

The connected store

Always-on connectivity is powering South Africa's AI-driven retail automation revolution

Picture this: a bustling supermarket at peak trading hours. It could be Norwood Pick n Pay on payday, or Checkers at the Point in Cape Town's seam-bursting Sea Point on any given Friday, or any of thousands of busy stores.

The checkouts are continually processing payments, digital shelf labels are flashing promotional prices, automated inventory systems are triggering replenishment orders and a swarm of delivery drivers are receiving real-time picking instructions on their mobile devices.

Behind this orderly chaos lies an invisible yet critical foundation: always-on connectivity. Flip one switch – be it power or internet connectivity – and it all crashes to a grinding halt.

As retailers accelerate their adoption of automation technologies, a fundamental truth is obvious: sophisticated AI systems, cloud-based platforms and intelligent devices are only as reliable as the connectivity infrastructure supporting them. When the network fails, even the most advanced automation becomes a liability rather than an asset.



<https://stockcake.com/i/futuristic-robotic-hand>

The automation imperative

Unlike many other industries, South Africa's retail automation market is experiencing remarkable expansion at a compound annual growth rate of 11.2% and projected to reach US\$691.3 million (R11,06 billion) by 2030 according to Grand View research. To put this in context, South Africa's GDP (gross domestic product) grew by 1.1% in 2025, mainly due to the positive showing in the fourth quarter of 2025, according to Stats SA.

The somewhat surprising surge reflects retailers' growing recognition of – and investment in – automation. This includes online commerce, which is no longer an optional extra but an essential catalyst for growth.

Online retail sales grew 35% in 2024 to R96 billion, representing 8% of total retail sales. The figure is projected to exceed R130 billion in 2025, capturing nearly 10% of the market. That shift alone is reshaping how retailers think about inventory management, fulfilment models and customer experience.



Arthur Goldstuck

According to Arthur Goldstuck, CEO of World Wide Worx, "Online retail has moved from being an experiment on the margins to a structural force in the economy [where] nearly one in every ten rand spent at retail will now be online."



— RETAIL SOLUTIONS —

ERP FOR RETAIL



THE ARCH ECOSYSTEM

**NATIVELY INTEGRATED RETAIL
MANAGEMENT SOLUTIONS**

www.archretail.com webinfo@archretail.com +27 21 556 2724



PnP vs Sixty60. Shoprite's Sixty60 offering is currently the market leader, competing against Pick n Pay's asap!, SPAR's SPAR2U, and Woolworths' Woolies Dash services. <https://dailyinvestor.com/>

“ This growth has been supported by advances in automation technologies and increasingly reliable always-on connectivity. ”

Major retailers are racing to capitalise on this shift. Shoprite's Sixty60 service, for example, grew by 47.7% last year and now operates from 694 locations, enabling one-hour delivery to more than 80% of South Africa's addressable online market. Pick n Pay's asap! service drove 131% growth in first-time buyers following a complete technological transformation.



Enrico Ferigolli,

Enrico Ferigolli, Pick n Pay's Retail Executive – Omnichannel, says ...

“ The three full years of work to completely overhaul the app's technology infrastructure, both on the back-end technology and on the front-end, have been worth it. ”



Angelo Swartz

Meanwhile, Woolworths' Dashservice achieved 40% year-on-year growth, and SPAR2U reported a staggering 380% increase in volume sales. These aren't marginal gains; they're step changes. Indeed the market, as SPAR CEO Angelo Swartz describes it, has become "exceptionally competitive."

AI as the intelligence layer

Artificial intelligence has emerged as retail automation's most transformative force. The South African AI in retail market is projected to surge from US\$31.42 million (± R499 million) in 2023 to US\$281.91 million (±R4.5 billion) by 2032, representing a compound annual growth rate of 27.53%.

Neil Gouveia, Director at Zebra Technologies Africa, explains AI's expanding role: "AI is emerging as one of retail's most impactful enablers, powering real-time visibility, loss prevention and predictive insights across the store and distribution network.



