CASE STUDY
Intel® Core™ i5 Processors
YCD Multimedia* Digital Signage Solution
Retail Industry

Coca Cola* Overcomes Digital Signage Hurdles with Intel® AMT over Wireless

Retailers appreciate greater placement flexibility and lower installation and support costs

Figure 1. Coca Cola* Wireless Digital Signage in a Convenience Store

Unlike typical office buildings, most retail environments aren't wired for universal network access. Therefore, existing LAN connections usually dictate where retailers can place intelligent systems such as point of sale (POS), kiosks, security cameras and digital signage. When a system move requires dropping a new LAN line, there are two common hurdles: an onerous approval process (IT and Facilities) and high installation costs.

Looking to overcome these challenges, Coca Cola* sought a digital signage solution that would provide placement flexibility, minimize deployment effort and lower support cost. The company wanted to play advertisements near their product displays, which changes a few times a month. Whether placed in a small convenience store or a large supermarket, they have found digital signage to be a very effective promotional tool for these targets. The solution also had to be scalable in order to support a large signage rollout in stores of all sizes and with different IT infrastructure. For that reason, Coca Cola turned to YCD Multimedia* for a wireless digital signage solution based on embedded Intel® Core™ i5 processors.

Walk into a typical store in Israel and you may find a display of Coca Cola products beneath digital signage playing a relevant clip promoting the special of the week, as pictured in Figure 1. What's unique is the wireless-enabled digital signage can be located anywhere around the store, without concern about physical LAN connections. In addition, the systems are managed and fixed remotely using Intel® Active Management Technology (Intel® AMT)[1], which can minimize costly onsite repair visits.

"When retailers see the ease of deploying and supporting this digital signage solution, its "green" capabilities that save electricity and avoid printed materials, its flexibility, and the opportunity to bring sales uplift - they become much more open to experience the new, innovative solution and to put our displays in their stores."

Moshe Biton
V.P. Retail Marketing
Coca Cola, Israel.*

CHALLENGES

- **Complex approval process:** A new wired LAN connection for digital signage may require approval by the facilities manager, IT department and other groups.
- **Overall cost:** Large pocket expenses, including deployment, energy and management, will deter retailers.
- **Few placement options:** Wired networks constrain where systems can be placed in the store.

SOLUTIONS

- **Wireless networks:** No major infrastructure changes are required, which reduces the number of required approvers.
- **Advanced remote management:** Systems can automatically shutdown during off hours, saving energy; and they can be serviced remotely, reducing support costs.
- **Wireless connectivity:** Systems can be deployed anywhere within signal range, thereby increasing placement flexibility.

Retail Embraces Wi-Fi

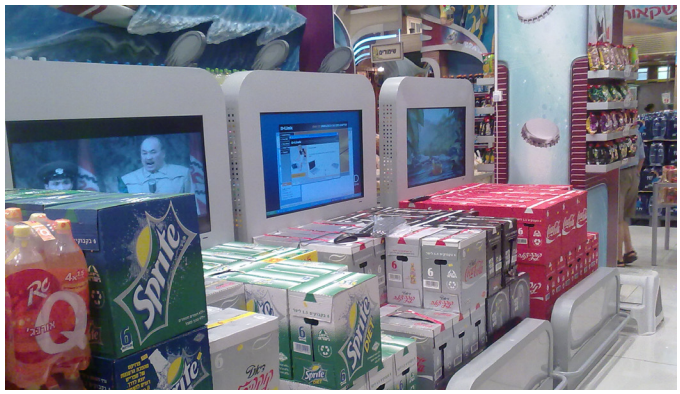
As early adopters of Wi-Fi technology, many retailers offer Internet access via wireless hotspots, which provide their customers with an enhanced level of service. For instance, shoppers at Sam's Club, the eighth largest retailer in the U.S., can use their Wi-Fi enabled smart phones to search for product information. The in-store wireless network also allows sales associates to demo new IPTVs (Internet Protocol Televisions), as well as other internet connected devices in real time.[2]

"Our research shows that while revenue may not always be directly gleaned from the hotspot offering, free Wi-Fi has a significant value in bringing customers to a venue," says Amy Cravens, In-Stat Analyst. "It's no wonder then that over 150 thousand café/retail venues have now deployed Wi-Fi hotspots, although not all of these are free."[3]

Extending Wireless to Digital Signage

With Wi-Fi networks and Internet access already in many stores, Coca Cola sees an opportunity to provide retailers a wireless digital signage solution capable of grabbing the attention of customers while they stand in front of their products. For stores without Internet access via ADSL or a cable service, another option is to connect to a 3G/WiFi router and use one of the widely available cellular networks. Delivering significant economic and ease of installation benefits, wireless is a game changer.

