

# Achieving Full In-Store Visibility

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simbe



A RETAIL  
TECHNOLOGY  
GUIDE

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The store interior is retail's last data desert. Here's a closer look at the tools available today that are helping teams achieve true in-store visibility and how you can choose the right ones.

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# The Road to True Visibility In Stores

Retail is dynamic, and modern stores are becoming hubs that blend shopping, fulfillment, and experiential offerings. As in-store technology advances, retailers are introducing innovations like autonomous inventory robots, cashierless stores, and near-instant delivery and pick-up options. Each new investment generates more data, helping stores close the shelf-level visibility gaps that lead to common issues such as out-of-stocks, pricing errors, inaccurate promotions, and planogram compliance failures. It also provides valuable insight into customer habits and preferences to enhance the shopping experience.

As a result, retailers are eager to adopt modern solutions. In 2023, food retailers poured more than \$10 billion—about 1% of total sales—into technology. By 2025, tech spending is expected to increase by 400%, with two-thirds of retailers planning to ramp up their tech investments in the

next 18 months. But businesses often find themselves uncertain about where to allocate their time and budgets—whether to focus on back-end systems, customer-facing tools, or both. Some have also had bad experiences investing in technology that over-promised and under-delivered, disrupting operations without meeting expectations.



Tech spending is expected to increase by **400%**, with two-thirds of retailers planning to ramp up their tech investments in the next 18 months.



**The reality is that different types of retail environments may require unique store technology,** and some stores need a mix of technologies to achieve full visibility. Tech solutions need to make sense for the store size and layout, the types of products being sold, and the existing technology infrastructure and maturity. In addition, there will be variability in how quickly the technology can be set up, how much initial risk is involved, and how long it takes to see the impact and results.

Complete in-store visibility involves strategically combining tools to maximize ROI, ensuring that shelves stay stocked, products are available, and customer needs are met. Ultimately, better visibility translates into a better customer experience, stronger store loyalty, and more revenue opportunities.



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# How Different In-Store Technology Can Work for You

Investing in new technology is a significant commitment for grocery retailers. Beyond the upfront costs of hardware and software, there's also the time and effort required to research the technology, train employees, and fully realize the benefits—for example, rolling out a new POS system means retraining hundreds of team members.

To help understand which solutions will work best for your business, first consider the following questions:

- ❓ What problem do I want the technology to address, and how quickly?
- 💰 What solutions are appropriate for the store size, layout, and budget?
- 📦 Do the types of products I sell favor specific technology solutions?
- 🔌 How will the solution integrate with my existing technology? Do we have the network bandwidth to support adding new solutions to our tech stack?

How can we assemble a purchasing team that represents all areas of the store likely to be impacted by the new technology?

To get the best ROI on all the time and resources a new technology investment requires, choose a solution that will help address your store's biggest pain points as quickly as possible. Here's a closer look at some of the in-store technology solutions that today's top retailers are considering, their primary benefits, and situations where they excel:



# A Closer Look: In-Store Tech Solutions

	OVERVIEW	BENEFITS & VALUE	USE CASES
<b>Fixed cameras</b>  <i>84% of shoppers view stores with robots as innovative</i>	<ul style="list-style-type: none"> <li>Mounted to shelves or walls, providing high-frequency monitoring of a specific area</li> </ul>	<ul style="list-style-type: none"> <li>Ideal for monitoring high-turnover and high-risk sales areas</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring high-theft and high-value areas, especially in smaller-footprint stores</li> <li>Inventory management for high-turnover areas like produce and prepared foods</li> </ul>
<b>Autonomous mobile robots (AMRs)</b>  <i>84% of shoppers view stores with robots as innovative</i>	<ul style="list-style-type: none"> <li>Robots that move throughout the store, using computer vision cameras to capture inventory counts, price tag information, and item location data</li> </ul>	<ul style="list-style-type: none"> <li>Provide precise inventory counts, track pricing accuracy, and identify out-of-stocks</li> <li>Reduce manual labor and allow employees to focus on higher-value tasks</li> <li>Improves inventory accuracy and visibility, reduces shrink, and enables faster stock checks</li> </ul>	<ul style="list-style-type: none"> <li>Shelf scans for large stores or wholesale clubs to reduce stockouts and optimize replenishment</li> <li>Ideal for capturing center store aisles, dairy, and freezer sections</li> </ul>
<b>RFID tags</b>  <i>Retailers who used RFID tags saw about 57% higher profits than those who didn't</i>	<ul style="list-style-type: none"> <li>Attached to products, these tags use radio waves to track and manage inventory both in-store and across the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Improves inventory accuracy and visibility, reduces shrink, and enables faster stock checks</li> </ul>	<ul style="list-style-type: none"> <li>Especially useful for tagging apparel, footwear, and electronics</li> <li>Necessary component of checkout-free stores</li> </ul>
<b>Electronic shelf labels (ESL)</b>  <i>An average store might change over 7,000 price tags each week</i>	<ul style="list-style-type: none"> <li>Digital price tags that can be updated remotely in real time through wireless networks</li> </ul>	<ul style="list-style-type: none"> <li>Reduces labor time and costs associated with price changes while boosting pricing and promotion accuracy</li> <li>Gives stores the ability to use dynamic pricing</li> </ul>	<ul style="list-style-type: none"> <li>Managing frequent price updates and promotions in high-turnover areas</li> <li>Ensuring pricing compliance</li> </ul>
<b>AI-powered predictive analytics</b>  <i>AI can reduce forecasting errors by up to 50%</i>	<ul style="list-style-type: none"> <li>Advanced algorithms that analyze store data from various sources, such as sales, inventory, and customer behavior</li> </ul>	<ul style="list-style-type: none"> <li>Improves demand forecasting</li> <li>Provides insight into customer trends that guide store operations optimizations</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing product placement and promotion strategies</li> <li>Improving coordination across the supply chain</li> </ul>
<b>Self-checkout kiosks</b>  <i>Now the most popular checkout option at grocery stores, self-checkout kiosks accounted for over 55% of all transactions in 2022</i>	<ul style="list-style-type: none"> <li>Kiosks that allow customers to scan and pay for items themselves</li> </ul>	<ul style="list-style-type: none"> <li>Speeds up checkout for customers, reducing wait times during peak shopping times</li> <li>Reduces labor costs</li> <li>Provides real-time data on transaction trends, product popularity, and scanning accuracy</li> </ul>	<ul style="list-style-type: none"> <li>For stores that see predictable peak shopping times</li> <li>Helpful if facing labor shortages or staffing limitations</li> <li>Boosting front-end sales</li> </ul>
<b>Smart carts</b>  <i>64% of shoppers are willing to try smart cart technology</i>	<ul style="list-style-type: none"> <li>Shopping carts with built-in scanners, scales, and touchscreens with real-time receipt tallies</li> </ul>	<ul style="list-style-type: none"> <li>Tracks customer shopping behavior including how long they spend in areas of the store and what products they put back on shelves</li> <li>Providing real-time inventory data to shoppers</li> </ul>	<ul style="list-style-type: none"> <li>Optimizing store layouts, product placement, and promotions</li> <li>Offering personalized, enhanced in-store shopping experiences</li> </ul>



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Robotic technology through Simbe is the backbone that feeds all our other technology investments, whether it's electronic shelf labels or task management in the store. It drives our data collection and informs decisions across the organization, helping

us make better, faster, and more efficient decisions.”

TIM HORTON  
VICE PRESIDENT  
OF CENTER STORE

**Schnucks**



According to our [In-Store Retail Robotics Consumer Research Report](#), today's shoppers are most frustrated by low or out-of-stock inventory, as well as inconsistent pricing or confusing promotions. Selecting the right technology to ease these frustrations ideally improves the in-store experience for shoppers while also generating valuable data and visibility into the business.



# Working Together: Combining Technology to Maximize Results

Many technology solutions deliver even better value to both the store and the shopper when used together. Combining tools allows you to track inventory across different types of retail environments, reduce shrink, optimize sales, and gain real-time insights into customer decision-making—all while enhancing the in-store experience for your shoppers.

The best type of technology investment will integrate with store intelligence across your whole ecosystem. For example, when used with computer vision, RFID technology can provide accurate inventory counts from warehouses and back rooms to shelves and POS systems—you always know where your products are, while also reducing shrink and improving sales.