Neil Gouveia

Retailers are increasingly piloting AI for risk detection, inventory visibility and optimisation and shrink reduction, with 87% of retail leaders citing AI and automation as critical to loss prevention efforts."

Solutions such as Zebra Companion, Workcloud AI-driven pricing and VisibilityIQ Foresight bring AI front and centre, helping teams to complete tasks faster, identify issues earlier and deliver more personalised customer experiences.

The impact is not small: according to Zebra's Impact of Intelligent Operations research with Oxford Economics, retailers achieved up to 1.8% increase in both revenue growth and profitability by improving the prioritised workflow of inventory management.

AI applications go further than inventory. French software-as-a-service company Veesion has piloted its AI-driven gesture detection software at several



<https://www.zebra.com/>

Spar outlets to identify suspicious behaviour and automatically alert staff. The deep-learning model operates on three levels: detecting humans, recognising products on shelves, and analysing gestures to identify suspicious actions. This allows retailers to deploy security resources more efficiently while maintaining customer service quality.





PriceWizard's Stellar Pro range.



PriceWizard's Polaris range.

PriceWizard shelf label electronic pricing solutions

from



pricewizard
ELECTRONIC PRICING SYSTEM



Polaris Pro Electronic Shelf Labels, features ...

- Multiple Colours.
- 8 pages storage.
- 7 colours flashing.
- 10 year battery life.
- Thinner & Battery – replaceable design.
- More flexible in placement.
- Green and low carbon design.
- Higher screen to body ratio.
- Larger display, Thinner Bezel.
- 3H surface hardness for better scratch resistance.



Pricewizard has been in the retail industry for over 40 years. We are extremely proud to represent Hanshow, one of China's leading electronic shelf labelling manufacturers & distributors in the Chinese & European markets.



Contact details: www.posisolve.co.za

M: +27 (0) 83 777 7043

O: +27 (0) 86 166 6349

info@posisolve.co.za | vernon@posisolve.co.za | positronpmb@wol.co.za



Automated intelligence on the store floor

The transformation of frontline retail operations through AI-assisted automation also goes beyond back-office analytics. According to Zebra's research, 88% of frontline associates report that technology helps them complete tasks faster, while 87% note reduced stress and improved job satisfaction.

"This isn't just about efficiency – it's about creating sustainable working conditions that enable consistent, high-quality customer service on the shop floor," says Gouveia.

Point-of-sale systems have evolved into sophisticated command centres, integrating multi-channel sales processing and real-time analytics. These systems track customer preferences, manage loyalty programmes and refine inventory levels across channels.

Self-checkout, though still gaining traction in South Africa, plays an important role by reducing labour pressure, shortening queues and supporting more efficient store operations while freeing staff to focus on service and higher-value tasks.

"Zebra is advancing this through technologies such as computer vision, RFID and Gen AI, all of which significantly improve stock accuracy and on-shelf availability," Gouveia explains. "These tools automate replenishment cues, identify misplacements and reduce manual errors."

Loyalty programmes are likewise being reshaped by automation. No longer limited to static points-based rewards, modern loyalty platforms are driven by AI and real-time data flowing from POS systems,



mobile apps and online channels. This allows retailers to personalise rewards, promotions and messaging dynamically, based on actual shopping behaviour rather than on broad customer segments.

Behind the scenes, inventory management has become a critical battleground for retailers, with Gouveia noting that 84% of retail decision-makers prioritise real-time inventory synchronisation.

For retailers, this means maintaining optimal on-shelf availability without the labour-intensive manual checking that previously consumed staff time. The technology addresses a critical pain point: the 51% of shoppers who report leaving stores without all intended purchases due to stock issues, according to Zebra's research. Out-of-stocks represent lost sales opportunities while overstocking ties up capital and increases waste.

