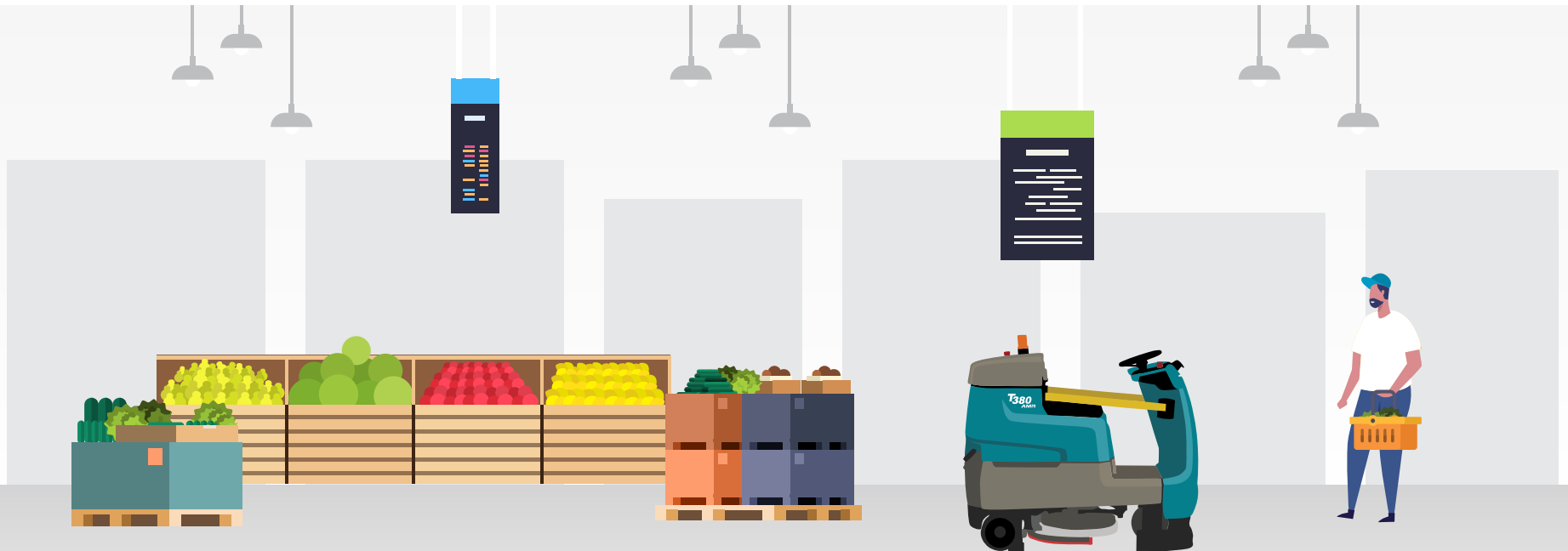




# The autonomous advantage for retail facilities



How retailers are solving key challenges and creating competitive advantage with robotic technologies



## Retail robotics adoption surging

Retailers have utilized robots in their warehouses for decades, but now there's a real opportunity to bring them onto the retail floor. With the rapid advance of safe autonomous technology, truly intelligent robotics are now a practical—and increasingly essential—operational strategy for retailers of all types. Analysts predict utilization of robots in retail to grow nearly 40% annually over the next decade.<sup>1</sup> But adoption is now surging ahead of those projections.

**1 in 4**  
retailers are  
**ALREADY USING**  
in-store robotics<sup>2</sup>

**HALF**  
of retailers plan to start  
an in-store robotics project  
**IN THE NEXT 18 MONTHS**<sup>2</sup>

**77%**  
of large retailers are prioritizing  
**BUILDING A DEFINITIVE**  
**ROBOTICS STRATEGY**<sup>2</sup>

### Top Retail Robotics Use Cases<sup>2</sup>



Floor Cleaning



Shelf Scanning



Planogram  
Compliance



Pricing Accuracy  
Checks



Order Picking

<sup>1</sup>ABI Research, "Over Half Million Mobile Robots to be Shipped to Warehouses Globally in 2030," Sept. 2021, <https://www.abiresearch.com/press/over-half-million-mobile-robots-be-shipped-warehouses-globally-2030/>

<sup>2</sup>RetailWire study, "Robots in Retail: Examining the Autonomous Opportunity," April 2021, <https://retailwire.com/resources/robots-in-retail-examining-the-autonomous-opportunity/>

