

# Solution Brief

Retail  
Sensormatic IQ and Vision Works



## Harnessing Data to Transform the Shopping Experience

**Sensormatic**  
by Johnson Controls

### COVID-19 accelerates Sensormatic Solutions and Intel's plan to bring AI insights to in-store retail

*"Intel's AI technology for the edge, paired with our Sensormatic IQ platform, are helping to power the digital transformation of the retail industry. Through this collaboration and shared commitment to innovation and engineering, we are pleased to deliver solutions to address our retail customers' biggest challenges and confidently move into the future."*

—Bjoern Petersen, President,  
Sensormatic Solutions

Retailers have long understood that the experience they offer shoppers is nearly as important as the products they carry. Creating that differentiating experience starts with learning more about shoppers' traffic patterns and dwell times. It also means developing a deep understanding of how effectively the business is operating and delivering on the promise of seamless unified commerce.

Today's retail business is a data business. Retailers increasingly look to data—and, by extension, the technology that captures and analyzes it—as critical tools in their ongoing bid to understand what customers want, sharpen operational efficiency, and compete in an increasingly complex and competitive marketplace. Retail is, for example, one of the industries most aggressively pushing to explore how businesses can create measurable value with edge artificial intelligence (AI) solutions.

Starting in 2020, retailers also turned to technology and AI to manage another set of pressing challenges brought on by the global coronavirus pandemic. Spanning store shutdowns, social distancing guidelines, mask mandates, customer uncertainty, as well as shifts in retail and consumer behaviors, these developments demanded new tools, approaches, and priorities.

**Sensormatic Solutions**, a part of Johnson Controls and an established retail expert, sought to use its technology, expertise, and partnerships to meet the challenge.

### Sensormatic Solutions harnesses data with Sensormatic IQ

Today, approximately 75 percent of the world's top 100 retailers already rely on Sensormatic Solutions' experts and comprehensive solutions portfolio.<sup>1</sup> **Sensormatic IQ**, the company's new intelligent operating platform for retail, integrates the full Sensormatic Solutions portfolio, retailer, and third-party data sources, along with advanced technology such as AI. This combination connects retailers to unparalleled visibility into operations and shopper insights. The aim is to equip retailers to harness the power of data—from smart sensors, the Internet of Things (IoT), and a growing list of emerging applications—to deliver frictionless shopping experiences. Sensormatic IQ drives prescriptive, data-driven outcomes for retailers, creating value and growth opportunities as those retailers move into the future.

The Sensormatic IQ platform is designed to be open, secure, and agile, integrating diverse data streams into a clearer, data-driven path forward for retailers. The reward is a deeper understanding of everything from inventory and labor optimization to shopper behavior, loss prevention and liability, and marketing impact. These insights help inform enhanced decision-making across the enterprise.



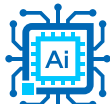
## Sensormatic IQ



Analytics and  
Insights



Smart Sensors  
and Devices



AI/ML



Cloud



Mobile



3rd Party Solution  
Integration



Open  
Architecture



Prescriptive and  
Predictive

### Driving New Data-Driven Outcomes

#### Intel collaboration speeds innovation

To further power the digital transformation of the retail industry, Sensormatic Solutions collaborated with Intel to help advance its technology and software enablement capabilities. Sensormatic combined Intel's edge AI technology with the Sensormatic IQ platform to deliver the prescriptive and predictive near-real-time insights that modern retail increasingly requires.

In spring 2020, after 18 months working on a video AI solution, Sensormatic Solutions pivoted development to assist retailers grappling with new social distancing goals and regulations brought on by the global pandemic. Using Intel® Vision Products and Sensormatic Solutions software, stores were able to track occupancy, monitor social distancing, and receive near-real-time alerts for health and safety. They also captured store insights, staffing suggestions, and predictions for customer behavior.