Advanced automation systems maintain optimal stock levels by analysing demand patterns, seasonal trends and local preferences. With improved workflows supported by intelligent automation, retailers can reduce waste and protect revenue lost to stockouts.

ESLs (electronic shelf labels) highlight this integration of connectivity and automation. These digital price tags enable retailers to update pricing and promotions instantly across all stores, ensuring consistency and eliminating errors.

Modern ESLs integrate with AI-driven platforms to fine-tune stock levels, minimise out-of-stock situations and provide actionable insights through analytics.



Customers place items in their cart the same way they have always done, and computer vision takes care of everything. It identifies the product and adds it to the running list of products on the device's screen. It can even capture items that are tossed into the cart from across the aisle. <https://www.shopic.co/knowledge/>



RANGE OF PRODUCTS

**Handheld Barcode Scanners . Mobile Computers . Unattended Scanning Systems . Sensors & Safety
Fixed Retail Scanners . Laser Markers . Machine Vision . Dimensioning Systems**



Datalogic Full Portfolio Distributor . Accredited Repair Centre . Warranty Pre & Post - Sales Support
DCI Scanning is a proud DATALOGIC partner for over 40+ Years.

www.dciscanning.co.za

» LEARN MORE

DCI SCANNING

How automation transforms distribution

Distribution centres have become high-tech hubs where automation delivers measurable productivity gains. Gouveia explains,

“RFID, machine vision, deep learning and mobile computing are among the most valuable technologies transforming distribution centres and omni-channel fulfilment.

In the warehouse and transport and logistics sectors, organisations deploying AI for demand forecasting and predictive analytics have achieved productivity gains of more than 20%.”

Zebra’s industrial deep-learning tools, such as Aurora Deep Learning, enhance complex inspection and verification tasks, while Mobile Dimensioning accelerates parcel handling with AI-based measurement of irregular items. These capabilities drive faster throughput, reduce bottlenecks and support the speed and accuracy required to keep business flowing and the consumer satisfied.

For independent FMCG retailers and wholesalers operating with tighter margins and leaner staffing, scalable solutions make operational excellence achievable without major infrastructure overhauls.

“AI-driven handhelds, RFID and intelligent task management help independent operators match the operational excellence of larger chains,” Gouveia notes. “By simplifying workflows and reducing manual tasks, these businesses can deliver better customer experiences and respond faster to demand shifts.”



The infrastructure reality

Despite all the notable benefits of integrating these advanced automation technologies, retailers still face unique infrastructure challenges that make connectivity reliability critical.

Load-shedding, cable theft and inconsistent terrestrial network quality continue to create an environment where traditional internet connectivity cannot always be relied on, despite recent improvements.

Retail automation systems demand uninterrupted network availability. When connectivity drops, the impact is immediate. Card transactions stall and queues build. Electronic shelf labels don’t update prices, which triggers disputes at checkout. Behind the scenes, the damage compounds.

Cloud-based inventory systems lose real-time visibility, delivery routing optimisation freezes and

security cameras lose their monitoring feed, creating compliance and safety vulnerabilities.

Live data streams also enable more advanced applications such as footfall analytics and dynamic pricing. When connectivity is poor and data is delayed, forecasting is less accurate, leading to missed market opportunities.

Meanwhile, digital

signage, self-checkout kiosks and click-and-collect notifications represent the customer-facing elements of automation. Network failures in these areas are immediately noticeable to consumers, causing frustration and damaging brand reputation.

“Modern retail relies on cloud POS systems, ERP platforms and pricing engines to ensure consistency across branches. These systems require resilient links to operate effectively during busy trading periods, precisely when network congestion usually peaks.”

