



PERFORMANCE MEDIA INDUSTRIES, LTD.

Catch Me if You Can
7/2007

by A. Grimani

What You Can Do, I Can Do Better

In the beginning there was cinema. It was 35mm film – shot and projected in a 1.37 aspect ratio and accompanied by optical mono sound (after 1927). At the time, the powers-that-be in motion picture saw that it was good and profitable, and so they rested.

Then, before too many years had passed, along came an upstart called Television. TV boasted NTSC 480i video with a 1.33 aspect ratio and mono sound. Lo and behold, people could watch programming at home – just like at the cinema!

With popularity and profits declining, the motion picture powers-that-be had to react, and thus Cinerama was born. It was incredible in its day: three 35mm projectors combined to produce a 2.59 aspect ratio picture while a fourth 35mm film strip carried 7-channel magnetic sound. Other, more practical, 35mm and 70mm widescreen formats with up to 6-channel sound were not far behind. Ultimately, the most successful of these was 35mm with either a spherical 1.85 or an anamorphic 2.35 aspect ratio. The sound was matrixed Dolby Stereo 4-channel on the optical tracks, with a few 70mm prints receiving full Dolby Stereo 6-channel magnetic tracks. Poor little TV was left in the dust.

And so goes the game of leap frog between the cinema and home media that continues to this day. One develops a new technology or innovation that challenges the other's superiority, and the other responds with something simply more marvelous.

Home Media Strikes Back

During the 1980s and 90s, home media regained much of the ground it had lost to Cinerama and the other widescreen, multi-channel formats of the 50, 60s, and 70s. In many ways, you could argue that home media presentations surpassed the cinema in terms of quality, if not scope. MPEG-2 digital video in the form of HDTV broadcasts and upscaled DVD significantly narrowed the picture quality gap between video and film. On the audio side, Dolby Digital on HDTV and DVD could run at a higher bitrate (448 kbps) than the cinema (320 kbps), which produced a noticeable improvement in sound quality. Similarly, DTS decided to implement an entirely new and different

codec for home media that was superior to DTS in cinemas. Coherent Acoustics, as the home media codec was called, could run at bitrates as high as 1.5 Mbps on DVD. All things considered, the closing decade of last century looked pretty rosy for home media.

The Latest Advancements

However, things change. As we have become complacent fine-tuning our home theaters, the cinema has slowly-but-surely begun rolling out the next advancement in the technology leap-frog game: Digital Cinema. You may be tempted to relax and ignore Digital Cinema because of its relatively inauspicious start, but don't be too hasty in dismissing it. The current standard of 2K (2048x1080) digital projection using 12-bit JPEG 2000 at peak bitrates of 250 Mbps produces a picture that is every bit as good as HDTV and even surpasses 35mm film in certain respects. The audio is no less impressive: 24-bit, 48 kHz multi-channel PCM. It's difficult to even compare that to the lossy compressed audio that we experience at home, because PCM is pure and uncompressed. But the advancements don't stop there. Sony makes a 4K (4096x2160) Digital Cinema projector, and digital 3D is one of the hottest tickets around. Folks, I hate to say it, but most of the home media systems I see being installed are, once again, behind the times.

Meeting the Challenge

Fortunately, we have a way to combat the technological advancements in the cinema world. While HDTV and DVD lose out to Digital Cinema's superior sound and picture quality, Blu-ray Disc and HD DVD do support 1080-resolution pictures and uncompressed or lossless sound.

It's important to understand, though, that anything short of the new optical disc formats is giving up ground to Digital Cinema. Many of us will go see first-run movies in a Digital Cinema and want a similar experience at home. Chase Walton, who contributes to this column, reported to me recently that he and his friends were blown away by a screening of *Spider-Man 3* in a local cinema featuring a Dolby Digital Cinema system. Keep in mind that these people are used to watching movies in Chase's home theater, which represents the latest in design, technology, and calibration.

We can no longer rest on our laurels with HDTV and DVD in media rooms with plasmas and seven ceiling speakers. In order to achieve the grand cinematic experience of Digital Cinema, we are going to have to deal with the added complexity of Blu-ray, HD DVD, and home theater room design. Oh yes, I am fully aware that these things present unique challenges that don't fit into your well-oiled existence. But the fact remains that Digital Cinemas are now beginning to use the latest technology. They pay attention to visual design – a dark room with dark-colored surfaces, correct picture luminance, aspect ratio, sightlines, etc. They pay attention to aural design – an acoustically-treated and sound-isolated room with a sound system that is clear and loud and covers every seat in the house. Some of us will take the bull by the horns and build

home theaters that are every bit as advanced as Digital Cinema. Others will stick with the status quo. Which group will you be in?

This article is based on a column published by A. Grimani in Residential Systems magazine July 2007. Chase Walton contributed to this article.