Sensormatic Solutions understood retailers wanted to avoid the undue complexity of a solution that relied on unique hardware and applications to address each use case. Their customers saw significant value in a solution built around scalable Intel-based hardware options and the single platform offered by Sensormatic IQ to provide insights.

#### Intel® Distribution of OpenVINO™ toolkit

The solution relies on the flexibility provided by the [Intel Distribution of OpenVINO toolkit](#), chosen to speed development of vision apps for the edge. The toolkit enables Sensormatic Solutions to optimize, tune, and run comprehensive AI inferences using the model optimizer and runtime and development tools.

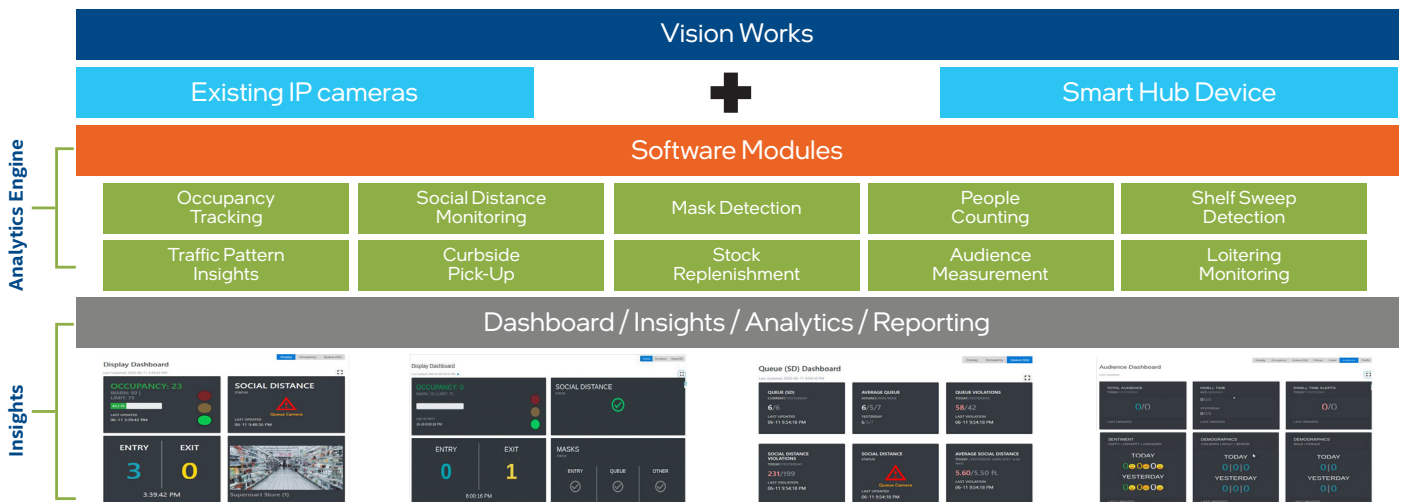
Sensormatic Solutions already had hardware and solutions deployed with many retailers. With the addition of a Smart Hub, Vision Works could also be added, offering a future-ready solution in which new use cases and modules can be simply subscribed to as business needs dictate.

The Intel Distribution of OpenVINO toolkit allowed maximum performance on a variety of Intel hardware targets. Sensormatic Solutions developers preferred to use open source models if available, however will train their own models if beneficial. Foundationally, the toolkit offers a welcome flexibility, freeing development to run just on the CPU/GPU or on accelerator cards. They could tackle development once and target scalable hardware options thereafter.

#### Vision Works' AI unlocks greater video value

As a building block and data source for Sensormatic IQ, Vision Works is a collection of video-based software modules built on computer vision models. The modules can use existing IP cameras, tapping into the device's near-real-time streaming protocol, and a Smart Hub appliance

with preinstalled computer vision components able to monitor camera streams. Optimized for retail and leveraging Sensormatic Solutions' proprietary AI algorithms, the modules use streaming video to provide real-world visibility as well as notifications and alerts.