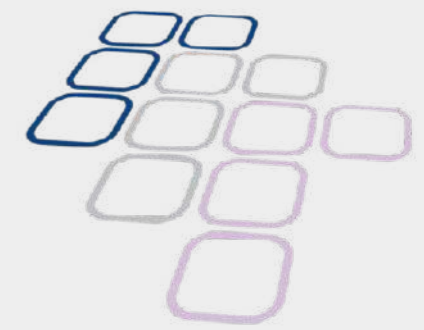
Then there’s security and compliance continuity, which depend on continuous connectivity for CCTV monitoring, fraud detection and PCI-DSS (Payment Card Industry Data Security Standard) compliance. Outages create security blind spots and increase regulatory exposure.

RETAIL READY

SOLUTIONS

Since - 1985 -

React Solutions offers a fully integrated, cost-effective ERP Trading Platform and Business Management Solution for distributors, wholesalers, merchants and retailers.



react
solutions

**Serious
about
Efficiency and
Profitability?**

**Manage your entire
business with our
ERP solution.**

HIGHLIGHTS

- ✓ POINT OF SALE
- ✓ STOCK MANAGEMENT
- ✓ WEB SALES ORDERING
- ✓ MOBILE GRV
- ✓ INTEGRATED FINANCIALS
- ✓ CUSTOM REPORTING
- ✓ WAREHOUSE MANAGEMENT SYSTEM

About us

At React Solutions, we are a services-focused company dedicated to delivering exceptional support and ERP expertise. Since 1985, we own and continually advance our world-class ERP system—developed entirely in-house—to provide innovative, evolving business management solutions that empower retailers, wholesalers, and distributors to operate seamlessly and efficiently.

Contact

- 📞 +27 84 266 7499
- ✉️ andre@reacts.co.za
- 🌐 www.reacts.co.za
- 📞 +27 11 803 4324



5 Spring St, Rivonia,
Johannesburg
Gauteng
South Africa

The non-negotiable foundation: always-on connectivity

While specific automation tools capture attention, high-availability communication infrastructure serves as the invisible enabler for every retail innovation.



Dr Dawie de Wet

Dr Dawie de Wet, Group CEO of Q-KON, frames the challenge succinctly: “The shift towards automation in the supermarket and retail sectors – encompassing everything from AI-driven stock management and automated system controls to high-volume POS sales

– is the only viable path for sustainable growth in today’s economy.

“However, the hard truth is that these advanced functions are entirely dependent on the quality of the underlying broadband. Without reliable, always-on connectivity, the most sophisticated automation systems become liabilities rather than assets.”

The stakes are immediate and tangible. Real-time inventory management requires stable connectivity for live stock visibility and automated replenishment through RFID and barcode scanning. Without it, retailers face ‘phantom stock’, over-ordering and empty shelves.

Cloud-integrated systems including inventory management platforms, workforce scheduling tools and customer analytics engines all depend on continuous network access to function.

AI-powered tools process vast amounts of data in real time, providing frontline staff with actionable insights. These systems analyse patterns, predict demand and flag anomalies – but only when connectivity enables the continuous data flow they require.



<https://www.qkon.com/>

When the network falters, these intelligent systems become isolated data silos, unable to deliver the insights that drive operational efficiency.

South Africa’s persistent infrastructure challenges have driven innovation in connectivity solutions. For example, using Q-KON’s Twoobii Smart Satellite Services, retailers can leverage both Low Earth Orbit (LEO) and Geostationary (GEO) satellites. Twoobii engineers ensure that global satellite capabilities are tailored to meet specific

<https://www.qkon.com/>



local demands of African retail businesses, providing stable links for rural stores, pop-up shops and franchise models.

“Because satellite doesn’t rely on terrestrial infrastructure, it operates independently of on-the-ground issues such

as cable theft or local outages, making it a vital primary or backup service,” Dr De Wet explains. “This multi-orbit approach offers highly reliable solutions for chains with locations that struggle with inconsistent terrestrial coverage.”

With various packages and affordable options, satellite technology has evolved into a cost-effective enabler for retail automation, ensuring that no store is left behind because of geographical constraints.