Coca Cola decided on a digital signage solution with wireless connectivity from YCD Multimedia, a supplier of end-to-end digital media solutions. Minimizing cabling and change costs, wireless technology dramatically eases the installation of digital signage throughout a store – all that's needed is an electrical outlet. With a wireless network connection, the digital signage system can download new content and playlists, get remote



support from IT, upload information (e.g., anonymous video analytics) to headquarters, and interact with customers, among other possibilities.

The YCD|Player* is a media player capable of controlling up to 12 displays and supporting wireless Internet access via Wi-Fi and 3G cellular networks, as depicted on the right side of Figure 2. If a store already has Internet service via a Wi-Fi or 3G router, no additional hardware is required. Communications between the media player and the management console are secured by a gateway or proxy server typically employing authentication and encryption technologies.

> "In the future, most retail devices will be wireless, reducing infrastructure and increasing flexibility, as in a POS terminal or digital signage interacting with shoppers via a smart phone."
>
> *Dani Zeevi*
> *Chief Technology Officer and Co-Founder*
> *YCD Multimedia**

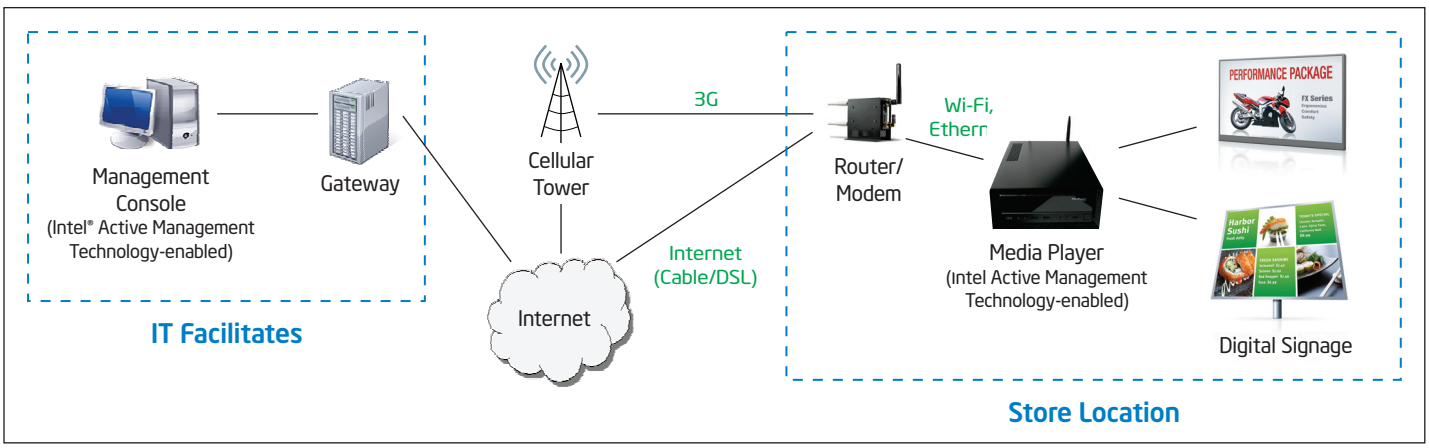


Figure 2. Wireless Connectivity Example

Lowering Support Costs

With an escalation of networked devices, retail IT departments are turning to remote management to help them contain rising support costs. Remote management facilitates the repair of system problems over the network, a cost-effective alternative to an onsite repair visit.

Advancing the capabilities of remote management solutions, Intel AMT establishes an out-of-band (OOB) link that enables IT professionals to query, fix and secure devices, even when they're powered off, software issues or the operating system (OS) is corrupted (Table 1). This is a unique capability since other remote system management solutions usually require several equipment components, like the OS and IP software stack, to be working properly. On the other hand, system management systems based on Intel AMT only require the equipment to be plugged into a power outlet and have network access.

