

Digital Cinema: A Year of Growth

By Jeff Butkovsky

Since the publication of last year's progress report tremendous growth has occurred in digital cinema. This growth is reflected not only in the number of systems that have been installed, but also in the number of digital movies that were released.

In addition to the growing number of systems and releases, there have also been advances in satellite delivery, DCI-compliance, and alternative content. This article highlights some of those advancements and gives a report of where digital cinema is today.

Growth Year

In July 2005, AccessIT formed a strategic partnership with Christie Digital Systems called Christie/AIX (C/AIX). The purpose of C/AIX was to facilitate and finance the rollout of digital systems. By the end of January 2006, C/AIX had completed the installation of the first 150 screens of their 4,000-screen rollout. Since that time C/AIX has installed over 2,600 screens—by May 2007—at 247 sites in 30 states.

Enabling the rollout to take place at such a rate has been the commitment and support of exhibition and the studios. Both partners have been working together to make the transition to digital successful and smooth.

Underlying the exhibitor's commitment to digital cinema, many of the sites that have been installed are all digital sites. These theaters have removed all of their existing 35mm systems and replaced them with digital systems.

In order to ensure a smooth operation, there is a nationwide field service support group that is responsible for installation, training, and ongoing maintenance and support that is run by Christie Digital Systems. The support infrastructure includes not only field personnel, but also a sophisticated network that allows for remote monitoring, remote software upgrades, and troubleshooting, should an issue arise.

Number of systems alone does not make a successful rollout if they are not playing movies. Making this rollout a total success has been the studios' commitment to supply digital content to these screens. As of May 2007, there have been close to 2 million digital showings on the C/AIX deployed systems. The studios have been

releasing a steady stream of movies since April of 2006. In addition to the major studios, independent distributors, including the major studios' specialty divisions, have been releasing more of their movies in digital format.

With this supply of movies and the number of digital screens, it is not uncommon to see a complex playing only digital movies, with no 35mm. I had the opportunity to visit a site and was impressed as I walked through the projection booths as the digital shows were playing. No 35mm projectors were present, and the operation was running virtually unattended as the projectionist monitored the systems from the central library server.

Coordinating the booking and management of systems and content is the Trusted Device List (TDL) which is growing as the number of system installs increase. The TDL is the central repository of all of the digital systems deployed in the field and is instrumental in providing information used to generate Key Delivery Messages (KDMs).

Satellite Comes into Play

With the number of systems and movie releases growing, managing the delivery of content and KDMs, as well as systems, is becoming more challenging. One of the biggest advancements that has taken place over the past year is the advent of satellite delivery and monitoring via the satellite. Since AccessIT's entry into digital cinema, the company has been pioneering the use of satellite in digital cinema for both delivery and monitoring.

AccessIT's system consists of a multicast content delivery system that allows a movie to be sent to a collection of sites over the satellite in one transmission, where it is then stored on the library server. As part of this delivery service, the system performs several checks to make sure the movie can get there and that it has been received correctly. During the entire transmission, the status is monitored and any issues that may arise are handled immediately.

The system also consists of a Very Small Aperture Terminal (VSAT) system that provides transmit and receive capabilities over the satellite. The VSAT component is a point-to-point connection, as opposed

to the multicast connection used in the content delivery system. This point-to-point connection is useful when used for monitoring systems and delivering KDMs, because the transmission can target a specific site.

Since the summer of 2006, AccessIT has been delivering movies and KDMs via satellite to the deployed sites. On average, AccessIT delivers thousands of KDMs per week. Feature movies and trailers are delivered by AccessIT on a weekly basis, both by satellite and by hard drive, and the satellite system has been used successfully in emergency situations when a hard drive delivery could not be done in time.

DCI Compliance

Significant steps have been made toward DCI compliance. As SMPTE works on finalizing the specifications, the software that runs the systems is in its final development stages. Rollout of this software is expected to begin in the September 2007 timeframe. This will allow the systems to support the new packaging and enhanced KDMs.

Last year we saw the migration from MPEG-based players to JPEG 2000 players, which the C/AIX deployment featured from the start. This was a significant step for the industry, since it allowed for a single inventory of product to be released to the field.

Additional vital DCI-specified security features have been implemented, including Cinelink 2 and video forensic marking. In regard to video forensic watermarking, the systems support the Phillips forensic watermarking. This technology will aid in stopping camcorder piracy by putting a watermark on the recorded image that can then be read back, identifying the time and location of the recording.

The next addition to the security of the systems is the introduction of the FIPS 140-2 compliant media block, as referenced in the DCI specification. This media block will also contain audio watermarking technology that, like video watermarking, will allow for the tracing of sound files.

Alternative Content

One of the early promises of digital cinema was the ability to not only play, but also make it easy to acquire alternative content. In the past year there has been a rise in alternative content. AccessIT's Bigger Picture division has been paving the way with alternative content with their "channels" concept. This concept provides for a consistent supply of content that is

targeted to an audience. Be it G-rated, family-friendly content or cartoons for Saturday morning showings, faith-based programming, or anime, exhibitors can now setup programs to target and attract customers.

Digital cinema allows exhibitors to setup these "channels" or programs easily, since multiple movies can be stored on a media player, and have them play off of a schedule. With AccessIT's architecture, the Library Management System (LMS), which runs the Theatre Command Center (TCC) software is the central server that manages the entire complex and is used to setup the playlists (movies, pre-show advertisement, trailers and other content) and schedules for the media players. Once that is done, the LMS is used to copy content to the media players over the internal theater network. No more moving reels—with digital cinema there can be a variety of shows playing automatically throughout the day.

Another area of alternative content that is progressing is live events. Events such as concerts and sporting events are streamed into theaters as they happen. Work is under way, utilizing AccessIT's satellite infrastructure, to support live satellite events, as well as live 3-D events.

Conclusion

Looking ahead to 2008, I believe we will see continued domestic expansion as more deployment plans are developed and rolled out. In addition to domestic growth, international growth will start, as more systems are deployed in Asia, Europe, and Latin America.

All in all, the promise of digital cinema is becoming a reality, and benefits to exhibitors and the studios are being realized. This past year has been an overwhelming success and the future promises to be more successful as digital cinema continues to expand.