All the Warehouse Solutions You'll Need Under One Roof

✓
Warehouse
Optimisation

✓
Warehouse
Automation

✓
Business Process
Improvement

✓
Local After Sales
Support & Maintenance

*Best-of-breed solutions. Integrated into any IT system
in Africa and supported by seasoned local engineers.*

Transform your warehouse operations today!

Visit www.apex-rts.co.za or call us at **087 135 0783**
to learn more and schedule a free consultation.



Navigating integration and adoption challenges

Despite the many proven benefits of automation, retailers face significant barriers to adoption. Budget constraints, legacy system limitations and uncertainty about implementation are primary concerns.

Gouveia says Zebra's approach is built on compatibility, scalability and minimal disruption. "Our portfolio of connected devices, software and AI tools integrates seamlessly with existing retail systems, enabling organisations to modernise store operations without replacing infrastructure," he notes.

Zebra's cloud-based platforms connect data from millions of devices, bridging the gap between legacy systems and next-generation intelligent automation. Retailers can adopt these technologies incrementally, unlocking benefits quickly while maintaining stability in day-to-day operations.

The impact of automation extends into the back office as well. Integrated payroll, accounting and financial reconciliation systems are increasingly linked to POS, inventory and workforce management platforms, reducing manual administration and improving accuracy.

By automating routine financial processes, retailers gain faster visibility into costs, margins and cash flow, all of which are critical factors in an environment where labour, energy and logistics expenses are under constant pressure.

Employee engagement is critical to making this work. Advanced tools improve both operational



efficiency and job satisfaction. As Gouveia suggests, "Regular training sessions and workshops help staff better understand and effectively use digital tools, improving overall productivity and customer service."

Strip away the hype and the advice becomes surprisingly pragmatic ...

- Take a customer-centric approach through data analytics.
- Integrate omni-channel strategies across all touchpoints.
- Employ sustainable practices to reduce waste and energy consumption.
- Adopt agile technologies that can quickly adapt to market changes.

Robust cybersecurity measures will help to protect customer data while building trust, and collaborative ecosystems with technology providers and fintech companies will further enhance service delivery.

The benefits of retail automation leapfrog operational efficiency, representing tangible improvements in profitability and customer satisfaction. These improvements then cascade through the business: streamlined workflows, improved inventory accuracy and reduced shrinkage represent three of the biggest cost drivers in retail.

Sustainability considerations are also shaping automation advances. By improving inventory visibility, accuracy and replenishment efficiency, retailers can reduce waste, minimise unnecessary transportation and curtail overproduction.

Intelligent automation supports better energy use by streamlining processes and reducing redundant manual tasks, helping retailers achieve more sustainable, lower-impact supply chains aligned with global ESG (Environmental, Social and Governance) goals.

A connected future

As retailers navigate economic pressures including inflation, power outages and constrained consumer spending, intelligent automation offers a path to sustainable competitiveness.

The projection of e-commerce users growing from 11.7 million in 2025 to 21.25 million by 2029 underscores the opportunity ahead.

Self-checkout will continue to evolve, with functionality such as biometric checkout and computer vision ushering in a frictionless retail reality. Combined with AI-driven visibility, retailers can expect to improve replenishment, reducing waste and making smarter, real-time decisions.

Mobile-first shopping experiences will likewise proliferate, with retailers optimising apps for exclusive deals, seamless payments and augmented reality features.

Data-driven personalisation will become standard, with retailers using AI and machine learning to analyse customer data and provide personalised product recommendations, targeted marketing and tailored shopping experiences. 'Buy now, pay later' schemes will proliferate, offering flexible payment options that encourage higher average order values.

Yet none of these innovations can deliver on their promise without the foundation of always-on connectivity.

Dr De Wet explains that whether a retailer needs a robust primary link for a remote branch or a mission-critical backup service for an urban flagship, they are going to need global satellite capabilities that are fine-tuned to meet local business demands.



