EVOPULSE ROBOTICS · INDUSTRY INTELLIGENCE REPORT

Service Robotics in Caribbean Retail & Supermarkets

Cutting the cost of cleaning and logistics, breaking the staff-turnover cycle, and freeing associates for customers

Prepared for Supermarket & Large-Retail Leadership Teams

Strategic Outlook 2026–2030

evopulse.cc · sales@evopulse.cc · Caribbean distributor of Pudu Robotics
INTELLIGENT AUTOMATION PARTNER

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Executive Summary

Caribbean supermarkets and large retailers operate on some of the thinnest margins in business while carrying one of the highest cost bases in the region. Labor is the largest controllable cost, and it is the hardest to keep: annual staff turnover in grocery runs around 65%, and higher still among younger workers. The two functions that drive the most cost and the most churn — floor cleaning and in-store logistics — are also the two most automatable. Service robotics addresses both directly: not by replacing the associates who serve customers, but by absorbing the repetitive, physical, around-the-clock work that nobody wants to do twice.

This report is written for the executives who decide where scarce operating budget goes. It sets out three operational imperatives, the global evidence behind each, and a focused robot portfolio — cleaning, customer-service, and logistics models that are proven at scale, available today, and deployable without capital expenditure under EvoPulse's Robots-as-a-Service model.

Key indicators at a glance

$21.0B Cleaning-robot market by 2030 (23.7% CAGR)	**~65%** Annual staff turnover in grocery retail	**~30%** Cleaning-cost reduction vs contracted service
30 days Typical EvoPulse deployment timeline	**$0** Upfront capital required under RaaS	**~0.5%** Current robot adoption in Caribbean retail

The three imperatives

- **Lower the largest controllable cost.** Cleaning and in-store logistics are the most automatable retail functions; autonomous cleaning runs roughly 30% below contracted cost.
- **Break the turnover cycle.** Automating the churn-driving tasks — cleaning and cart-pushing — removes the work people quit over, and the recruiting treadmill behind it.
- **Free associates for customers.** Offloading floor cleaning, routine queries, and stock runs returns staff to selling and service — and out of the highest-injury tasks on the floor.

1. The Market Context: From the Warehouse to the Store Floor

Retail robotics has moved out of the distribution center and onto the shop floor. Autonomous floor-cleaning robots now run nightly in Walmart, Kroger, Giant, and Carrefour stores; customer-service robots guide shoppers, surface promotions, and answer routine questions; and logistics robots move pallets and stock carts between receiving, stockroom, and shelf. None of this requires deep integration with point-of-sale or merchandising systems, which keeps deployment risk low and time-to-value short.

The economics now favor the operator. The global cleaning-robot market — the largest entry point for retail — is projected to grow from about $6.0 billion in 2024 to $21.0 billion by 2030, a 23.7% annual rate, as hardware costs fall and Robots-as-a-Service removes the upfront barrier.[1] For import-heavy Caribbean retail, where margins are thin and labor is costly, cleaning and logistics robots are among the highest-ROI investments available.

$21.0B	**23.7%**	**Proven**
Cleaning-robot market, 2030	Projected market CAGR, 2024–2030	Deployed at scale by Walmart, Kroger, Carrefour

[1] Cleaning Robot Market, Grand View Research (≈$5.98B in 2024 to ≈$21.0B by 2030, 23.7% CAGR). Other firms publish higher ranges depending on scope.

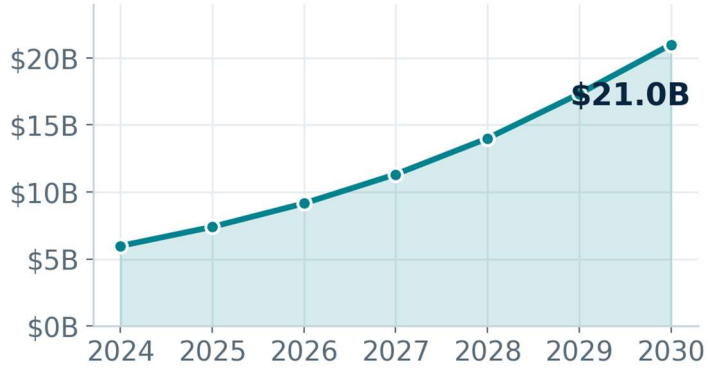
2. Strategic Outlook: 2026–2030

Two forces define the 2026–2030 window for retail leaders: a robotics capability that is scaling fast and falling in cost, and a labor-cost-and-retention problem that is not improving. The charts below frame both. Together they explain why the next five years are the decision window — the retailers that build automation into store operations early will enter the 2030s with a structural cost and service advantage over those that wait.