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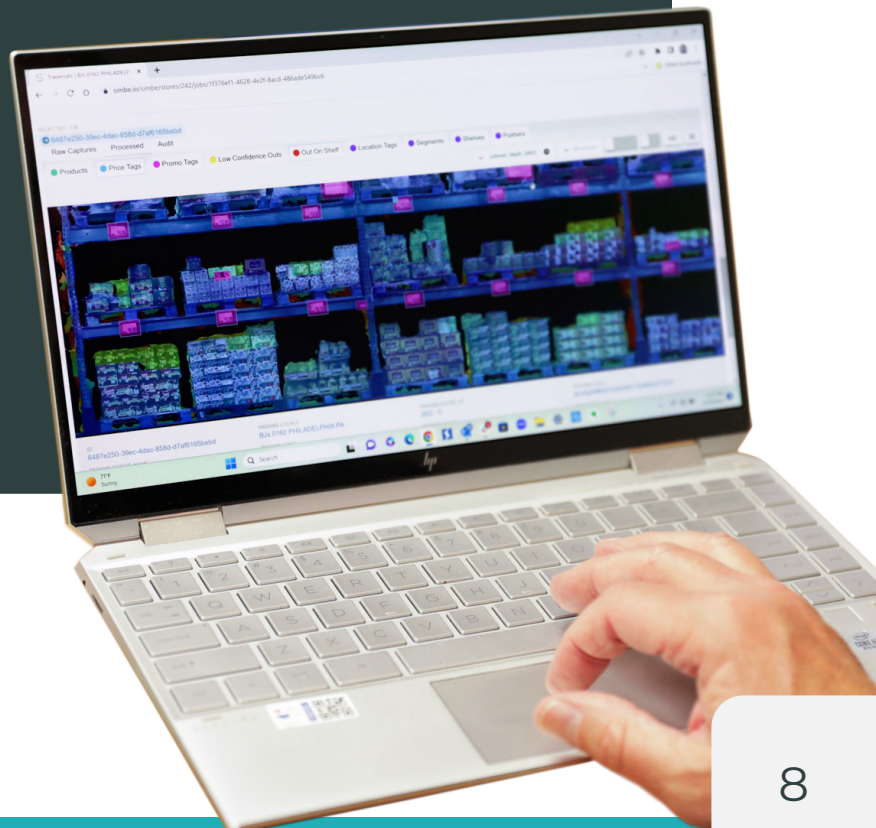
Using RFID and computer vision, along with a curated arsenal of technology solutions, stores can improve their inventory flows across shelves, pallets, backrooms, fitting rooms, and even e-commerce operations, ensuring that they

not only avoid shrink, but identify opportunities for continued growth.”

IHL SERVICES  
SURVEY



Here are just a few examples of how you can combine technology to get the best out of each solution:





# The Power of Integrated Solutions

	OVERVIEW	EXAMPLE
<b>ESLs + AMRs = Real-Time Shelf Accuracy</b>	AMRs scan shelves to track product availability and location. This data is sent to ESLs, which can immediately update to show real-time “out-of-stock” alerts or guide customers to alternate locations where the product is available	If an item is out of stock, the ESL displays an alert or directs customers to a nearby section with the same product, ensuring a seamless shopping experience
<b>RFID + AI Analytics = Precise Inventory Management</b>	RFID provides real-time location and stock levels of tagged items, while AI analytics process this data to optimize restocking and forecast demand trends	RFID tags identify dwindling stock levels for popular products, and AI predicts the optimal reorder quantity to ensure the store is restocked before shelves run empty
<b>Fixed Cameras and Self-Checkout Kiosks = Reduce Shrink + Protect Profits</b>	Fixed cameras monitor self-checkout stations to identify potential theft or scanning errors	If a customer skips scanning an item, fixed cameras can alert staff or pause the self-checkout process to verify the transaction
<b>Smart Carts + AI Analytics = Personalized Shopping Experiences</b>	Smart carts track individual shopping behaviors and share data with AI analytics to create tailored recommendations and promotions for each shopper	A smart cart identifies a customer’s preference for organic products, and AI analytics suggests a new organic product on the cart’s touchscreen, increasing the chance of a sale
<b>Fixed cameras + AMRs = Comprehensive In-Store Visibility</b>	AMRs create a live map of the store’s shelf state, while fixed cameras enhance high quality data with more frequent scans of priority areas, providing actionable insights to reduce out-of-stocks and drive sales.	Store teams rely on both regular shelf scans by AMRs to address daily out-of-stocks across the store, and high-frequency data from fixed cameras to restock high-turnover areas like the prepared foods section.
<b>Smart Carts + AMRs = Improved Store Navigation</b>	Smart carts provide customers with a store map based on AMR-collected data, helping them locate products more efficiently and guiding them through their shopping list	A customer looking for a specific brand of cereal gets directions on their smart cart’s screen, using real-time data from AMRs that have mapped out product locations and availability
<b>ESLs + AMRs + AI Analytics = Proactive Inventory Management</b>	AMRs scan shelves and collect data on stock levels, ESLs display real-time stock information and pricing updates, and AI analytics forecasts demand trends and automates restocking	If AMRs detect that a high-demand product is running low, AI analytics triggers a restocking alert, and ESLs automatically adjust to display promotional pricing to encourage quicker sales of remaining stock. This ensures shelves stay stocked and inventory turnover is optimized



