Solution Brief

Connected Venue Operations

PMY Delivers Smart Operating Platform with Intel® Technology for Venues and Events

Flexible support for a variety of sensor types with Intel® Smart Edge, enabled by 3rd Gen Intel® Xeon® Scalable processors and AI tools, helps fuel real-time operational insights and visualizations

PMY has worked extensively with Intel behind the scenes to optimize performance and further develop the platform's capabilities. The two companies have worked alongside each other to enable connected operations for some of the world's most recognizable and successful venues.

Many different departments, vendors, and technology platforms come together to support venues for large-scale sporting events, concerts, and other attractions. With thousands of excited attendees pouring through their environment, venue operators need real-time, at-a-glance visibility of their property's status—from foot traffic congestion to anomalies in crowd behavior, long wait times, average spend at kiosks or stands, and even the number of new or returning patrons.

By analyzing how visitors move around their space and interact with the amenities and facilities throughout the property, operators can optimize their environment for better guest experiences and improved profitability.

Challenge: Building a centralized view from disparate data points

As operators connect more sensors and data sources to their platform, their analytics and insights become richer, deeper, and more useful.

The diversity of data sources required for in-depth insights requires an analytics platform that can seamlessly connect all of them, not just a single device type. Plus, many venues already have some of these devices deployed. Supporting them requires an interoperable and vendor-agnostic solution.

Meanwhile, processing and analyzing data from all these varied sources requires powerful compute at the edge, often paired with resources running in the cloud. Fueled by accelerated compute, venue analytics platforms can deliver easily understandable visualizations and dashboards.

Solution: A flexible platform for operational insights

PMY leverages Intel-based servers and processing technologies, in conjunction with Intel® Smart Edge and the Intel® Distribution of OpenVINO™ toolkit, to power the PMY Smart Operating Platform, accelerate its AI capabilities, and enable real-time visualizations.

From dwell time at various areas throughout the venue to crowd congestion, peak concessions time, foot traffic patterns, lost revenue through line abandonment, and a diverse range of other metrics, the PMY Smart Operating Platform equips venue operators with the deep insights they need to optimize all aspects of their business. Anonymized insights on individual visitors help deliver incredible, personalized experiences.

A flexible platform for venue operational intelligence

Data sources → **PMY's SaaS platform** → **Use cases**

Existing + PMY overlay	PMY Smart Operating Platform	Customized to your objectives
Video cameras IoT sensors Point of sale Ticketing Access control Network Wireless Content/displays	**Read, process, learn, and send results from data** **PMY data fusion engine** API, middleware, PMY Vision, third-party integrations as needed **Data storage (cloud)** Microsoft Azure **Machine learning and automation engine** **PMY dashboard web app** Real time and historical, HTML5 Understand Automate Predict **Automate operations** Include integration with systems	1. System performance (health and issues) 2. Crowd intelligence (movement, usage, behavioral patterns) 3. Health and safety (contact tracing, security management) 4. Patron experience (occupancy/space management, queue management) 5. Revenue generation (food and beverage effectiveness effectiveness, marketing) 6. Cost optimization (workforce planning, stock/inventory control)

Built on Intel® Smart Edge Open

The PMY Smart Operating Platform supports a wide range of data sources, combining them with a powerful data fusion engine and web reporting dashboard to support a vast number of high-value uses cases for venue operators.

How it works

The PMY Smart Operating Platform, built on Intel Smart Edge and combined with Intel® hardware, provides a simplified pathway for connected operations at sports and entertainment venues. Venues can connect the PMY Smart Operating Platform with existing infrastructure such as Wi-Fi access points or cameras to reduce the initial costs of deploying a connected operations framework.

An interoperable and vendor-agnostic platform

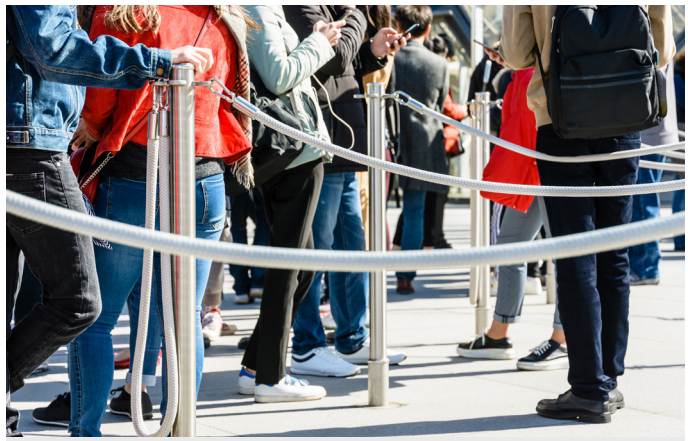
To accommodate the dynamic nature of event spaces, the PMY Smart Operating Platform can combine information from many different data types, including:

- Anonymized information from Wi-Fi- and cellular-connected user devices
- People counting or space occupancy data from AI-vision-enabled cameras
- RFID readers
- Other IoT devices such as temperature, proximity, or humidity sensors

Support for a wide variety of connected operations use cases

The platform analyzes information from data sources connected to its data fusion engine via custom-built AI algorithms, many of which are based on models offered as part of the Intel Distribution of OpenVINO toolkit.