Computer vision: using AI to recognise objects, people and patterns

Computer vision enables machines to interpret, analyse and extract relevant data from images and videos. AI-enabled, it uses deep learning and neural networks to recognise objects, peoples and patterns, replicating human vision and our cognitive ability to interpret visual data. In FMCG retail and wholesale stores, it is used for AI-powered cameras and sensors to automate inventory tracking, reduce theft and analyse customer behaviour, and even identify items that are placed in shopping carts. It can turn physical store activity into physical data by monitoring shelf stock levels in real time, detect barcode images and generate heat maps to optimise store layout.

Despite impressive growth numbers, the retail sector is at a decisive juncture. Retailers who treat connectivity as foundational infrastructure and not as an afterthought will define the next phase of competition. Those who delay will discover that digital capability is no longer optional.

Automation is shaping the future of retail. But in a sector where even minutes of downtime translate into lost revenue and eroded trust, always-on connectivity is not just an enabler, it is the quiet constant that makes everything else possible. **SR**

Sources:

www.engineeringnews.co.za/ | <https://mybroadband.co.za/>
<https://dailyinvestor.com/> | www.credenceresearch.com/
www.bizcommunity.com/ | <https://azure.microsoft.com/>
www.shopic.co/knowledge/ | www.scandit.com/blog/