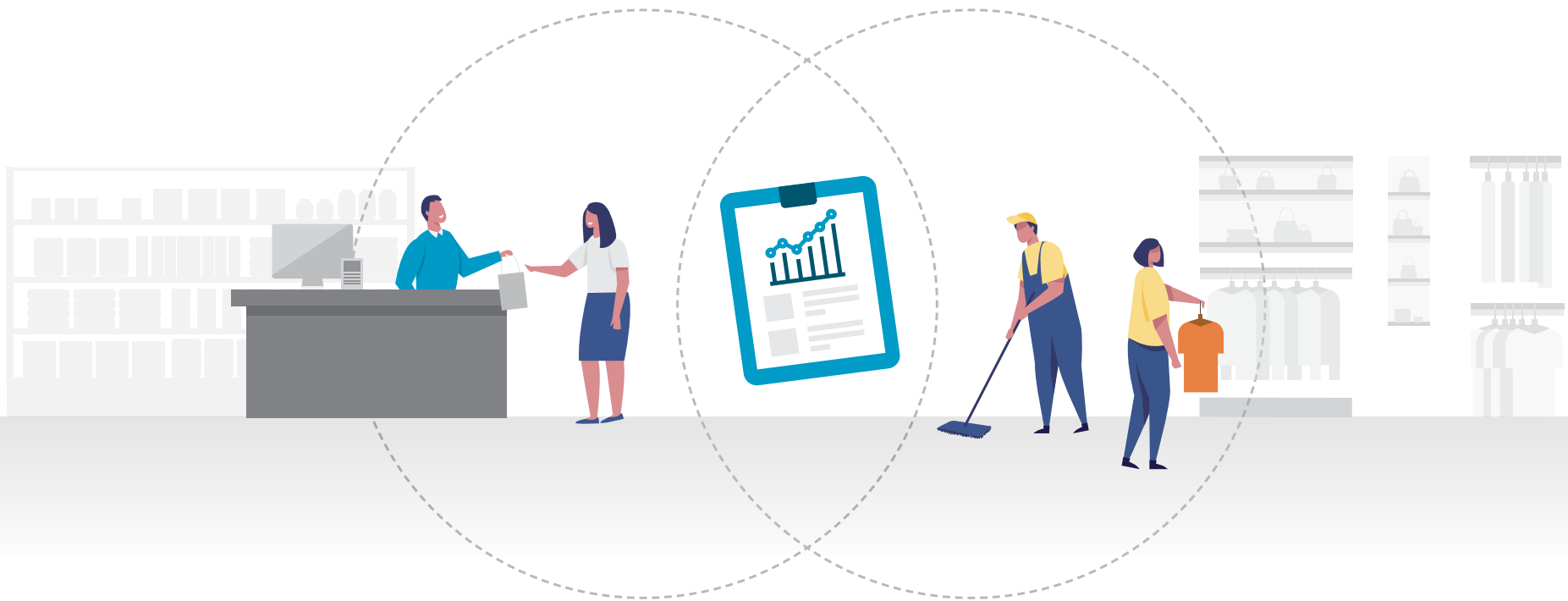


## Rising to new challenges

In retail, consumer expectations are higher than ever, and steadily growing labor pressures have morphed into severe and widespread labor shortages and sharply rising labor costs.

**Despite the turbulent circumstances, the path forward for retail leaders is clear:**

- Retailers need to consistently deliver stand-out customer experiences.
- They need to do that while controlling costs, including labor.
- And in the middle of that venn diagram, they need to harness Big Data to find their biggest opportunities to drive more intelligent operations across their business.





## Solving key challenges with robotics: labor

### Labor Challenges Continue to Rise



**71% OF MANAGERS** say that improving labor productivity is a key priority<sup>1</sup>



**5% INCREASE** in wages and salaries for the 12-month period of March 2022-March 2023<sup>2</sup>



**NEW OVERTIME RULES** went into effect in 2020 under the Fair Labor Standards Act (FLSA)<sup>4</sup>



More than half of U.S. States instituted a **MINIMUM WAGE INCREASE** in 2022<sup>3</sup>



**\$1,252 AVERAGE COST** to train a new employee<sup>5</sup>

### Labor Force Participation Declining<sup>7</sup>



Both the labor force participation rate and the employment-population ratio remain **below their pre-pandemic February 2020 levels**.<sup>6</sup>

**TAKEAWAY:** Labor challenges from unfilled positions to high turnover continue to be a major hurdle for retailers. Robotic cleaning machines get the cleaning done while allowing employees to focus on customer-facing activities that only humans can do.

