Autonomous Perception for Retail Inventory

Pensa

The $1T Retail Inventory Visibility Problem

Inventory visibility on the store shelf is an age-old problem for CPG brands and retailers – and it's only getting worse as e-commerce and physical store shopping combine. Retailers alone miss out on $1T every year due to not having what customers want on the shelves [1].

The problem boils down to a lack of visibility—you can't re-stock what you can't see. Manual checks are expensive, spotty and incomplete. Newer technology solutions, such as ground robots, fixed cameras and smart shelving, are proving themselves overly expensive, complex, brittle and/or limited in accuracy. Pensa represents a real breakthrough, offering brands and retailers a powerful new tool to boost revenues, profitability and customer satisfaction at a critical time in the industry.

Pensa's Breakthrough Approach

Pensa collects data faster, more frequently, with greater accuracy and at a lower cost per location than any other approach, whether manual or automated.

Pensa's system is uniquely effective at understanding real product and shelf conditions because:

- **It combines drone or phone-based computer vision with patent-pending AI** in the cloud to rapidly scan and automatically sense shelf conditions with high accuracy

- **It sees every individual product,** recognizes missing items and spots misplacements and other planogram misalignments

- **It learns, evolves and gets more accurate as it goes** — across all locations and ongoing packaging changes

- **Its automated visual audit is real-time,** comprehensive and actionable

- **It offers conclusions and makes predictions** about stockouts and optimal shelf management to drive increased profitability

In other words, Pensa gives retailers and brands a common, zero-lag view of what is *actually* happening on shelves – across all stores, any product category, at any point in time. It is uniquely able to eliminate the $1T retail inventory visibility blind spot, so brands and retailers can minimize stockouts, optimize product planning and increase revenue.

Pensa's lightweight, autonomous drones quietly scan store shelves with great agility and accuracy, feeding data to Pensa's AI-powered cloud for analysis and reporting.

Mobile phone scans offer an additional input option, extending the power of the Pensa AI system and its extensive analysis and reporting to any store at any time.

[1] https://www.retaildive.com/news/out-of-stocks-could-be-costing-retailers-1t/526327/

Pensa

Low Friction Deployment for Rapid Scalability

Pensa operates as a service, providing real-time shelf inventory data as a subscription, so brands and retailers can optimize shelf inventory at scale. As such, it is the first company to deliver a dramatically lower cost, highly accurate inventory visibility solution that requires minimal investment or integration at retail, so it can quickly scale across all stores, all shelves and all product categories. A live view of the world's retail shelves is now possible with Pensa.

A Common View, with Powerful Analytics

Retail has never been more complex or more competitive. More store layouts, more products, and more sales channels using the same inventory.

Shelf space is finite, and brands pay big money to plan it. They need data to manage their retail presence, and retailers need data to track items, manage inventory and optimize execution.

Pensa cloud-based services deliver complete, real-time and actionable data to each stakeholder. Pensa flags and reports on stockouts and predicts low stock in the future. Using its advanced artificial intelligence, it truly recognizes products on the shelf and how they are managed. It can compare shelf performance of a major brand against a competitor for stockouts, share of shelf and other shelf conditions impacting revenue.

Easily Identify Upside Potential
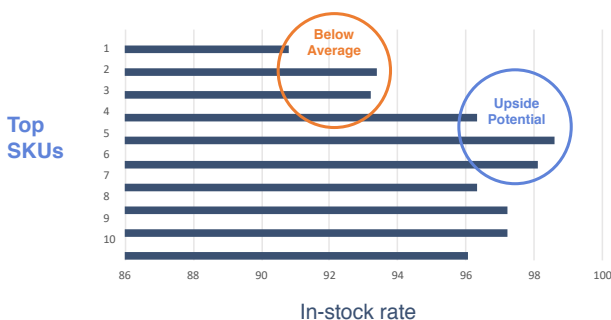
Drive Continuous Improvement
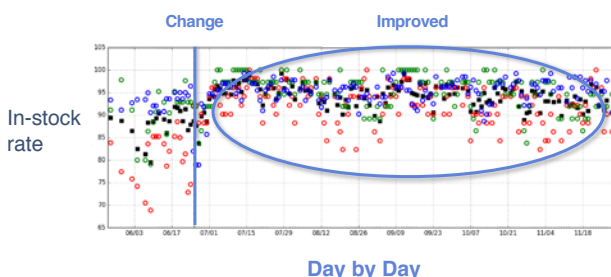
> **"I've never seen anything that comes close to Pensa's shelf inventory approach – it's a game changer for brands and retailers alike."**
>
> **David Ritter, former Partner and Leader of Retail-Store Operations Practice at McKinsey & Company**

Proven in Live Store Deployments

Pensa has performed multiple live deployments of its system, working with major retailers and global CPG brands. The system has been piloted in multiple countries on multiple product categories and SKU formats in a variety of shelf conditions – including dry shelf, open and closed-air coolers – and in a variety of store formats.

Due to its ability to learn and visually recognize individual items on each shelf, Pensa has demonstrated up to 40 percent more accuracy in stockout detection compared to the common industry practice of "gunning the holes" looking for gaps on the shelf. It has also proven the value of more frequent shelf scans to increase on-shelf availability and capture up to several percentage points of profitability.

Retailers and brands throughout all deployments reported positively on the system's tangible benefits—e.g., improving stockouts, better merchandising, improved operations, and tightening in-store inventory needed for Buy-Online-and-Pick up-In-Store. Shoppers were overwhelmingly positive when they noticed the drone at work and wanted to learn more.

> **"We're very enthusiastic about Pensa's new innovative approach to retail inventory visibility and look forward to testing in further commercial environments"**
>
> **Andrew Green, Global Director of Innovation Anheuser-Busch InBev**

About Pensa

Pensa is a leading innovator in autonomous perception systems for retail inventory. Its system uses breakthrough technology – including artificial intelligence, autonomous drones and computer vision – to see and understand what's on store shelves, providing crucial data to minimize stockouts, optimize product planning, and boost revenues and profitability. Pensa partners with top retailers and CPG brands globally to address a trillion-dollar "blind spot" at a critical time for the retail industry.

For more information

visit www.pensasystems.com or email info@pensasystems.com