2.1 Where the technology is heading

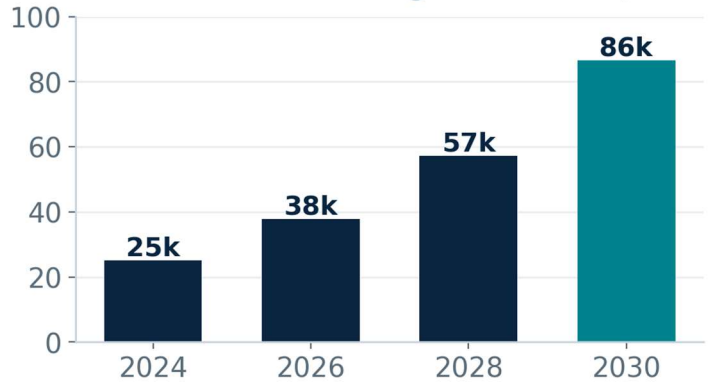
The cleaning-robot market is on track to more than triple this decade, and unit volumes are climbing even faster as prices fall and RaaS lowers the barrier to entry. Cleaning is the proven, highest-ROI entry point for retail; customer-service and logistics robots follow close behind.

Cleaning-robot market size, 2024–2030E (US$ billions)



Source: Grand View Research (23.7% CAGR, 2024–2030). Cleaning is the largest robotics entry point for retail.

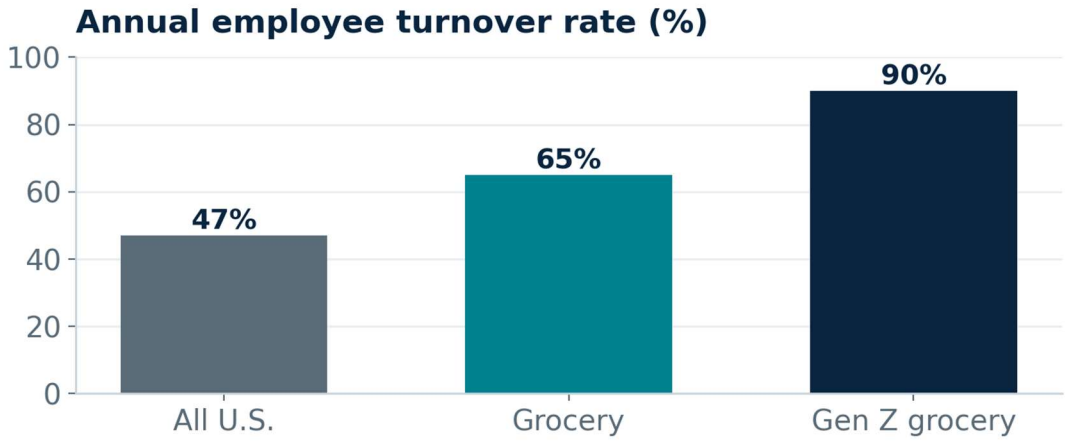
Professional cleaning-robot sales, 2024–2030E (thousands of units)



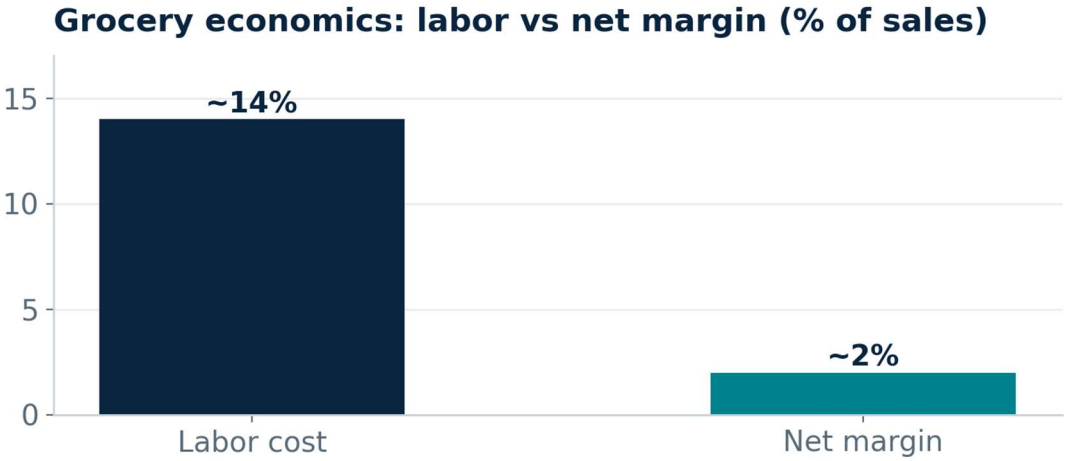
2024 actual: ~25,000 units, +34% YoY (IFR World Robotics 2025). 2030 projected at ~23% CAGR (illustrative).

