

Enhancing Insights into Customer Behavior, Store Operations, and Product Sales with the PM AM Corporation i3Di Solution

The i3Di Solution is an AI-based video analytics platform powered by the Intel® Distribution of OpenVINO™ Toolkit and Intel® Xeon® Processors that provides advanced customer and operational insights for retailers and hospitality businesses



Powered by **PM AM**

About PM AM Corporation

PM AM Corporation is a global IT company that specializes in building innovative SaaS applications and solutions for a wide range of industries. By focusing on end-customer goals, PM AM works to deliver error-free, high quality end products.

Gathering Valuable Insights From AI-enabled Video Analytics

With the explosion of ecommerce shopping over the past several years, businesses have gained increased insights into shopper preferences and customer demographic breakdown. However, the same level of insight into in-store operations has not followed in-step.

Traditionally, grocers and other retail stores have not had access to data about their customer base, in-store operations, product forecasting, and more. While online retailers have advanced insights into these areas via data analytics captured through online traffic and purchases, brick-and-mortar stores face a greater challenge in capturing data on the ground.

Without detailed insight into their processes and customer preferences, retailers are experiencing inefficient staffing, inventory issues, poor product placement, inventory shortages, long lines, and increased costs. All of this results in less than optimal customer experiences at a time when retailers big and small are competing for shoppers' dollars.

Now more than ever, brick-and-mortar retailers need ways to compete, and intelligent video analytics enables them to do just that. In-store cameras provide near real-time information into number of visitors, demographic information, length of time spent inside, average basket size, and more. This data provides valuable insights to buying teams, marketing teams, and individual grocery departments for one store or across multiple locations.

However, video analytics solutions have steep setup costs, an inability to integrate into legacy hardware, and require in-depth technical knowledge. PM AM Corporation is helping retailers overcome these barriers with the i3Di Solution.

The PM AM Corporation i3Di Solution Enhances Customer Behavior Insights and In-store Operations

PM AM Corporation wanted to empower brick-and-mortar retailers with an intuitive video analytics solution without the prohibitive deployment costs that often create a barrier to entry for smaller and medium sized retailers. The result is the i3Di Solution which harnesses the power of AI, video technology, and advanced analytics to help retailers gain better information on customers preferences and enhance their shopping experience, increase revenue, and improve operational efficiencies. In addition, manufacturers gain insights into how their products are selling at a SKU-level to better improve operations with their own customers.

The solution uses video footage from smart cameras and CCTV to capture shopper behavior and in-store events. It features a centralized dashboard which displays near-real time data for retailers to act on and enables them to make data-driven decisions that can have immediate effects as well as enable future process optimization.

A typical video analytics solutions can cost retailers up to millions of dollars to deploy. PM AM Corporation offers a full end-to-end solution which gives them greater control over customization, scalability, and development.


Deploying the i3Di Solution can provide a host of benefits to retailers such as:

Optimize store operations: Retailers can leverage the footfall traffic capabilities to understand peak hours to enhance staffing efficiencies and inventory management capabilities. These insights can prevent product outages and ensure they are ordering the right amount of the products for their customers, preventing waste, and reducing costs.









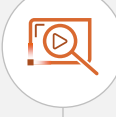
Improve shopper experiences: As retailers gather more information on shopper behaviors, retailers can provide more convenient and tailored customer experiences by expediting checkout times, ensuring product availability, and optimizing product placement based on customer journey mapping.

Streamline marketing efforts: Customer demographic profiles tell retailers who is most likely to buy which product. This ensures retailers can tailor their product advertising, inventory, and maximize their marketing dollars by speaking to the right audiences.

All these capabilities and resulting benefits ultimately increase profits and make it possible for small and medium size retailers to compete for a larger market share with big box store grocers and empowers them to scale quickly and cost-efficiently.



Key Capabilities

- 
Foot traffic counting
- 
Dwell time
- 
Customer journey mapping
- 
Inventory management alerts
- 
Shopping basket size breakouts
- 
Customer demographic segmentation
- 
Geo-targeted messaging
- 
Peak hour analysis
- 
Advanced video analysis

How The i3Di Solution Works

Solution implementation begins with a discussion between PM AM and their customer to identify the customer’s unique needs and match those with PM AM’s innovative capabilities. Customers and PM AM Corporation can work together to customize the solution with the key capabilities that best align to customer needs.