<sup>1</sup>Cleaning & Maintenance Management, In-House/Facility Management Benchmarking Survey Report, 2021, [https://www.cmmonline.com/wp-content/uploads/cmm-fm-survey-2021\\_full.pdf](https://www.cmmonline.com/wp-content/uploads/cmm-fm-survey-2021_full.pdf)

<sup>2</sup>U.S. Bureau of Labor Statistics, Employment Cost Index, March 2023, <https://www.bls.gov/news.release/pdf/eci.pdf> // <sup>3</sup>Wolters Kluwer, More than Half of US States to Institute a Minimum Wage Increase in 2022, December 2021, <https://www.wolterskluwer.com/en/news/more-than-half-of-us-states-to-institute-a-minimum-wage-increase-in-2022> // <sup>4</sup>U.S. Department of Labor, Wage and Hour Division- Overtime Pay, <https://www.dol.gov/agencies/whd/overtime>

<sup>5</sup>EduMe, "What is the Average Cost of Training a New Employee?" <https://www.edume.com/blog/cost-of-training-a-new-employee/> // <sup>6</sup>U.S. Bureau of Labor Statistics, The Employment Situation – April 2023, May 2023, <https://www.bls.gov/news.release/pdf/empst.pdf> // <sup>7</sup><https://fred.stlouisfed.org/>, "Labor Force Participation Rate"



## Solving key challenges with robotics: customer experience

### Leveraging robotics to support enhanced store cleaning

Shoppers are more sensitive than ever to the cleanliness of stores. Cleanliness sets the tone for the entire customer experience (CX), and retailers are cleaning more frequently to meet these expectations. Some retailers have seen costs associated with cleaning increase significantly. Perhaps more challenging, however, is allocating more labor to cleaning tasks at a time when labor is as tight as ever.

Robotic floor cleaning machines provide a powerful solution to support enhanced store cleaning. These autonomous cleaning machines use the same proven floor cleaning mechanics most retailers are already using. But the machines are fitted with sophisticated, AI-driven technology and sensors that enable the machine to seamlessly and safely navigate a retail sales floor and clean autonomously—even during store hours.

**Robotic floor cleaners allow retailers to leave the frequent, methodical floor scrubbing to the robots—freeing up more time for staff to focus on wiping down and disinfecting high-touch surfaces, and other key infection-control measures in the facility.**

### Heightened cleanliness standards are here to stay

**72%** of retailers agree that consumer expectations around **store cleanliness** aren't returning to pre-pandemic standards<sup>1</sup>

**36%** of retailers believe there is no end in sight for the need to maintain pandemic levels of **store cleanliness**<sup>1</sup>

**85%** of consumers say that **visible cleaning is critically important**<sup>2</sup>

<sup>1</sup>RetailWire study, "Robots in Retail: Examining the Autonomous Opportunity," April 2021, <https://retailwire.com/resources/robots-in-retail-examining-the-autonomous-opportunity/>

<sup>2</sup>Deloitte Digital, "Safety and cleanliness—make it or break it," June 2020,

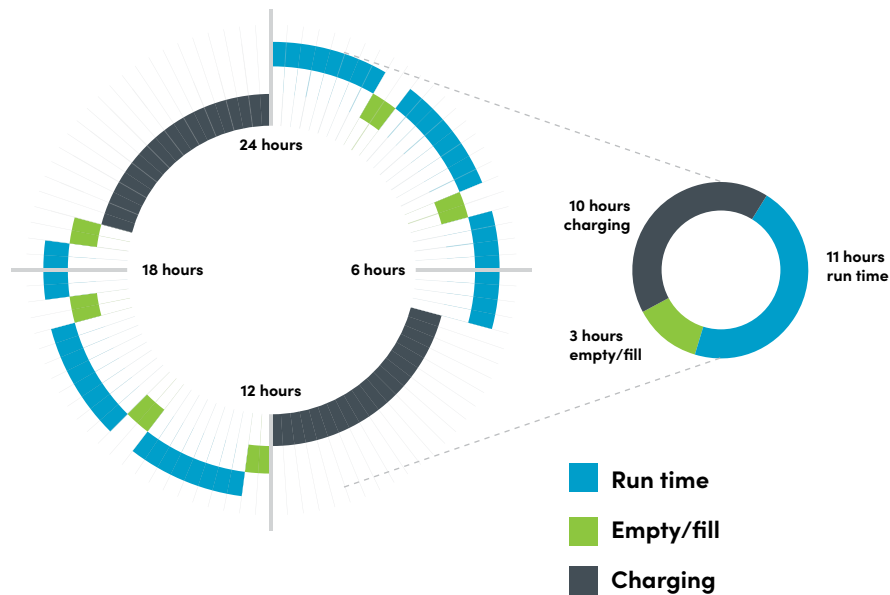
<https://www.deloittedigital.com/content/dam/deloittedigital/us/documents/offerings/offering-20200626-safety-cleanliness-covid.pdf>



## Real-world retail robotic results

### More cleaning time

The T380AMR with high-capacity lithium ion battery has a run time of up to **11 hours** in a 24-hour period.<sup>1</sup>



**3,375**  
**units**

deployed in retail locations



**43.66**  
**billion ft<sup>2</sup>**

of retail space cleaned with  
Tennant AMRs



**13,000**

average autonomous  
square feet cleaned per  
day per machine

<sup>1</sup>Assumptions: This example is based on an optimal Empty/Fill time of 30 mins - may take longer or less time depending on conditions. Estimated total charge and run time is based on High-Capacity Lithium-Ion Battery option. Estimated run time between empty/fill is based on ec-H2O NanoClean<sup>®</sup> Low Flow with a 60-gallon recovery tank.



