Solution Brief

Digital Signage

Intel® Core™ i7 Processors

Intel® vPro™ Technology
Intel® Active Management Technology (Intel® AMT)

See the Future of Digital Signage

The Intel® Intelligent Digital Signage Proof of Concept

More Interactive and Engaging

The static advertising billboard is giving way to a dynamic, multi-media experience that will provide more useful and interactive information to customers and advertisers. What's more, Intel engineers are demonstrating how 'anonymous' video analytics, gesturing, awesome graphics and downloads to handhelds will transform digital signage and capture the attention of shoppers.

Let's Go Shopping!

As you walk through a store, an intriguing two panel digital signage display catches your eye. The left panel is glass, through which you can see the store department as well as graphics and product images appearing to float in thin air. This is because there is a holographic film embedded in the glass that makes the graphics come alive. The right LCD panel plays a slideshow of high definition, graphic-rich advertisements. While you sort through the ads with a wave of your hand, your selections and dwell time provide valuable feedback to advertisers.

The display peaks your curiosity, and as you walk up, a camera on the top bezel uses anonymous video analytics to identify personal features and activates a user interface catering to your gender and height. Product content fills the screen, and you point to get more information, go to another floor or select from menu options for access to store navigation, member bonuses and personal assistants. Using gestures, you select tags pointing to products in the store beyond the glass, which allows retailers to showcase certain merchandise in the store and cross- and up-sell. There's a coupon for a product you want to buy, so you download it to your mobile phone and redeem it at checkout.

Intel® Intelligent Digital Signage Proof of Concept

Opening the door to new ways to increase profitability, engage customers and collect business intelligence, future digital signage systems will provide capabilities such as:

- **Rich Content:** Two touch-enabled 1080P displays simultaneously render video streaming across HDMI
- **Anonymous Video Analytics:** Facial-recognition software enables personalized interactivity by demographic group
- **Augmented Reality:** Looking through glass, customers see actual products along with related pop-up graphics
- **Multi-Touch and Multi-User:** Supports several customers pointing and gesturing at the same time.
- **Product Information and Wayfinding:** Customers easily search product and store directory information
- **Mobile Phone Integration:** Customers can download information and email to friends and family or save for later

Intel® Proof of Concept Goals	Benefits in Retail
Improve display effectiveness	Catches the attention of nearby customers
Increase marketing impact	Targets advertising by customer demographics
Enhance the customer experience	Engages customers and facilitates shopping
Satisfy individual customer needs	Delivers a unique experience to different customers simultaneously
Supply more product information	Helps customers make purchasing decisions and find products

Table 1. Intel® Intelligent Digital Signage Proof of Concept Features and Benefits

Powerful, Low Power and Easily Managed Design

The Intel Intelligent Digital Signage Proof of Concept demonstrates how technology can enhance the retail experience. The platform delivers the performance required for demanding video applications, such as running anonymous video analytics applications and displaying multiple video streams and rich graphics. It is based on Intel's energy efficient Intel® Core™ i7 processor running Windows Embedded Standard 2011 Operating System. This processor has an integrated graphics engine and remote management capabilities that can significantly reduce a retailer's total cost of ownership. Developers can create one board design and scale their product line with a variety of performance-per-watt processors using the same socket. Thermal design power (TDP) options range from 18W to 35W.

Captivating Multimedia Experience

Intel® Core™ i7 processors feature dual-core processing with industry-leading performance capabilities, power efficiency and integrated graphics, all on industry-standard x86 architecture. When paired with the Mobile Intel® QM57 Express chipset, this integrated two-chip platform provides excellent graphics, memory and I/O bandwidth.

- **Integrated Graphics Engine:** Delivers outstanding resolution and digital quality while reducing overall platform power requirements and footprint.
- **Two Threads per Core:** Processes multiple video streams simultaneously since each core has separate data paths for two tasks (four execution states total).
- **Integrated Memory Controller:** Handles vast amounts of high definition video data and saves board real estate.
- **Low Idle Power:** Significantly reduces power consumption when the processor is idle by automatically transitioning to low power states and turning off parts of the chip.

Lowering the Total Cost of Ownership

Providing a significant remote management breakthrough, Intel® vPro™ technology with Intel® Active Management Technology (Intel® AMT)1 enables IT to access and control a system even when it's powered off or the software is corrupted. Furthermore, IT can remotely fix a wide assortment of system defects, track inventory – including warranty and software license information – and reduce utility bills by powering down systems during off hours. This advanced remote management capability can reduce cost and save time by supporting digital signage systems without going on-site, as described in Table 2.

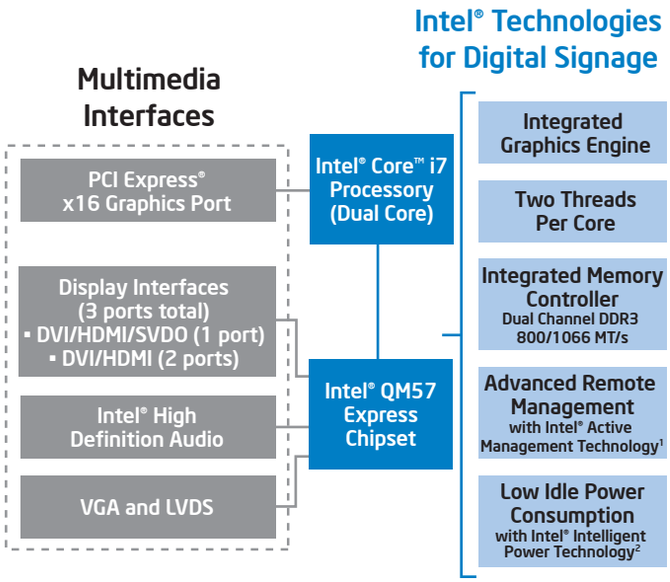

Figure 1. Computing Platform For Intelligent Digital Signage

Additional information about Intel in Digital Signage can be found at www.intel.com/go/digitalsignage

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

Table 2. Intel® Active Management Technology Capabilities and Results

[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. For more information, see www.intel.com/technology/platform-technology/intel-amt/index.htm.

[2]Intel® Intelligent Power Technology requires a computer system with an enabled Intel® processor, chipset, BIOS and for some features, an operating system enabled for it. Functionality or other benefits may vary depending on hardware implementation and may require a BIOS and/or operating system update. Please check with your system vendor for details.

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