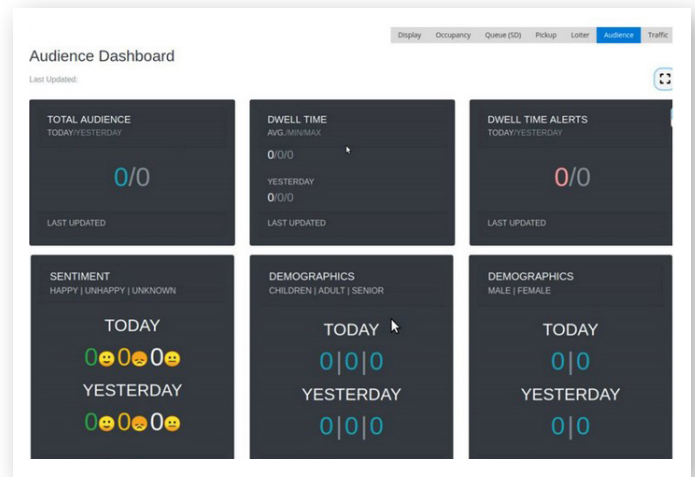
Deployment of a Vision Works software module is simple, requiring little more than assigning the module to an available video feed. A single feed can accommodate multiple modules and can be added, removed, or modified at any time to accommodate evolving business needs. Each module is assigned a specific task:

- **Audience measurement** – Helps determine the type of customers that enter the store by giving insights into their demographics and approximate mood.
- **Traffic pattern insights** – Provides insights about traffic patterns and helps retailers observe the consumer's path to purchase within the store.

Management of Vision Works is made easy through a one-stop, single-log-in, consolidated dashboard that immediately connects retailers with near-real-time data, operational and behavioral insights, and reporting on all enabled modules.

New modules are continuously being developed to address a host of retail use cases. Retailers were already relying on Sensormatic Solutions to address loss prevention and liability, inventory intelligence, and shopper insights. Now they are

looking to gain more-comprehensive insights made possible by AI technology. For example, in response to COVID-19, Sensormatic developed modules that focused on social distancing, mask detection, and occupancy, allowing retailers to sharpen operations during the pandemic.



## Near-real-time insights address COVID and more

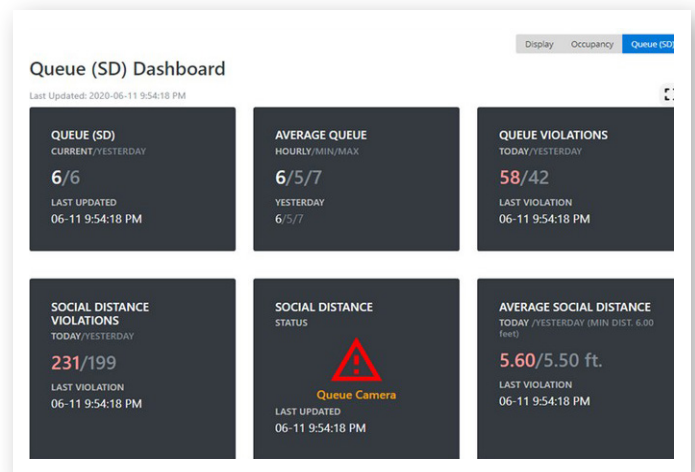
With the onset of the pandemic, Sensormatic Solutions worked quickly to bring Vision Works' AI enhancements to existing in-store cameras. Retailers were able to rapidly deploy an integrated Vision Works' solution during the pandemic that included the following:

- **Occupancy tracking** – Helps retailers comply with public health directives on occupancy, without allocating additional staff resources.
- **Social distance/queue monitoring** – Assists in monitoring queuing areas to determine the number of people who are currently waiting in line, monitors to ensure that customers are maintaining the appropriate distance from one another, and differentiates between family groups and clusters of strangers.
- **Mask detection** – Uses store video feeds to detect the use of facial masks within a predetermined area of the store.

