![SanDisk - a Western Digital brand]

Below-the-Line:

Optimizing Storage and Speed in the Film Industry

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Summary

Movie audiences and international markets are fickle enough, so movie studios are looking for new ways to stabilize and optimize traditional "below the line" variable costs, seeking new technologies for productivity. The media and entertainment industry produces, processes, distributes and preserves very large amounts of data along aggressive timelines, with a multitude of collaborators. Data transfer rates and processing speed are keys to successful deployments in this dynamic and rapidly changing market. Flash memory and solid-state-drive (SSD) provide a competitive advantage for storage and speed on the entire spectrum of film workflows.

Hollywood's Latest Horror Film: Big Data

Excluding distribution expense, the average production cost for major studio movie was about $65 million when the Motion Picture Association of America stopped tracking the number in 2006. Many films now cost in excess of $200 million to produce. Now add another $40 to $50 million for the advertising.[1]

Yet technologically, it's an industry that has seen limited innovation from the 1940s through the early 2000s. In the last decade, increasing sophistication of computer graphics and digital effects has revolutionized film production. Even when a director shoots on film the first capture is still scanned digitally at high resolution. In high-budget Hollywood productions

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[1] Nash Information Services

every single frame is digitized. Creatives do not like compression because they do not want to reduce the quality of the image. Ballooning digital storage requirements are increasing along with costs over the past decade. The scale of storage that movie studios are dealing with for the first time is unprecedented.

A film like The Social Network (2010), a dramatic story with essentially no special effects, consumed one petabyte of storage space. To put this in perspective, the amount of data generated annually by Europe's Large Hadron Collider (LHC) research experiments in Europe is 14 petabytes. The technology solution: Director David Fincher's cameras captured video at ultra-high resolution and saved the data straight to flash and hard disk.[2]

Accelerating the Pace of Production

Across the spectrum of editorial, post-production, mixing and distribution workflows, solid state technology is addressing the unique challenges involved in filmmaking:

On-set digital imaging requires the fastest possible turn-around of raw assets from all kinds of cameras: converting, transcoding and encoding a myriad of file formats to distribute to production and post-production staff. Encoding and transcoding occur faster with SSD solutions.

Playback is an essential part of every production pipeline, and is usually done on an editing station or custom, specialized system. Because playback requires storing significant amounts of data, these systems usually include a large local RAID array, upon which content must be arranged sequentially to improve playback speeds. With high-powered playback and compositing system, playback can begin while data is loading, eliminating prep time before review sessions.

With video editing, editors with large capacity requirements can deploy solid state technology solutions and get rid of large external disk drive arrays that are costly, noisy, generate lots of heat, and are subject to stability issues and failures.

Below the Line Advantages for Independent Filmmakers and Studios

Converting raw footage to Blue Ray used to take 90 minutes; now it takes less than a minute. Digital conversion and storage technology allows indie and documentary filmmakers and small houses to compete with large studios. This innovation changes fundamentally what a small studio can do, and how quickly they can do it.

Yet this advance in technology also makes the larger studios more agile against their bloated budgets, and helps them with "below the line" variable costs, and meet the aggressive workflow requirements tied to scarce production resources and fixed marketing timelines across international markets.

The industry now relies on high-performance, high throughput, and high capacity flash memory product that is specifically tuned to accelerate the applications that compositors, editors, painters, and content creators use.

Conclusion

Film budgets grew exponentially in the last half of the 20th century, but the technology did not keep pace. With the digital revolution in film over the last decade, the industry has adopted new technology solutions to address the deluge of data represented by each film project, including flash memory and solid state solutions. Small studios have the capacity to produce "big budget" films and large studios can react quickly to control below-the-line variable costs.

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[2] "Hollywood's Big Data Problem" DataCenterDynamics

Our Story

Here at SanDisk, we transitioned to SSDs in order to enable our global workforce of more than 4,000 technology professionals.

SanDisk, like many other high tech companies, has a workforce that travels the globe and need reliable machines that can withstand the bumps and grinds.

Workers, traveling from meeting to meeting not only on campus but also at client locations, need machines they can depend on. Many employees take their work home with them, carrying critical and sensitive data and files that they can't risk losing through hard drive failure.

Here are the results:

- Annual cost reduction and deferred savings of up to $610 per laptop
- Users gained an average of 15 minutes of productive time per day
- Reduced hardware-related help desk tickets by 5%
- Increased the average life of a laptop by 33%

Learn more about SSD solutions at http://www.sandisk.com/star

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SanDisk®

The world of digital content grows exponentially every day and SanDisk® is designing flash storage solutions so that your valued data is readily available and reliable, even in the most challenging environments. SanDisk solid state drives offer energy-efficient, compact and durable alternatives to traditional hard disk drives for desktops, laptops and ultra-thin PCs.