## Three Ways Tally + ESLs Have Benefited *Schnucks* Markets

Schnuck Markets have deployed Tally, our autonomous mobile robot, across their entire chain. After also transitioning to ESLs (Electronic Shelf Labels), Schnucks saw the following improvements:

- 1 Provide customers with helpful out-of-stock information: When Tally detects an item is out of stock and not available in-store, Schnucks can instantly update the label to say “temporarily out of stock,” saving employees time and preventing customers from asking if it’s in the back.
- 2 Easily identify products on shelf: Tally gathers precise product location data, so when a customer or third-party shopper is near the correct section, the ESL tag flashes to show exactly where the product is on the shelf.
- 3 Reduce phantom inventory and gain insight into supply chain: Tally’s data helps stores differentiate between out-of-stock items that are actionable and those delayed by supply chain issues, enabling more informed conversations with buyers and suppliers.

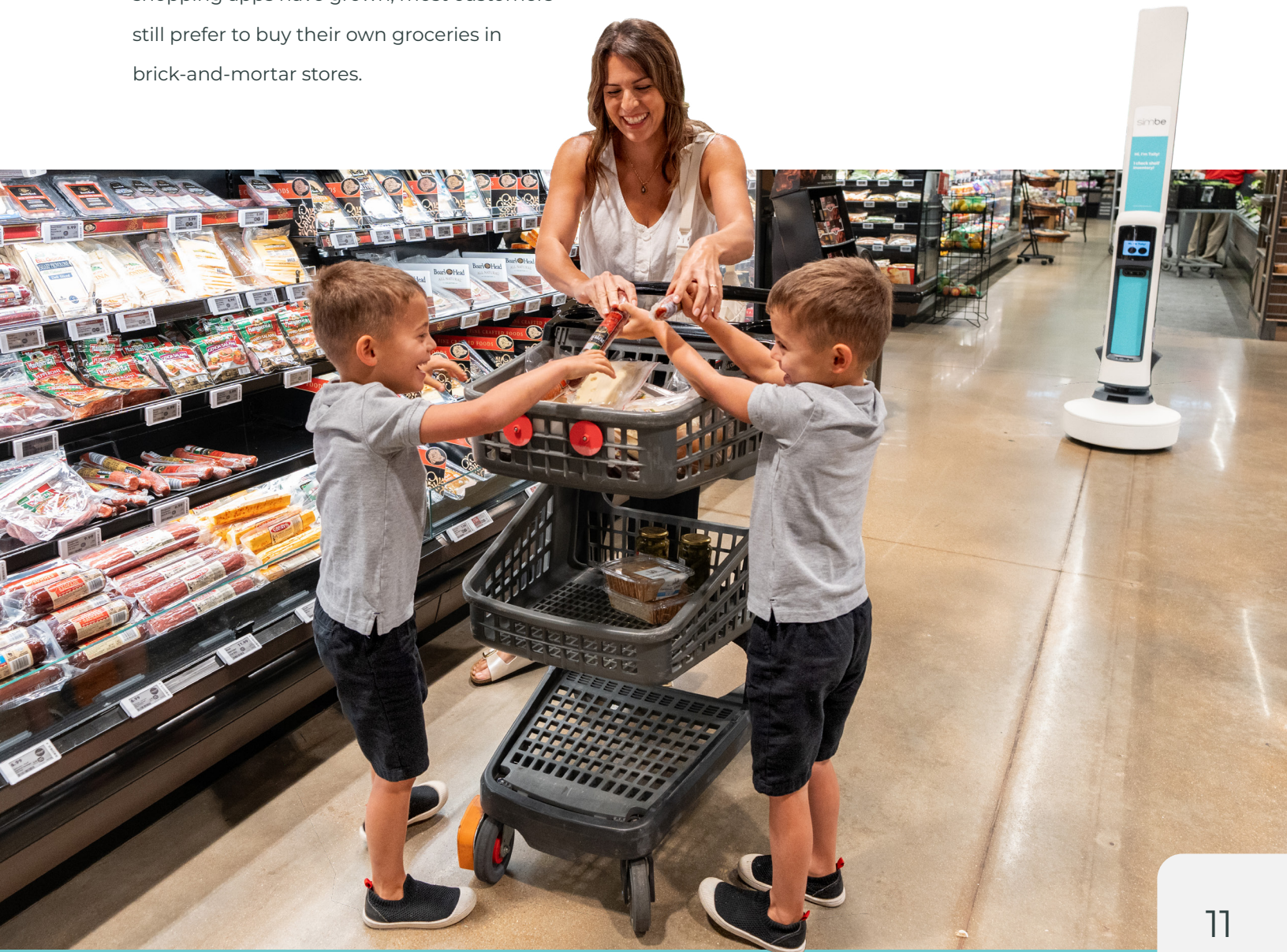




# The Value of True Visibility for Your Shoppers—and Your Employees

## Building Up the Shopper Experience

There's a direct connection between inventory management, product availability, customer satisfaction, and loyalty. It's challenging and expensive to acquire new retail customers, and grocery, in particular, is a high-loyalty, high-retention business. While online grocery ordering and third-party shopping apps have grown, most customers still prefer to buy their own groceries in brick-and-mortar stores.



**Opportunities exist to impress customers, from the moment they walk into the store to the moment they check out.** Whether it's how the store is laid out, how buying decisions are presented, or how products are arranged on the shelf, you're better able to tailor the shopping experience to meet your customers' needs with increased visibility from technology solutions. Out-of-stocks are the top complaint for shoppers (both in-store and online), and 40% of shoppers don't want items substituted. Shelf-level visibility ensures you have what your customers need when they need it, keeping them happy and building trust that you can meet their needs—which keeps them coming back.



Out-of-stocks are the top complaint for shoppers (both in-store and online), and 40% of shoppers don't want items substituted.

Shelf-level visibility ensures you have what your customers need when they need it.

