Intel® Intelligent Vending Proof of Concept with Large Display Screen

New Era of Digital Signage Opens up Possibilities for Vending Machines

Japan is home to a very large number of vending machines, and they have undergone any number of changes over the years, such as the adoption of non-contact IC card technology. A new feature that will provide further enhancements to these devices is digital signage. Digital signage is a next-generation advertising medium that uses large-screen and other displays to present targeted information to people in its field of view.

For digital signage to catch the eye of a large number of viewers, it needs to be located somewhere where it will attract the most attention. However, installing a large signage unit at a new site is not easy. Vending machines, on the other hand, are already located at sites with high foot traffic and incorporating digital signage takes maximum advantage of both functions.

Vending machines with a digital signage function can be expected to both increase income and contribute to public services. Firstly, displaying advertisements for the products available from the vending machine should increase sales. Secondly, making use of the large screen to display other various advertisements while the machine is idle provides a new source of advertising revenue. Incorporating digital signage into vending machines opens up new many possibilities for these devices.

Successful Multi-Dimensional Integration of Vending Machines and Digital Signage Achieved
Through Fuji Electric Retail Systems, V-Sync, and Intel®

This new concept model is a multi-dimensional integration of a vending machine and digital signage that effectively uses the very latest designs from Fuji Electric Retail Systems Co., Ltd. with a high-performance platform based on Intel® Architecture and the next-generation digital signage solution from V-Sync Co., Ltd. The system works by using a large LCD touch-screen mounted on the front panel of the vending machine to display a menu of the available products along with advertising and other content.

The ability of the large LCD screen to display advertisements using high-quality HD video or Flash-powered rich media makes it a powerful draw on the attention of passers by. Also, a built-in camera is equipped with applications for identifying the distance someone is from the front of the machine, as well as such things as their gender and age. This puts advertisements or other information about the products in the customer's direct line of sight. Additionally, information about the people who view the advertisements or purchase products (date and time, gender, age, item purchased) can be transmitted back to a control center. Resulting statistics are then used to help plan future product sales and advertising strategies.

Making Vending Machines More Convenient and Achieving Greater Promotional Benefits Groundbreaking "Scale-Sell" and "Match-Sell" Content Display Functions

The "scale-sell" function uses the built-in camera in Intel® Digital Vending to determine the distance to the person standing in front and displays appropriate content based on this distance. The "match-sell" function identifies the gender, age, and other characteristics of the person standing near the machine and displays content to match.

The "scale-sell" and "match-sell" functions use sophisticated

algorithms to analyze high-resolution images captured by the built-in camera and quickly identify how far away the person is standing as well as their gender, age bracket, and other characteristics. Although this analysis involves complex processing, the high-performance Intel® Processors used in the concept model (Intel® Core™ i7 Processor or Intel® Core™ i5 Processor) can recognize people in large crowds of up to 100 and perform high-speed recognition by processing five or more frames per second.
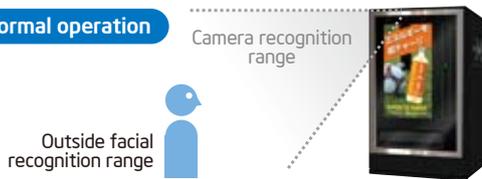
Operation of Intel® Intelligent Vending Proof of Concept

Scale-sell
Detects the distance to the viewer and selects the display content accordingly.

Normal operation

Camera recognition range

Outside facial recognition range

Eye-catch mode
During normal operation, the screen displays material to attract the attention of passers by including advertising aimed at stimulating purchasing intentions.

Camera recognition/close range

Camera recognition range

Close range

Vending mode
The screen changes to vending mode when a customer approaches.

Match-sell
Detects the gender and age bracket of the customer and switches to the optimum display mode.

Identify attributes

Woman, 20-30 years

Child

Customer's line of sight

The camera in Intel Digital Vending determines the gender and age bracket of the customer and automatically recommends products that match the target. Where items are displayed is also adjusted based on the customer's height.

Reliable Centralized Management of Intel® Digital Vending Signage Function from a Control Center is Achieved Using Intel® Active Management Technology

Multiple machines installed at locations around the country can be managed from one central location by using WiMAX*, 3G or other data communications technology to connect them to the Internet. This centralized management covers a variety of different areas including operation of the digital signage function and collecting audience data on those who view the advertising or purchase products.

The concept model also uses Intel® Active Management Technology (Intel® AMT) to ensure that these various operations performed from the control center work reliably. Intel® AMT is an advanced technology for operation and management that can perform operations such as power management, operating the console, and

accessing the HDD independently of the state of the operating system (OS).

Minimizing the need to send repair teams out to the vending machines by diagnosing issues remotely, reduces operational and maintenance costs. This can be expected to increase the utilization of the vending machine.

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