By combining analysis from several data sources at once, the platform can discern vital statistics such as how many people are moving through a given area or occupying a specific auditorium, what items are most popular at a food stand, or how many first-time visitors are in the crowd.



Understand key venue metrics with the PMY Smart Operating Platform

- Queue times and average spend at kiosks and stands
- Occupancy of concourses, walkways, tunnels, and seating areas
- Engagement and dwell time at special activations, such as marketing partnership booths
- Anonymized customer insights to understand key demographics
- Security and incident reporting
- Attendance and revenue projections

Centralized real-time venue insights

The PMY Smart Operating Platform allows event staff, venue management, and executives to view insights and visualizations from an easy-to-use, intuitive dashboard. This reporting can be used in real time to optimize events as they occur. It can also be reviewed after the event to influence planning for future needs and help optimize costs. For example, by better understanding peak times for various concession areas, the venue operator can better plan staffing for upcoming events.

Automation to optimize responsiveness

Users can configure the PMY Smart Operating Platform to intelligently react as it identifies conditions throughout the venue. For example, if the system observes a spill or fallen guest via a camera deployed on the upper concourse, it can automatically alert staff. Notifications can be sent to inform guests about the event or even provide them with visibility into seating availability for events with general admission. Guests waiting in line for food or drinks can be alerted of alternative locations with lower wait times. By pairing intelligent, automated actions with specific criteria observed by the PMY Smart Operating Platform, venue operators can create a more seamless and responsive environment that optimizes business results and improves the guest experience.

How venue operators benefit from the PMY Smart Operating Platform

Enhance the guest experience
Understand their journey through the event space and minimize hassles

Increase profitability
Analyze guest purchasing habits and average spend with in-depth insights

Improve safety
Identify issues such as choke points or overcrowding and take remedial action via notifications for employees and guests

Reduce operating expenses
Use real-time data to better manage third-party service providers and minimize costs

The Intel advantage

PMY has worked extensively with Intel behind the scenes to optimize performance and further develop the platform's capabilities. The two companies have worked alongside each other to enable connected operations for some of the world's most recognizable and successful venues.

Accelerated compute at the edge and in the cloud

3rd Gen Intel® Xeon® Scalable processors provide the accelerated edge compute that's required by the AI inferencing and visualization capabilities of the PMY Smart Operating Platform. With the PMY Smart Operating Platform running on Intel-powered servers at the edge, venue operators get a flexible compute platform that accelerates AI capabilities and quickly delivers critical insights. These on-location servers can be paired with additional Intel hardware running in the cloud to augment the solution's capabilities.

The Intel Distribution of OpenVINO toolkit enables AI capabilities

The Intel Distribution of OpenVINO toolkit is a software development resource for AI inferencing applications. The PMY team uses this resource to streamline the development of the AI models included in the PMY Smart Operating Platform, which are applied in a variety of use cases, including congestion monitoring and hazard identification. The PMY team used pretrained models from the Open Model Zoo to kick-start their development efforts, then customized them to fit the needs of their customers.

Using the toolkit, PMY is able to optimize AI performance across Intel® architectures, allowing their customers to build connected operations infrastructures without overinvesting in specialized hardware.

Built on Intel® Smart Edge

The PMY Smart Operating Platform is built on Intel® Smart Edge, an edge-native distributed computing platform that enables deployment and management of container-based workloads with cloud-like ease, resiliency, and security at the edge. Intel Smart Edge runs demanding workloads like AI, media, and software-defined networking functions, powered by prevalidated blueprints and solutions provided by Intel and a robust partner ecosystem. Built on an open framework—with optional support and turnkey capabilities as a service—Intel Smart Edge removes edge-networking barriers for application developers, infrastructure builders, and end users at the network and enterprise edge.

Conclusion: Improving the guest experience while maximizing business results

The PMY Smart Operating Platform running on Intel Smart Edge and Intel processors provides venue operators with a streamlined path to connected operations and actionable, up-to-the-minute insights. As venues and entertainment spaces continue to evolve, this flexible platform positions operators to optimize their environment, improve profitability, and, ultimately, create more enjoyable experiences for their guests.

Learn more

PMY Smart Operating Platform

The PMY Smart Operating Platform equips venue operators with real-time insights about their customers and event environment. Using it, venue operators of all sizes can better understand conditions, automate responses, and predict future trends.

Find out more ›

3rd Gen Intel Xeon Scalable processors

The 3rd Generation Intel Xeon Scalable processor delivers advanced performance, security, efficiency, and built-in AI acceleration to handle IoT workloads and more powerful AI.

Find out more ›

Intel Distribution of OpenVINO toolkit

The Intel Distribution of OpenVINO toolkit helps accelerate the development and deployment of machine learning solutions.

Find out more ›

Intel Smart Edge

Intel Smart Edge simplifies edge networking and application deployment using an edge-native, CNCF-certified Kubernetes engine to manage workloads like network functions, security, AI applications, and media streaming.

Find out more ›

About PMY Group

PMY helps the world's leading venues, public places, and events transform their businesses and generate value using technology—from design to implementation and management.

pmygroup.com

intel + PMY.