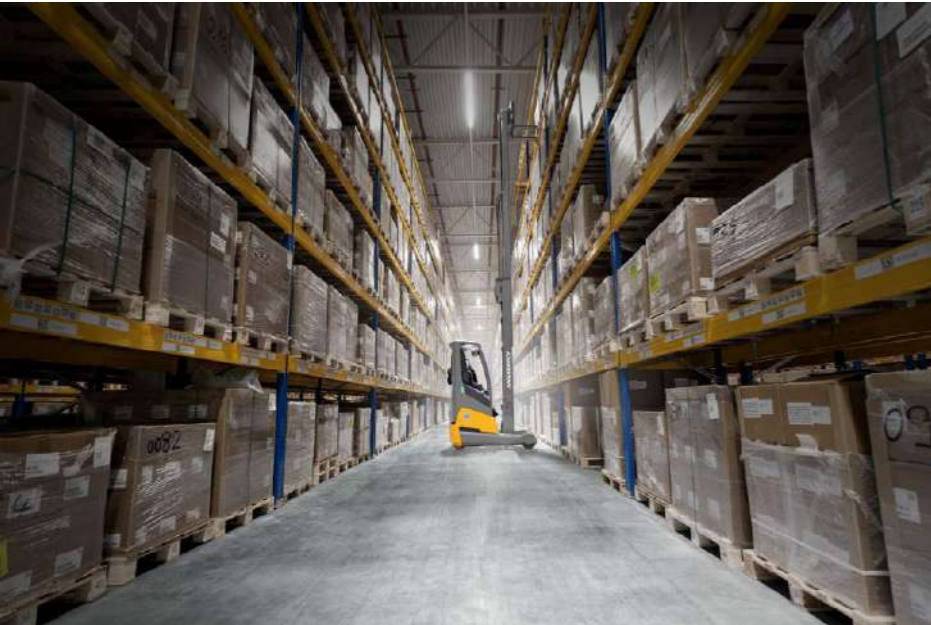
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# Things you need to know when planning your racking



**A**s a leading supplier of warehouse racking, we understand the complexity and importance of effective racking planning. The following topics are considered when designing a racking system.

## Define storage strategy

FIFO, LIFO or just-in-time: choosing the right storage strategy is crucial for the efficiency and smooth running of your warehouse. The storage strategy depends on the type of products, the demand and the shelf life of your stored goods. A carefully planned strategy helps to minimise storage costs, use storage space more effectively and improve the overall material handling process.

## Determine bay and rack load

The bay load defines the weight that stacked racks can carry, while the rack load specifies the maximum load for an individual rack. Precise calculation and observance of these load limits are essential to avoid overloading and ensure the stability of the racking system. And you shouldn't limit your thinking to your current requirements — design with foresight in mind too.

## Select the correct aisle width

Choosing the right aisle width in the warehouse is crucial for optimising warehouse operations and for safety. The aisle width influences the efficiency of material flows and the accessibility of storage locations. It must be matched to the dimensions of the material-handling equipment used. A well-planned aisle width concept can improve movement sequences and thus increase your throughput. It may also help to prevent accidents.

## Comply with standards

Compliance with standards in the design and use of storage racks is essential for safety in warehouse operations. These standards define in detail which requirements a racking system must fulfil in terms of load capacity and stability, and which safety precautions are necessary. They therefore contribute to the efficiency and protection of warehouse employees. In South Africa, we observe the SEMA Code of Practice. It is important to have compliance with the standards and guidelines regularly checked by trained personnel. Certified experts from can do this for you on request.

## Create a security concept

As safety in the warehouse is a top priority, you should take this into account from the outset when planning your warehouse. From installation to utilisation, the safety concept needs to include compliance with all local regulations and ensure the load-bearing capacity and stability of each racking system. Stability and integrity must be checked regularly. When developing and producing our racking systems, we emphasise compliance with the latest safety standards: for example, our pallet racking is certified with the RAL quality mark. You can extend your safety measures even further with options such as collision protection and rear wall grids.

## Consider a holistic strategy

An effective racking concept and a well-conceived warehouse strategy go hand in hand and maximise the success of your warehouse. As warehouse logistics experts, we therefore also take your fleet and your processes into account for your racking solution. By taking a holistic view of your entire warehouse — from optimum space utilisation to the picking strategy — we create flexible racking systems that contribute to higher throughput and can be easily adapted to new requirements.




**Don't have an answer to every question yet ?**

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**CASE STUDY:** A fast-paced perishable cold chain flow-through operation which serves 300 stores daily across South Africa. Engineered for continuous flow and multiple daily collection waves, this operation is highly specialised. With a pick-to-store process driven by incoming deliveries, there is no margin for delay – orders arrive constantly and must be picked and dispatched timeously to clear the floor for the next cycle.

The main objective was to align stores with their corresponding dispatch zones to ensure accurate order assembly and efficient combination of orders destined for nearby locations. An additional goal was to minimise walking distance by positioning the picking grid closer to the staging area, creating a more direct path and reducing cross-flow, while maintaining minimal aisle congestion. <https://relog-supply-chain-logistics.com/>

“When correctly applied, AI and ML can deliver extraordinary results in retail and warehouse environments,” says Visser.

“The key difference between a cookie-cutter design and a well-thought-out, integrated design lies in space utilisation and operational efficiency. To accurately measure the return on investment (ROI) of material handling and racking investments, retailers must assess the financial impact across both CAPEX (capital expenditure) and OPEX (operational expenditure).”



Pepkor KZN warehouse under construction. <https://palian.co.za>

accounting for ongoing expenses like maintenance, energy consumption and labour. Then, determine the benefits by measuring improvements in efficiency – such as faster inventory turnover, reduced labour hours and streamlined supply

Before moving forward, Richard advises retailers to take a comprehensive view by evaluating costs, benefits and performance.

“Calculate the initial investment, including equipment, installation and training, while also

chains. Quantify cost savings from lower energy usage, operational expenses and revenue growth from better inventory management, higher accuracy and faster order fulfilment.”

To optimise their investment, retailers must continuously track inventory accuracy, order fulfilment times, and operational costs. “Using these insights to adjust strategies and maximise efficiency ensures informed decision-making and maximises the long-term value of material handling and racking investments,” concludes Richard. **SR**



Ensure the safety and optimal condition of your warehouse. A maintenance plan not only safeguards your staff and products, but also offers various benefits that can positively impact your insurance premiums and product guarantees. <https://palian.co.za/>



**Catherine Larkin** is a communication and marketing professional, specialising in Logistics, Transport and Supply Chain. Her company, CVLC Communication, is a corporate public relations, communication, marketing and events consultancy. Its services range from full secretariat support, project management and administration.



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