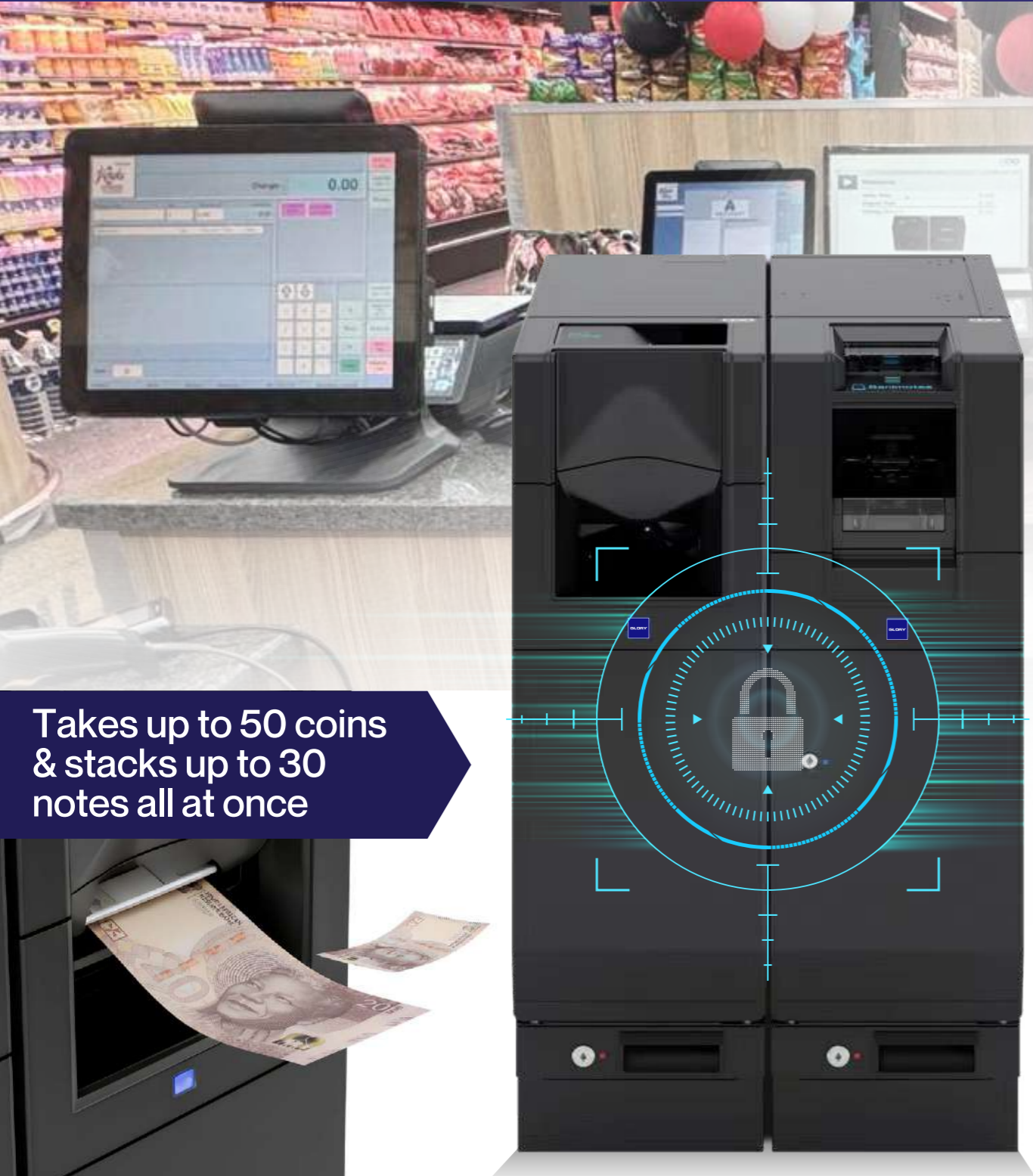


Guy Lerner writes across diverse topics in business, technology, and retail, including consumer technology, telecommunications software, user experience technology, security, and power systems. Guy holds a B.Sc. Honours degree from the University of Witwatersrand. Contact Wilkins Ross Communications (www.wilkinsrossglobal.com) or guy@wilkinsross.co.za.

New technologies deliver innovative computer vision capabilities. Empower apps to analyze images, read text, and detect faces using prebuilt image tagging, optical character recognition (OCR), and responsible facial recognition. Easily integrate vision features into projects with no machine learning expertise required.

<https://azure.microsoft.com/>

Stop cash loss. Start cash confidence.



Every rand counts.

With **CASHINFINITY™** from **Clyronex**, your cash is secured the moment it enters the machine. Automated cash handling means airtight security, flawless accuracy, and peace of mind for your business.

Top reasons to go Automated

Takes up to 50 coins & stacks up to 30 notes all at once

Unmatched Protection Against Theft & Shrinkage

Advanced security features, including counterfeit detection.



clyronex

Cash Automation Solutions

Protect your cash for a Secure future.

Clyronex is a South African distributor and proud partner of Glory Global Solutions.

Reach out for a demo now!

(In a hurry to see us in action? Book an Online demo!)

Phone: +27 (0) 12 667 0260 @ Email: info@clyronex.co.za Web: clyronex.co.za



In retail, innovation is no longer a luxury - it is a necessity. At Clyronex, our mission has always been simple: to help retailers take control of their cash operations, reduce risk, and unlock operational efficiency through intelligent automation. Over the past few months, we've made significant strides in expanding our footprint across South Africa's retail landscape, and we're proud to share some of our recent milestones.

Expanding Our Retail Partnerships

We recently completed the installation of Clyronex cash automation systems at Roots Butchery in Soshanguve Mall and Middelburg Mall, as well as United Meat & Chicken in Polokwane. These installations represent more than just new deployments - they signal a shift in how large retailers are embracing automation to streamline operations and elevate customer experiences. Our systems, powered by Glory's CASHINFINITY™ technology, automate cash handling at the point of sale, eliminating manual counting, reducing shrinkage, and improving accuracy in daily operations.



Real Benefits, Real Impact

Since implementing Clyronex solutions, these retailers have already begun to experience tangible benefits:

- **Enhanced Security:** Automated cash handling significantly reduces the risk of theft and counterfeit acceptance, with suspicious banknotes automatically detected and rejected.
- **Operational Efficiency:** Faster cash transactions and automated reconciliation have shortened queue times and simplified shift changes.
- **Improved Accuracy:** Manual errors in cash counting and change provision have been virtually eliminated, ensuring tills balance every time.
- **Productivity Gains:** Managers and staff spend less time counting cash and more time engaging with customers, improving service quality and store performance.

