



Real-Time, High-Definition 3D The Next Frontier in Digital Signage

Affordable solutions based on next generation Intel® Core™ processors makes the viewer experience more interactive and captivating.



Figure 1. Real-time Weather Forecast Overlays

Special 3D effects, like things popping out of the screen, are revolutionizing the movie industry and business signage displays as technology becomes more affordable and accessible. This technology is adding a new dimension to the concept of grabbing the attention of viewers. Imagine an exotic sports car that drives up as you approach the screen and allows you to explore inside with hand gestures.

Bringing new meaning to “interactive” and “captivating”, content is created and rendered in real-time - based on viewer movements or touchscreen inputs - on high definition (HD) screens.

With exacting image detail, multifaceted content integrates any 3D animation with live information, such as RSS feeds, video broadcasts and HD cameras, using technology from digital signage leader C-nario*. The value of real-time 3D is it enables the content to be always relevant, updated and the highest quality. Exciting interactivity takes place in real-time.

Rendering Real-time and Static 3D

Interactive 3D media requires the use of animation files (i.e., software instructions) that must be executed in real-time, whereas static 3D is pre-rendered and stored as a video file ready for playback. Through the use of animation files, a real-time 3D player can render animation that varies based on the viewer inputs, while blending video that it decodes at the same time. In comparison, a static 3D player just needs to decode video files.



Affordable Solution

Previously, only studios and large broadcast networks (e.g., sports broadcasters) were in a position to create a WOW experience with 3D graphics because the technology was prohibitively expensive for other businesses, such as retailers. Systems required external graphics cards and a lot of CPU processing power in order to render 3D animation in real-time. Today, next generation Intel® Core™ processors have on-chip graphics that execute these demanding workloads while reducing system cost, power consumption and foot print. "It's amazing that a small box can have such great performance," says Yael Elstein, vice president of marketing at C-nario Ltd.

Accessible Solution

Real-time 3D digital signage is a viable option for many businesses, thanks to technical innovation that has overcome two key hurdles: the need for cumbersome glasses and high infrastructure cost. Allowing people to view digital signage in 3D without glasses, advanced rendering

techniques widely used by video games enable all passersby to appreciate the unique images. Reducing the cost and power consumption of signage players, Intel processors with integrated graphics eliminate the need for expensive specialized graphics hardware. "There's great demand for economical, small, green units that consume less power," adds Elstein. Expected to enhance the 3D experience, auto-stereoscopic displays provide another glasses-free option for both real-time and static 3D content.

3D Rendering Challenges

Imagine a signage display at an airport that, along with playing advertisements, has an interactive globe in the corner that allows travelers to touch different cities and look up the weather (Figure 1). With this application running, advertisers get the attention of more people for longer periods of time, which increases recall rates and ultimately may generate higher sales. But blending an eye-catching 3D globe and advertisements is challenging in terms of graphics processing performance.

Compared to other types of content, real-time 3D is more compute intensive because it must be rendered "on the fly" instead of being pre-rendered. The use of auto-stereoscopic displays for real-time 3D further escalates graphics processing requirements since up to nine views must be rendered at the same time.

Rich Content with a Small Computer

Exemplifying state-of-the-art rendering, C-nario technology can integrate any 3D animation with real-time information from various live sources such as RSS feeds, video, Flash, live inputs and HD cameras. Running its 3D technology on a next generation Intel processor, C-nario was impressed with the results. "As for the Next Generation Intel® Core™ processor, it is the first time that a graphics engine integrated on a general-purpose CPU can produce real-time 3D. It demonstrates the great capabilities and improvement Intel made to graphics technology, which supports rich content without the need for add-in graphics cards," says Elstein. Now a small computer, benefiting from PC economics, is capable of delivering amazing digital signage 3D content.

More Interactive and Captivating

3D, the next frontier for digital signage, will allow advertisers to reach more eyeballs and hold an audience's attention for an extended period of time. Technological advances have eliminated the need for special glasses and expensive signage players, which will make 3D content a more viable option to businesses. The technology is raising the bar on high-quality, high-resolution content, thus providing a far more engaging experience to potential customers. The combination of advanced digital signage solutions from C-nario and new Intel processors with integrated high-performance graphics engines is adding a new dimension to advertising.

To learn more about digital signage software from C-nario, please visit www.C-nario.com

See digital signage solutions from Intel by visiting www.intel.com/go/digitalsignage

