

Sony Pictures Imageworks

By Claudia Kienzie



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Bringing Narnia's fantasy world to life.

The Chronicles of Narnia: The Lion, the Witch, and the Wardrobe was challenging by virtue of the complexity of its visual effects and the short timeframe in which hundreds of shots had to be completed. A holiday 2005 blockbuster produced by Walt Disney Pictures in association with Walden Media, *The Chronicles of Narnia* brings viewers into the incredible world of fantasy and adventure created by C.S. Lewis.

With more than 1,400 visual effects shots, the workload associated with *The Chronicles of Narnia* was divided up between three major visual effects companies: Sony Pictures Imageworks (SPI), ILM, and Rhythm and Hues. Over 600 of the shots were created at SPI, which engaged the talents of its 3D animators and visual effects compositors, who used an arsenal of Autodesk® technology.

Incredible 3D Animation

SPI's film workflow used Autodesk® Maya® 3D animation software seats where many of the movie's 3D talking animals—including wolves, beavers, and a fox—were created. After the basic polygonal characters were developed, these 3D Nurbs "puppets" were moved to the Rigging department where they were refined.

"All of SPI's animation work for *Narnia* was done in Maya, with 3D characters moving back and forth between our design and Rigging departments. We took great care to design characters that would be extremely believable whether they were CG wolves interacting alongside live-action wolves or fantastic, mythical creatures, such as Mr. Tumnus, a fawn, who is essentially a man with goat legs," says David Schaub, SPI's animation director. "Maya offers us all the tools we need to perfect the appearance and movements of our characters down to the smallest detail."

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The Rigging department builds the skeleton and musculature into the character and applies the deformers that need to mimic muscles and tendons moving under the skin. “Because of the system’s open architecture and software development kit, our riggers could take Maya further by writing their own muscle-based facial animation control system,” says Schaub. “For *Narnia*, the ability to develop custom tools and deformers greatly extended the reach of Maya to cover all our animation needs.”

Lightning Fast Rendering

SPI also employed six seats of Autodesk’s Discreet® Flame® system, considered the state-of-the-art system for movie effects work, all running on SGI workstations. Facilitating a highly efficient film workflow, all of the Flame boxes could off-load even the most complex visual effects composites onto the Autodesk® Burn™ background processing software.

“The increased speed Burn provides for rendering allows us to quickly implement client feedback and provide a result in many cases while they are present,” says Jason Anderson, SPI’s interactive compositing production manager. “During *Narnia*, there were countless occasions where Burn streamlined our workflow and assisted us in meeting deadlines with its efficiency and rendering speed.”

Breakthrough Visual Effects

The Flame team—which included artists Lisa Deaner, Dave Takayama, Todd Meshner, Rob Blue, Doug Forrest, and CG Supervisor Dave Smith—completed complex visual effects shots which harnessed many of the powerful Flame tools, including Action, 2D and 3D tracking, 3D and modular keying, color warping and color correction, painting, de grain and re grain, rig removal, camera tracking, multilayered green screen compositing, and more.

For an effects shot involving footage captured from a helicopter flying over a forest, Takayama had to remove a lake and mountains from the background while preserving the tree line of the forest in the foreground. He dropped into the background a matte painting that featured an ice castle sitting on a lake; animated the water to create waves; and added glints, glows, and lens flares on the castle to give the fabricated scene a more photorealistic finish.

“The Flame desktop environment makes organizing shot elements very intuitive. You can see most of everything right there in front of you without searching through file directories and then previewing individual frames,” says Blue. “Also, effects shots are almost never ‘locked off’ anymore. So, Flame tracking tools, especially the camera tracker, proved to be essential for creating realistic, seamless results.”

In another difficult shot in *Narnia*, footage taken from the helicopter flying over a mountain contained a hotel on a mountainside below. Deaner had to remove this hotel and replace it with rocky cliffs and layers of trees, a process that really maximized Flame camera-tracking capability. Deaner also replaced dull, hazy skies with an early morning sunrise to give the scene a wintery look.

“Our pipeline uses a centralized ‘shot tree’ which can be directly accessed from every workstation. Batch’s LUT (Look-Up Table) node gets used quite frequently to integrate linear CG elements with log background plates,” says Blue.

“The greatest challenge in *Narnia* was the sheer scale of the plate preparation work,” Blue adds. “The tools within Flame, in conjunction with Maya and Burn rendering, enabled us to execute all of *Narnia*’s most demanding tasks successfully.”

Schaub agrees: “The real breakthrough with the effects work was that we were able to complete over 600 effects shots in just eight months. The flexibility and power of Autodesk’s tools made it possible for us to meet this remarkably fast turnaround.”