## Harnessing the power of robotics data

Robotic technologies provide new streams of real-time data that hold powerful insights on in-store operations:

### Turning Data to Insights to Actions



#### DATA

Robotic floor cleaning machines provide performance data that shows which areas were cleaned and how frequently



#### INSIGHTS

Store leaders receive real-time reports that provide proof of cleanliness and gain confidence that a clean store can help create a better CX



#### ACTION

Labor can be re-deployed to other tasks to support CX, including cleaning bathrooms, stocking shelves, collecting carts, and other value-added tasks





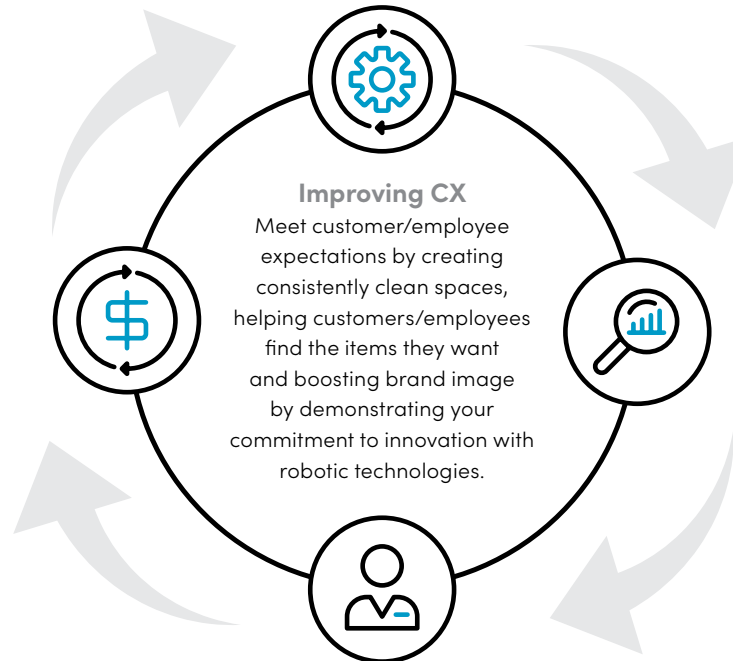
## Building a continuous cycle of robotics value

### Improving operational consistency

Robots are great at consistently repeating tasks and providing data as proof of completion. Using robots to execute routine tasks, like floor scrubbing and shelf scanning, can help provide consistent and positive experiences to customers and employees, which can lead to increased loyalty.

### Effectively managing costs

With rising labor costs and challenges finding skilled staff, automating floor cleaning and inventory data collection can help optimize operational costs and leverage the data for more effective cleaning and inventory management processes.



### Improving CX

Meet customer/employee expectations by creating consistently clean spaces, helping customers/employees find the items they want and boosting brand image by demonstrating your commitment to innovation with robotic technologies.

### Data-driven insights

Act on data-driven insights captured by autonomous technologies to improve facility operations—from smarter inventory optimization, to opportunities to drive labor efficiency—and ultimately reinforce efforts to enhance customer experience.

### Re-deploying labor to add more business value

Free up time for staff to focus on other tasks and strategic initiatives that add value to the business and provide staff new skills that increase employee engagement—enhancing labor efficiency and improving employee satisfaction.





## Robotics is changing retail for good. Are you ready?

The question is: do you want to be ahead of the curve, or chasing from behind? To stay ahead, retailers should begin identifying opportunities where robotic floor scrubbers can help their operations. Launching a pilot program can put your business in a better position to easily and rapidly scale up and expand in the future.

**Contact us today to set up a meeting with a Tennant expert.  
Ask about our free site survey & robotic scrubber demonstration.**

**Learn more at [tennantco.com](https://www.tennantco.com)**

**For additional information, call [+1.800.553.8033](tel:+18005538033) or email [info@tennantco.com](mailto:info@tennantco.com)**

## About Tennant Company

Tennant Company is a world leader in designing, manufacturing and marketing solutions that empower customers to achieve quality cleaning performance, reduce their environmental impact and help create a cleaner, safer, healthier world. Our products, including industry-leading robotic floor scrubbers, help our customers clean more spaces more effectively, addressing indoor and outdoor cleaning challenges. Tennant Company has manufacturing operations throughout the world and sells products directly in 15 countries and through distributors in more than 100 countries, backed by the industry's most extensive global field service network. For more information, visit [www.tennantco.com](https://www.tennantco.com).