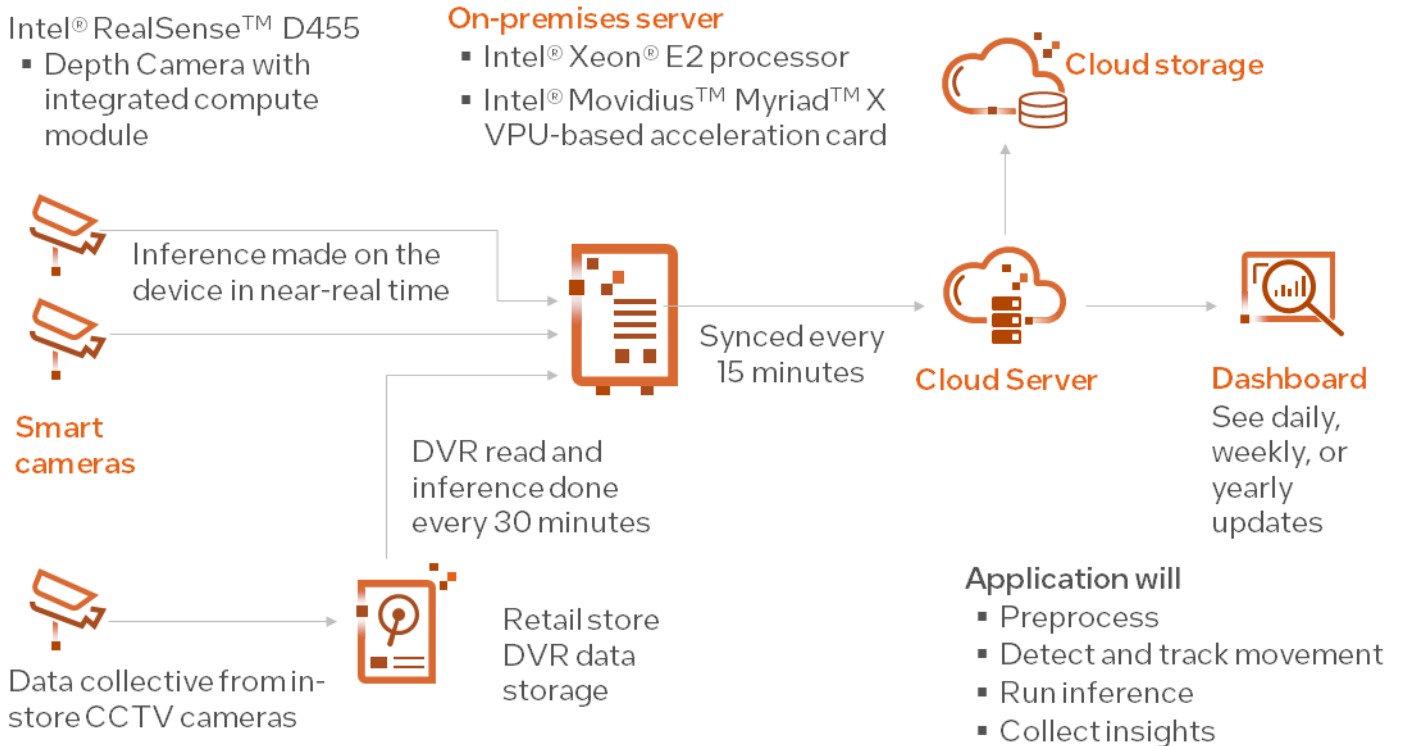
Once needs have been identified, deployment starts by identifying hardware needs:

- Customers can utilize legacy infrastructure and provide PM AM Corporation with access to existing video camera feeds.
- If cameras are not currently installed on the premises, or if customers want to supplement their current infrastructure to add new capabilities, they can work with the PM AM Corporation to deploy Intel® RealSense cameras. These enable 3D depth-sensing capabilities to help with inventory management, such as identifying low stock on shelves.