2.2 The pressure behind it

On the other side of the ledger, the labor problem persists. Grocery carries one of the highest turnover rates of any industry, and labor is by far the largest controllable cost in a business that nets only a few cents on the dollar. Automation attacks exactly the line items that hurt most.



Grocery has one of the highest turnover rates of any industry (FMI; NGA). Robots do not turn over.



Labor is the largest controllable cost — roughly 7x net margin (FMI industry baselines).

2.3 The 2026–2030 adoption curve

For an individual chain, the strategic value of acting is highest at the start of this window and erodes as clean-store automation shifts from differentiator to baseline expectation.

Phase	What happens in the market	What early adopters gain
2026	**Cleaning robotics shifts from pilot to standard practice across major retail systems; RaaS makes entry capital-free for regional chains.**	**Early pricing, first-mover operational learning, and immediate, visible savings on overnight cleaning.**
2027–2028	**Regional chains with robots undercut competitors on price (lower labor cost) while scoring higher on cleanliness.**	**A measurable cost-per-store and customer-experience edge over slower-moving competitors.**
2029–2030	**Clean-store automation becomes table stakes for premium retail; stores without it slip on cost and on reviews.**	**A defended margin position and brand reputation as the gap to non-adopters becomes a competitive barrier.**

Chart sources: Grand View Research (cleaning-robot market); IFR World Robotics 2025 (unit sales); FMI and the National Grocers Association (turnover and labor); industry baselines (margin). Forward values to 2030 are estimates.

3. Three Operational Imperatives

3.1 Lowering the Largest Controllable Cost

COST INTELLIGENCE

In a business that with low margins on sales, labor — roughly 14% of sales — is the largest cost a retailer can actually control. [2] Floor cleaning is the single highest-frequency task in the store, performed every night across sales floors, produce sections, and entrances. It is also the easiest to automate. Autonomous cleaning runs roughly 30% below the cost of contracted cleaning services, and a robot covers every assigned zone to the same standard on every pass, with a timestamped log of what it cleaned and when.

That combination — lower cost and consistent, documented coverage — is exactly what manual or contracted cleaning cannot reliably deliver. For a multi-store operator, the saving compounds across every location, every night, while opening-time cleanliness improves rather than slips.

~14%	~30%	Logged
Labor as a share of sales — the largest controllable cost	Cleaning-cost reduction vs contracted service	Documented coverage of every zone, every pass

3.2 Breaking the Turnover Cycle

WORKFORCE INTELLIGENCE

Grocery retail has one of the highest turnover rates of any industry — around 65% a year overall, and as high as 90% among Gen Z workers.[3] In practice, the average floor associate or cashier is replaced every 14 to 18 months. Each replacement consumes management time on recruiting and training, and degrades service quality during the ramp. It is a structural drag, not a seasonal one.

Robots do not turn over, do not need recruiting or training, and do not call in sick. Automating the tasks that drive the most churn — overnight cleaning and the physical grind of cart-pushing and restocking — removes the work people most often quit over. The point is not fewer people; it is breaking the cycle of constantly re-hiring for the least desirable jobs, and keeping experienced staff in the roles that actually build customer loyalty.

~65%	14–18 mo.	Zero
Annual grocery turnover (up to ~90% for Gen Z)	Average tenure before an associate is replaced	Turnover, sick days, or training cost for a robot

[2] Labor as a share of sales and net-margin ranges reflect food-retail industry baselines (FMI / National Grocers Association). Autonomous-cleaning cost reduction reflects reported retail deployments.
[3] Grocery turnover: National Grocers Association and FMI retention data; generational variation per industry retention research. Grocery has one of the highest turnover rates of any U.S. industry.

3.3 Freeing Associates for Customers

CUSTOMER EXPERIENCE

Much of an associate's shift is consumed by tasks that do not require a person on the sales floor: pushing stock carts from receiving to shelf, walking pallets and cages between the stockroom and the floor, and answering the same routine questions about where a product is or what is on promotion. Cart-pushing and manual material handling are also the highest injury-risk tasks in retail.

Robots take exactly this work. Logistics AMRs move the heavy loads — removing both the labor and the injury risk — while a customer-service robot handles wayfinding, product location, and promotions in multiple languages. The associates that work frees up are redeployed to what machines cannot do: helping customers, merchandising, and selling. Cleaner stores and faster answers lift the customer experience that drives repeat business, which in razor-thin retail is where loyalty and margin are won.