Our systems are designed to automate every step of cash handling - from accepting notes and coins to balancing tills - helping retailers focus on running their businesses rather than managing cash manually.

Voices from the Floor: Customer Testimonials

"The Clyronex machines have completely transformed how we manage cash. Our end-of-day processes are faster, and we have full confidence that our tills balance every time."

— **Store Manager, Roots Butchery, Soshanguve Mall**

"Security has always been a concern in high-volume meat retail. Since installing Clyronex, we've seen a noticeable reduction in discrepancies and a huge improvement in staff accountability."

— **Operations Manager, Roots Butchery Group**

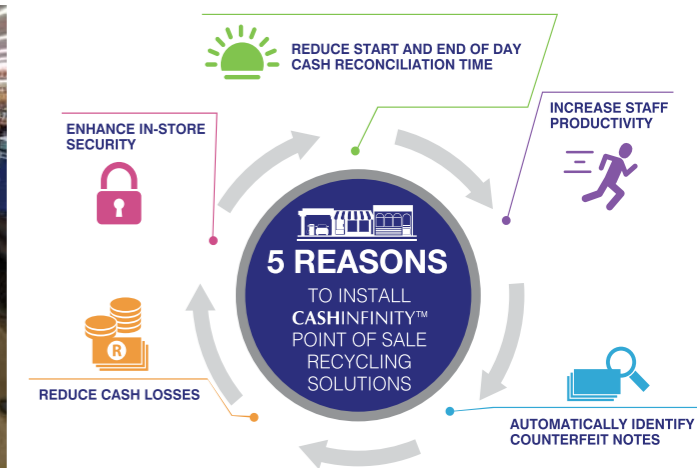
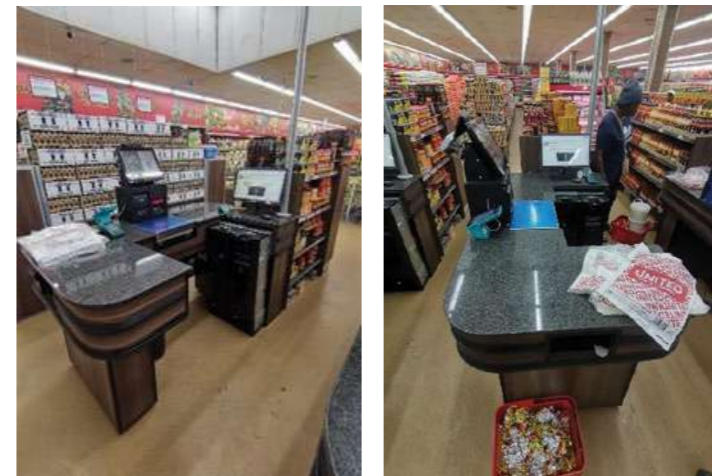
"The biggest win for us is speed. Customers move through the checkout faster, and our staff can focus on service rather than counting money. It's been a game-changer for our Polokwane store."

— **Store Owner, United Meat & Chicken**

Looking Ahead

As Clyronex continues to expand into butcheries, pharmacies, grocery, and other retail verticals, our focus remains on delivering solutions that are secure, scalable, and future-ready. Retailers across South Africa are recognising that cash automation is not just about efficiency - it's about building resilient, modern operations that can thrive in an increasingly competitive environment.

We are excited about what lies ahead and deeply grateful to our partners who have entrusted us with their operations. Together, we are redefining how cash is managed in South African retail.



Discover how Clyronex can transform your cash operations - get in touch with our team today.

Phone: +27 (0) 12 667 0260

Email: info@clyronex.co.za

Web: www.clyronex.co.za