When issues can be resolved remotely, the time to problem resolution is reduced, which translates into increased uptime. Moreover, Intel AMT also enables retailers to save power by shutting down systems – in a structured, simple way – during off hours using the remote on/off switching option.

A unique capability of Intel AMT is the client (e.g., digital media player) can initiate a connection with the IT management, such as a "Fast Call For Help", even if the system is down. This feature, called Establish Secure Connection, is particularly valuable since clients could be a non-domain machine anywhere in the cloud, or hidden behind a firewall – conditions that may prevent IT from initiating communications. In practice, the client can send heart beat messages to the IT consoles in order to communicate on a regular basis.

YCD incorporated Intel AMT into their YCD|Platform*, a remote management and distribution platform that enables IT departments to program, schedule and distribute audio and video content in retail settings easily, quickly and accurately. With Intel AMT, the console is able to implement a real-time hardware watchdog that works even if the operating system hangs; thus, it is capable of alerting when a catastrophic failure occurs. Intel AMT also enables the YCD|Platform to display full system information, including BIOS version, of machines on the digital signage network.

Intel AMT has a feature called KVM redirection over Internet Protocol (IP), permitting the keyboard-video-mouse (KVM) for an IT console to control and display the graphical user interface (GUI) of a system in the field. No additional hardware is required. "With the KVM support, the technicians control the system as if they're sitting right in front of it," say Dani Zeevi, CTO of YCD Multimedia. Full KVM capability is available even when the operating system is down.

The YCD|Platform is an advanced, web-based media management and distribution system. Its unique open architecture and scalable design provides exceptional control and flexibility to grow as business increases. YCD|Platform has a wide range of functionality, including:

- ***Manage*** content and create playlists with customized messaging that meets specific business goals and objectives.
- ***Schedule*** brand messaging and advertising based on the time of day or region; or select zones within a specific location to create the optimal customer experience.
- ***Distribute*** data and media securely without having to modify the existing infrastructure.
- ***Control*** the interaction of media elements across the entire organization, including third party advertising, informational messages and special promotions.

Capabilities	Results
Reduce Power Consumption	Save power by powering down systems during off hours using the remote on/off switching option.
Run Inventory Reports	Remotely read system configuration data from non-volatile memory, even if the system is switched off.
Fix Hung Systems	Restore systems by cycling power, reloading software or booting from a 'gold' hard drive on the network.

Table 1. Intel® Active Management Technology Capabilities and Results

"The YCD|Platform*, combined with Intel® Active Management Technology, allows retailers to lower the energy consumption and support costs of digital signage systems."

Jose Avalos
Director of Retail and Digital Signage
Intel

Going Wireless with Digital Signage

Anyone who relies on digital devices appreciates the convenience and flexibility provided by wireless technology. For digital signage in the retail space, the benefits can be more far reaching:

Easy installation process: When a new wired LAN connection is needed, cables and connectors have to be approved, ordered and installed. If the space is leased, it may be necessary to get permission from the landlord to drill holes into walls, and IT departments have to set up the connection. This process can take several weeks, whereas getting a wireless digital signage set up may take just a couple hours.

Reduced costs: Without the need to drop a line, a wireless network can save several hundred dollars (USD) over a wired network. Using Intel AMT, retailers can lower their energy and support costs.

Systems where they're needed: Digital signage needs to be seen to be effective, and in retail, playing high-impact content near a product will increase sales. Without the burden of a network cable, wireless digital signage can be located where it will have the greatest impact.

More attractive: No unsightly cables hanging from the ceiling.

Location, Location, Location

Wireless has created a whole new dynamic that is bringing customers closer to retailers and their messaging. A logical progression is wireless digital signage, which allows display screens to be located and even relocated as needed – to best reach out to customers. In addition to greater flexibility, the technology reduces installation cost and effort, making it only a matter of time before wireless is a check off item for digital signage systems.

To learn more about YCD Multimedia retail solutions, visit **www.ycdmultimedia.com**

For more information about Intel in digital signage, visit **www.intel.com/go/digitalsignage**

[1]*Intel® Active Management Technology (Intel® AMT) requires the platform to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. With regards 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 http://www.intel.com/p/en_US/embedded/hwsw/technology/amt.*

[2]*http://www3.samsclub.com/NewsRoom/Press/765*

[3]*http://in-stat.com/press.asp?ID=2885&sku=IN1004769WS*

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