> *Caribbean retailers cannot hire their way out of a 65% turnover problem on margins this thin. The lever is operational: automate the cleaning and logistics that drive the churn, and put people back where they create value — with the customer.* — Pablo Carmona, EvoPulse Robotics

4. Industry Evidence: Robots Delivering Measurable Results

The case for retail robotics rests on deployments at the largest chains in the world, not on projections. The examples below show the three imperatives in practice, at scale.

Retailer	Deployment	Documented outcome
Walmart United States	**Standardized on autonomous floor-cleaning robots (BrainOS-powered scrubbers) across stores nationwide — roughly 1,800+ units.**	**The world's largest retailer runs autonomous cleaning at scale; a mature, replicable model and large cumulative labor savings.**
Kroger United States	**Pilot of autonomous shelf-scanning and floor-cleaning robots across ~200 stores.**	**Aisle-cleanliness ratings up ~28%, floor-cleaning incidents down sharply, stockouts identified faster; staff redeployed to customer-facing roles.**
Carrefour France / Europe	**KettyBot-class customer-service robots deployed in hypermarkets across France, Belgium, and Romania.**	**Routine, high-volume customer queries handled autonomously, freeing staff for higher-value service; improved ease-of-navigation scores.**
Giant Food United States	**Autonomous floor-cleaning robots running on a fixed nightly schedule across stores.**	**Consistent, documented overnight cleaning with minimal cleaning-related customer complaints since deployment.**

Figures reflect publicly reported program results and vary by retailer, scope, and measurement method.

5. Recommended Pudu Robotics Portfolio

EvoPulse recommends a focused portfolio matched to the three imperatives. As the Caribbean distributor of Pudu Robotics, EvoPulse deploys and supports each model on-island. The portfolio spans three functions — cleaning, customer service, and stockroom logistics — so a single program can attack cost, turnover, and customer experience at once.

5.1 Cleaning

Model	Role	Key specifications	Best fit
CC1	**Autonomous floor cleaning**	**Four-in-one sweep / scrub / vacuum / wash; ~3,000 m² per charge; visual + laser SLAM navigation with 99% obstacle-avoidance; optional elevator integration for multi-level stores; timestamped cleaning logs.**	**Sales floors, produce and frozen aisles, entrances — scheduled overnight cleaning.**
MT1	**Large-area sweeping**	**Heavy-duty AI sweeper with dual disc brushes; 70 cm cleaning width; 35 L bin; high hourly coverage; native IoT integration with elevators and gates for autonomous multi-level operation.**	**Large-format stores, warehouses, car parks, and concourses.**

CC1 keeps the high-traffic sales floor consistently clean and logged; MT1 covers the large open areas that consume the most contracted-cleaning labor.

5.2 Customer Service & Wayfinding

Model	Role	Key specifications	Best fit
KettyBot	**Customer-service & promotion robot**	**Greets shoppers, gives product location and store navigation, and surfaces weekly specials on an integrated screen; multilingual voice interaction; expressive display for advertising and engagement.**	**Entrances, promotions, and aisle wayfinding; offloading routine customer queries from floor staff.**

KettyBot handles the repetitive questions that pull associates off task — and its multilingual voice suits the Caribbean's mix of English-, Spanish-, Dutch-, and French-speaking shoppers.

5.3 Stockroom & Floor Logistics

Model	Role	Key specifications	Best fit
T300	**Internal logistics AMR**	**Up to 300 kg payload; VSLAM+ and LiDAR navigation; multi-floor operation via cloud elevator integration; detects low/suspended obstacles and floor markings; up to 12-hour battery for 24/7 use.**	**Pallets, cages, and stock carts between receiving, stockroom, and shop floor.**
T600	**Maximum-payload AMR**	**Up to 600 kg payload; multi-floor via cloud elevator integration; 12-hour battery with ~2-hour fast charge; underride / cart-tug configurations for bulk movement.**	**Bulk deliveries and central-stock distribution at large-format stores and DCs.**

Both AMRs eliminate manual cart-pushing — the highest injury-risk task in retail — and run the heavy back-of-house moves so associates stay on the floor with customers.

6. The Caribbean Context: High-Cost Operations in a Competitive Market

Caribbean retail faces a specific combination that makes automation unusually compelling. Most inventory is imported, so margins are thin. Labor costs are high relative to regional wages, partly because retail struggles to retain staff against tourism and hospitality. Store formats are often large, demanding significant cleaning and logistics labor. And customer expectations are rising, as Caribbean shoppers compare local supermarkets to the international chains they encounter when they travel.

