Increasing Self-Checkout Throughput and Price Accuracy

Intel® Intelligent Grocery Concept incorporates mobile connectivity, video analytics and biometrics technologies

Self-checkout is a win-win for customers and retailers looking for an alternative to long queues in stores. Further boosting customer throughput, next generation self service POS systems are integrating new technologies that save time at the register and prevent lost sales due to theft, sweet heart deals and scanning or data errors. Helping to speed up the checkout process, the combination of powerful Intel® multi-core processors and mobile device connectivity, video analytics and biometric technology is addressing the following:

Losing Time in the Checkout Line

- Handling loyalty cards and traditional paper coupons and receipts
- Registering prices when bar codes are missing, unreadable or compromised
- Authorizing sales clerks to perform special functions (e.g., price overrides)

Conducting Transactions with Mobile Phones

For many shoppers, their mobile phones seem to be as essential as drinking water. Retailers can take advantage of these ubiquitous devices to simplify and speed up several aspects of the checkout process. Instead of customers searching for loyalty and credit cards and then swiping them, mobile phones perform these operations in one step – wirelessly. Likewise, paper coupons and receipts will be replaced with electronic versions that customers download to their phones, which saves the time spent on handling coupons and printing receipts. In the case of coupons, customers can send their grocery lists to their phones, which find suitable electronic coupons on the internet and are then passed wirelessly to the POS device for processing.

Identifying Products with Video Analytics

Intel's Self-Checkout Concept introduced at the National Retail Federation Convention (NRF) in January 2010.

Customers hit a speed bump when the self-checkout scanner can't read a bar code, or worse, there is no barcode present, like on a piece of fruit. Using high performance Intel® processors running video analytics from RTS Flexible Systems*, POS systems equipped with a camera can capture an image of the scanning area, identify the product and look up its price. Instead of customers asking the clerk for assistance or searching charts for a product code, they can verify that the item the POS displays in a product description is correct.

During checkout, if the barcode and video analytics come up with different products or pricing, a clerk can sort out the discrepancy, which ensures accurate pricing. In addition, video analytics will spot when an item wasn't scanned, which prevents inadvertent customer errors or theft. It can also detect when people are piggy-backing products or deliberately replacing the barcodes of expensive items with those from cheaper ones. Software provided by NCR Corporation* enables this feature, including the modifications required to accommodate the video analytics feed from RTS Flexible Systems.

Authorizing Clerks using Biometrics

Customers feel inconvenienced when they see the dreaded message, "Please wait for assistance". The clerk that arrives feels the pressure to quickly enter a password and then perform special functions, like a price override or remove an item. The Intel® Intelligent Retail Proof of Concept implements a fingerprint reader and biometrics to immediately identify the employee. Not only does this save time, but it avoids problems caused by employees forgetting their passwords or using someone else's.

Keeping Machines Online

An integral part of the Intel proof-of-concept is Intel® Active Management Technology (Intel® AMT)[1], which helps increase system uptime and save on costly technical service calls. This technology is built into select Intel processors and chipsets and provides mechanisms enabling IT personnel to quickly fix many types of system problems remotely, thus improving system availability and the end-customer experience. In addition, Intel AMT allows the IT operators to manage systems even when they are turned-off or when the operating system (OS) is unresponsive.

Self-checkout systems based on this Intel® proof of concept can help retailers increase customer throughput, reduce shrink and fraud, and improve POS availability through the advanced technologies described in Table 1.

Intel® Proof of Concept Features	Benefits for the Vending Industry
Mobile Device Connectivity	Eliminates handling of paper coupons and receipts
Video Analytics	Identifies products without using a bar code
Biometrics	Authorizes clerks using fingerprints, which is faster and more secure than passwords
Remote Management	Avoids expensive on-site POS repairs with Intel® Active Management Technology

Table 1. Intel® Proof of Concept Features and Benefits

For more information go to www.intel.com/go/ic

[1] Intel® Active Management Technology (Intel® AMT) requires the computer system to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt/.

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