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Most projects that come across my desk look to save labor. But [Tally] was not that, because honestly, it's about top-line sales. We're looking to get one more item in the store and in that customer's basket.

Tally was easy to integrate with most of our systems, giving us the ability to run quickly. We're seeing top-line growth, thanks to more items on the shelf. Where other projects might take six, nine, 12 months, this one we started to see the results right away.”



TYLER KING  
VP OF FINANCE





# Keeping Your Employees Engaged

Smart technology doesn't just keep customers happy—it benefits your employees too. In a recent study, 40% of retail staff said their employers overlooked their tech needs, with many citing tech frustrations as a top reason for leaving their jobs. In an industry already facing high turnover, the right technology can help retain employees by freeing them from repetitive tasks and letting them focus on more meaningful interactions with customers.

While labor is a major expense, technology isn't about replacing workers—it's about empowering them. By giving employees the time and ability to engage more with customers and provide better service, you create a valuable brand experience that builds loyalty and keeps shoppers coming back. And, with more time to dedicate to training, onboarding, and development, managers are better equipped to keep associates engaged and satisfied in their jobs.

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When you're handling tags, you're using really good talent for a time-consuming task. Allowing those teammates to spend that time managing the team or having customer interactions is important. By letting Tally scan the outs, they can focus on helping customers, teammates, or addressing actionable outs. That's what's important. It builds morale, creates a better department, and

improves overall conditions.”



ADRIAN SALAZAR  
STORE MANAGER

**Schnucks**

# Deciding What's Right for Your Stores

Quality data is the foundation for true visibility into what's happening at the shelf level in your stores, and innovative technology puts that data at your fingertips. To achieve full visibility, you may need multiple technology solutions working together, depending on the type of products you sell, your store size and layout, and your existing technology infrastructure and maturity.

**Contact us today** to learn more about Simbe Store Intelligence Solutions.

Talk with an expert today to learn more about how multimodal technology can keep your products on shelf, your prices accurate, and both your store teams and customers happy.

