



Creating new shopping experiences through data analysis and AI-based camera systems

Digital transformation is accelerating in the retail industry, with the Online Merges with Offline (OMO) trend blurring the distinction between e-commerce sites and real stores, and helping to reduce staffing levels in digital-based smart stores. The impact of COVID-19 has further accelerated these digital transformation initiatives. Fujitsu has a range of solutions, including the use of AI-based video analysis, that can improve the shopping experience in this new normal. Following a proof-of-concept project at AEON RETAIL stores, AEON RETAIL and Fujitsu are now working on the full-scale deployment of these solutions across Japan.

About the customer

AEON RETAIL, headquartered in Makuhari, Chiba Prefecture in Japan, plays a central role in the general merchandise store (GMS) business of the AEON Group, a major distributor and retailer. It is one of the largest retail operators in Japan with approximately 400 stores, including AEON and AEON STYLE, and annual sales of over two trillion yen. It has attracted a great deal of attention from inside and outside the industry for its pioneering initiatives in digital transformation, including the development and introduction of its REGIGO shopping app.



Challenge

AEON RETAIL is facing a challenging business environment, from intensifying competition and labor shortages through to the operational difficulties created by COVID-19. They need to reduce labor costs and optimize their store operations by exploiting digital technologies. As part of its smart store initiative, AEON RETAIL has introduced an AI-based solution for analyzing video data from its in-store cameras.

Solutions

- Analyze video data from cameras to monitor in-store congestion and avoid ‘the three Cs’ (closed spaces, crowded places and close-contact settings).
- Estimate the age of customers from video data, for example to prevent under-age purchasing of alcoholic beverages.
- Identify customers who want to purchase and need assistance, notifying store staff to improve sales efficiency and customer satisfaction.
- Analyze data, including customer attributes and behavior, to support the planning of optimal layouts and product lineups.

Outcomes

- Based on a proof-of-concept solution, the system is now being deployed to 76 AEON and AEON STYLE stores across Japan.
- By integrating with pedestrian-flow simulation technology, services will be further enhanced to realize improved shopping experiences in the new normal era.
- AI-based store operations have created an environment where store staff can improve their customer service.

AEON RETAIL smart stores, leading digital transformation (DX) in the retail industry

“AEON RETAIL is driving digital transformation (DX) from three perspectives: touch point – or customer contact - reform to improve customers’ shopping experience, work style reform to increase store staff productivity and a reform of its conventional cost structure,” said Minoru Yamamoto, Executive Officer and General Manager of System Planning Division, AEON RETAIL.

Many projects have already been implemented, including live commerce, OMO and the development of proprietary apps. In October 2020, a proof of concept started at AEON STYLE Ariake Garden in Koto-ku, Tokyo, supporting their smart store initiative.

This solution featured an AI camera system, in which AEON RETAIL adopted Fujitsu’s AI video analysis solution GREENAGES Citywide Surveillance as the core technology. Yamamoto adds, “Having worked together with Fujitsu on several projects in the past, we highly appreciate Fujitsu’s technical and proposal capabilities, as well as its commitment to understanding our issues, needs and visions through in-depth discussions.”

Achieving safe and secure store operation and improving customer service quality

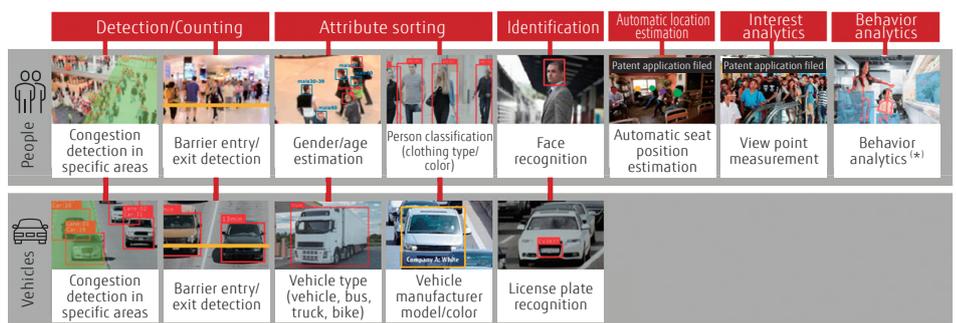
The AI camera system supports store managers and employees across a range of work and decision-making activities by analyzing and learning data, such as the number of customers who visited the store, their attributes and behavior, through images obtained from in-store cameras.

For example, during the COVID-19 pandemic, to avoid ‘the three Cs’ (closed spaces, crowded places, and close-contact settings) on sales floors, the system identifies the number of people in the store, enabling timely action such as supporting tills and restricting store entry. The system also helps prevent under-age people from purchasing alcoholic beverages by estimating their age from video data.

In addition, by making full use of human behavior detection technology, the system detects customers who may need help in choosing products, notifying store staff to provide timely customer service, which improves both staff efficiency and customer satisfaction.

In the future, the system is expected to support the planning of optimal product lineups and store layouts based on objective data by analyzing and learning the number and attributes of customers visiting the store and their in-store behavior patterns.

Fig.) Functionality of GREENAGES Citywide Surveillance, Fujitsu’s AI video analysis solution



(*) “Behavior analytics” is a commercialized product using Fujitsu Laboratories’ AI technology “Behavioral analysis technology Actlyzer.”



“Our mission is to provide our customers with pleasant, safe and secure shopping experiences in the new normal. We’re working with Fujitsu to create new shopping models.”

Minoru Yamamoto, Executive Officer and General Manager of System Planning Division
AEON RETAIL

Creating stores in the new normal era, leveraging Fujitsu’s strength in data analysis

Commenting on the early results, Yamamoto comments, “Firstly, we appreciate that the system has been developed at a low cost by using existing IP cameras. Thanks to highly accurate AI analysis, our employees can now serve customers more easily, for example because the system can accurately recognize the gender and age of customers even when they are wearing masks.”

In addition, there are potential benefits for store management support through data analysis. “In the past, we tended to rely on empirical rules for customer service, product lineups, store layout and the like. However, COVID-19 requires new normal practices for store operation, so analysis and judgment based on objective data is becoming important. We would like to provide greater value to all of our customers, employees and operators by leveraging Fujitsu’s strengths in data science,” said Yamamoto.

The system has met expectations, enabling the retailer to access a wide range of information, including differences in purchasing trends between weekdays and holidays, and by time of day. This effective access to this insight has encouraged AEON RETAIL to adopt the system, with plans to expand it to 76 stores across Japan by the end of FY 2021.

Using the experience obtained from this proof of concept, Fujitsu is now enhancing the performance of the AI video analysis solution, aiming to further improve store-management by integrating the AI video analysis solution with other technologies such as pedestrian-flow simulation. Fujitsu is committed to contributing to realizing a pleasant, safe and secure shopping experience in the new normal that retailers like AEON RETAIL are facing.