Footage captured by cameras is analyzed in near-real time via on-premises servers equipped with powerful Intel® Xeon® Processors and Intel® Movidius™ Myriad X VPUs, an ultralow-power VPU that enables cost-efficient scalability. The i3Di Solution server uses 16 VPUs but can easily scale up to 32 VPUs if customers require additional camera needs with more processing power, all without needing to purchase an additional expensive GPU.

Data stored on the on-premises server syncs with the i3Di cloud server every 30 minutes through a secured mechanism, and insights can be viewed on the solution dashboard for one store or across an entire chain. This dashboard acts as a central management platform not only to display all insights, but also enables retailers to easily customize use cases by camera, such as people counting to front of store cameras and inventory tracking to back of store cameras. Retailers can leverage aggregated insights provided from the dashboard to drive better decision making.

i3Di Architecture



PM AM's Partnership with Intel Optimizes the Solution and Brings Value to Retailers

PM AM Corporation has been able to deliver true value to the customer at an affordable price built on Intel technologies and support. Intel® DevCloud for the Edge allowed PM AM to arrive at the best combination of CPUs, VPUs, and GPUs by balancing cost and performance needs. Intel® Distribution of OpenVINO™ toolkit helped optimize the models to maximize resource utilization across Intel hardware. Quick support on technical issues ensured roadblocks were removed, which quickly cut down on R&D cost. Advanced smart cameras like Intel D455 made complex use case like depth sensing feasible. Prior to partnering with Intel, PM AM explored other alternatives which were either cost prohibitive, involved up-front investment in expensive hardware like GPU's, could not be optimized to spread inferencing across CPUs and GPUs simultaneously, lacked pretrained models optimized for retail scenarios and were not scalable.

Case Study: Neighborhood Grocer Leverages Insights To Improve Sales And Marketing

Town Talk Foods is a Texas-based grocery chain that offers bargain prices to their customers.

Challenge

The customer was facing constant pressure from online competitors as well as dealing with flat sales and low margins despite being in an area with high population growth. Without access to key insights about their potential customer base, Town Talk found it difficult to grow and compete with other retailers.

Solution

To stay competitive, Town Talk and PM AM Corporation discussed to install on-premises smart cameras in their 36,000 sq. foot store, in highly foot-trafficked areas to gather information on best-selling products, most visited areas of the store, and better understand their core shopper audience.

Results

Six months after launching, the i3Di Solution revealed numerous actionable insights:

- **Target advertising spending:** In the past, most of the marketing spend to Town Talk was targeted towards women and baby boomers, yet shopper demographic insights revealed over 40% of Town Talk shoppers were men or millennials. This data enabled Town Talk to optimize their advertising spend towards a more appropriate audience.
- **Optimize store layout:** i3Di was able to create audience-specific customer journey maps which allowed Town Talk to identify the most-visited parts of the store while also optimizing product layout in those areas.
- **Improve product availability:** Using the deployed smart cameras to surveil shelves in high-traffic areas, employees received inventory outage alerts when inventory levels were low, allowing them to restock product faster.
- **Forecast inventory and operations:** i3Di was able to accurately forecast foot traffic on a daily basis with footfall traffic projections, which Town Talk not only used to ensure there was enough product available to customers, but also to optimize staffing levels.

Leveraging the data and insights from i3Di, Town Talk achieved their sales targets ahead of time, which was remarkable given it was during the Covid pandemic. As a result, they planned to deploy the i3Di solution across other stores, while expanding into additional use cases.

Conclusion

Brick-and-mortar retailers need to adapt to an ever-changing technology landscape while setting the groundwork for future success. PM AM Corporation is enabling retailers with in-depth insights that enables them to provide better shopper experiences while enhancing their own operations. As the competition for customer loyalty increases, the sky is the limit for intelligent retailers who can marry in-store and shopper insights with online data.

Learn More

[PM AM Website](#)

[PM AM and Intel Partnership Page](#)

[i3Di Case Study](#)

[Intel® Distribution of OpenVINO™ Toolkit Product Page](#)

[Intel® Movidius™ Vision Processing Unit Product Page](#)

[Intel® Xeon Scalable Processor Product Page](#)

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This technology is very effective in determining which products are of value and who most appreciates the value. We are better able to determine the correct products, prices, and store locations than before we were using i3Di.

- Tom Brown
Owner and CEO,
Town Talk Foods

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