Robotics addresses the two largest cost items — cleaning and in-store logistics — while improving the customer experience that drives repeat business. With current robot adoption across Caribbean retail still near zero, the operators who move first capture both the cost advantage and the reputation for the cleanest, best-run stores in their market.

400+	50–70%	~0.5%
Caribbean supermarket locations	Annual staff turnover across the region	Current robot adoption in Caribbean retail

7. Commercial Model and Financial Snapshot

For margin-constrained retailers, how a capability is acquired matters as much as the capability itself. EvoPulse offers Robots-as-a-Service (RaaS): a fixed monthly operating fee with no capital appropriation, no depreciation, and no in-house maintenance burden. Maintenance, software upgrades, and on-island support are included, and deployment typically completes within 30 days — bypassing the long procurement cycles that ownership usually entails.

Consideration	Traditional ownership	EvoPulse RaaS
Upfront cost	**$25,000–$42,000 per robot**	**$0 — no capital appropriation**
Budget treatment	**Multi-year depreciation; capital impact**	Predictable monthly operating fee
Maintenance	**In-house engineering maintenance burden**	Fully included
Technology refresh	**Retailer bears obsolescence cost**	Upgrades / replacement at lease expiration
Time to deploy	**12–18-month procurement cycle**	Live in ~30 days
Support	**Vendor-dependent, often off-island**	Caribbean on-island response within 24h

Illustrative scenario — medium Caribbean supermarket

A medium Caribbean supermarket deploys four robots under RaaS. With an estimated fee of roughly $4,000 per month and approximately four full-time-equivalents of cleaning and logistics labor reallocated (about $9,720/month fully loaded), the net monthly benefit is on the order of $5,720 — roughly $68,640 in year one — before counting reduced turnover cost and the customer-experience gains from cleaner stores.[4]

~$4,000
Est. monthly RaaS fee, 4 robots (illustrative)

~$5,720
Net monthly benefit, before churn savings

~$68,640
Illustrative net benefit, year one

Illustrative only. Final pricing is subject to a store assessment of layout, floor area, and service scope.

[4]Illustrative financial scenario for explanatory purposes only; not a quotation. Actual pricing and savings depend on a store assessment.

8. From Decision to Live Deployment in 30 Days

Phase	What happens	Output
Week 1 Assessment	**EvoPulse maps the store floor layout, cleaning zones, high-traffic areas, produce sections, and logistics routes, and runs staff introduction sessions. No operational disruption.**	**Custom ROI model and zone map for your store.**
Week 2 Setup	**Robots are programmed with store maps, overnight cleaning schedules, and safety zones around freezers and displays; integration with store operations is confirmed.**	**Configured robots and schedules, ready for trial.**
Week 3 Supervised trial	**Robots operate in supervised mode across all zones; staff observe and interact while routes and edge cases around displays and seasonal stock are fine-tuned.**	**Validated routes and trained staff.**
Week 4 Go-live	**Robots transition to fully autonomous operation with a live monitoring dashboard and monthly performance and savings reporting.**	**SLA-backed uptime and on-island response within 24 hours.**

9. Strategic Recommendations for Retail Leaders

Immediate — within 30 days

- Start with overnight floor cleaning — the fastest, most measurable ROI. Deploy CC1 for autonomous overnight cleaning to cut cost immediately and lift opening-time cleanliness.
- Request a no-cost EvoPulse store assessment to produce an ROI model calibrated to your floor area, store count, and current cleaning and logistics spend.

Short-term — within 90 days

- Use RaaS to match the technology Walmart and Carrefour run — at Caribbean prices and with zero upfront capital. Convert a capital decision into a predictable monthly line item.
- Add T300/T600 logistics AMRs to remove cart-pushing — the highest injury-risk task — and KettyBot to offload routine customer queries from floor staff.

Strategic — within 12 months

- Address turnover structurally, not symptomatically: automate the cleaning and stock-movement tasks that drive the highest churn, and keep experienced staff in customer-facing roles.
- Use consistent, robot-enabled cleanliness as a competitive differentiator alongside location and price — a third dimension that drives customer preference and loyalty.

> *Caribbean supermarkets compete on location and price. Robot-enabled cleanliness and service add a third axis — and the operators who move first will own it before it becomes table stakes.*

Next step

Request a no-cost, no-obligation store assessment. EvoPulse will conduct a full review of your store or chain and return a custom ROI model and phased deployment plan built for your specific operating profile.

evopulse.cc · sales@evopulse.cc · WhatsApp available 24/7

EvoPulse Robotics — Caribbean distributor of Pudu Robotics — serving retail and supermarket operators across the region.