These new Vision Works tasks enabled the following capabilities:

- Sending employees important notices when stores reach maximum occupancy
- Enabling specific staffing insights to inform recommendations based on occupancy trends
- Supporting digital signage at entrances
- Alerting customers about how full the store is at any given moment
- Providing a traffic light system to indicate when it is okay to enter

The tailored solutions offered retailers the right technology and insights to make business-critical decisions and to help ensure customers have confidence in the retailer's safety protocols. In addition, it helped protect the retailer's operating margins at a time when it was more important than ever, demonstrating that Vision Works has the flexibility to quickly adapt to ever-changing retail environments—as well as to new challenges like the COVID-19 pandemic.



## Serving retailers and consumers with in-store AI

Whatever the future brings, Sensormatic Solutions has the edge AI platform to quickly address the issue, maximize retailer efficiency, and enhance the shopper experience. Counting people and monitoring social distancing is just the beginning. With Sensormatic Solutions' patent-pending computer vision models, combined with Intel® technology, businesses can take advantage of applications that support shopper engagement, shelf replenishment, quick-service restaurants, and exterior curbside wait time.

Sensormatic Solutions offers solutions that are ready to deploy today even as they continually add new use cases as the industry continues to evolve. By bringing AI inside stores, Sensormatic Solutions is helping ensure that retailers can access the advanced solutions they need to connect shoppers, associates, merchandise, and data in new and differentiating ways.

### Learn more

Learn more about Sensormatic Solutions' collaboration with Intel at [sensormatic.com/resources/pr/2021/intel-partnership](https://sensormatic.com/resources/pr/2021/intel-partnership).

Find additional details about Sensormatic IQ and Vision Works at [sensormatic.com](https://sensormatic.com).

Explore Intel® AI technology at [intel.com/ai](https://intel.com/ai).

Learn more about Intel® retail technology at [intel.com/retail](https://intel.com/retail).

### About Sensormatic Solutions

Sensormatic Solutions is the leading global retail solutions portfolio of Johnson Controls, powering operational excellence at scale and enabling smart and connected shopper engagement. Our intelligent digital operating platform—Sensormatic IQ—combines the full Sensormatic Solutions portfolio. This includes unmatched insights into retail inventory, shopper behavior, and loss prevention and liability, as well as retailer and third-party solutions with advanced technologies like AI and machine learning. Retailers can use the platform to act on prescriptive, data-driven outcomes and confidently move into the future. Our retail portfolio features the premier Sensormatic, ShopperTrak, and TrueVUE brands. Please visit [Sensormatic Solutions](https://sensormatic.com), and follow us on [LinkedIn](#), [Twitter](#), and our [YouTube channel](#).

### Intel Distribution of OpenVINO toolkit

This toolkit gives developers easy-to-access libraries, frameworks, and pretrained AI models to speed up AI vision deployments for faster time to market. Based on convolutional neural networks (CNN), the toolkit optimizes inference across multiple types of Intel® processors.

[Learn more >](#)

### Intel® DevCloud for the Edge

Intel DevCloud for the Edge allows for prototyping and experimenting with AI workloads for computer vision on Intel hardware, gives access to hardware platforms hosted in Intel's cloud environment, provides tools for deep learning, and minimizes lead time between developers in different countries working together.

[Learn more >](#)



1. Source: Sensormatic internal data, [sensormatic.com/who-we-are/genuine](https://sensormatic.com/who-we-are/genuine)

#### Notices and disclaimers

Intel is committed to respecting human rights and avoiding complicity in human rights abuses. See Intel's [Global Human Rights Principles](#). Intel® products and software are intended only to be used in applications that do not cause or contribute to a violation of an internationally recognized human right.

Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy.

Intel® technologies may require enabled hardware, software, or service activation.

No product or component can be absolutely secure.

Your costs and results may vary.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.