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Mumbai, India

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—Vishal Anand
Technical Director
Visual Computing Labs

Arjun: The Warrior Prince Invades Bollywood and Hollywood

Visual Computing Labs delivers its second animated feature film in record time using Autodesk® Maya®

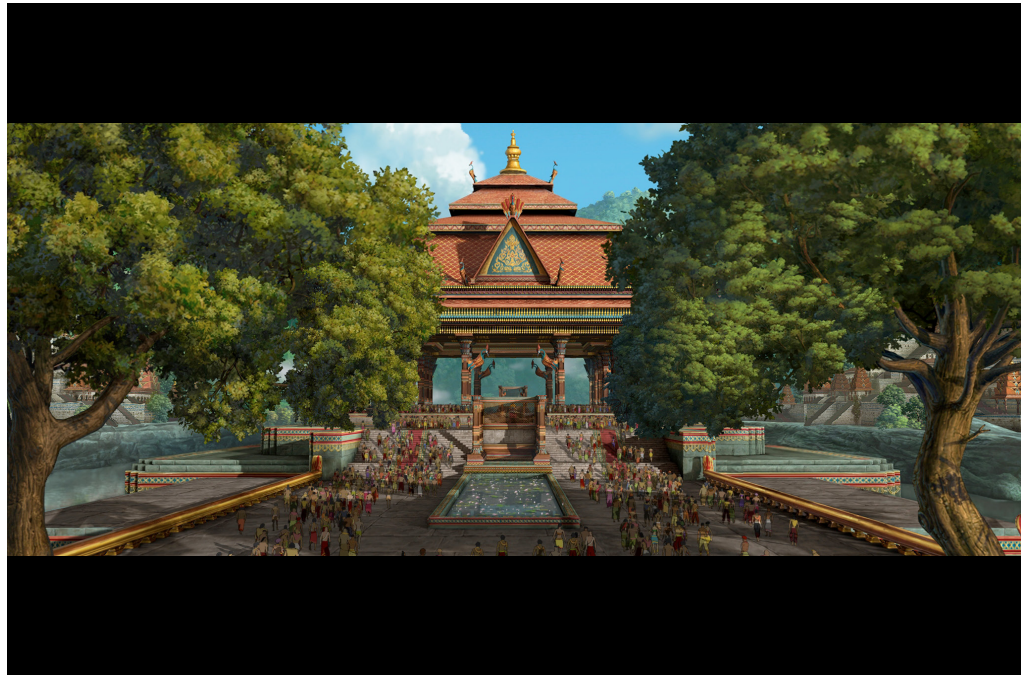


Image courtesy of Tata Elxsi-VCL

Summary

Founded in 2001, Visual Computing Labs (VCL) is the visual effects and gaming arm of Tata Elxsi Ltd., part of the multibillion-dollar Tata Group, and a leading Indian animation and visual effects powerhouse. Over the last 11 years, VCL has contributed effects to a number of award-winning films, TV programs and commercials. Operating out of two offices, the company has studios in Santa Monica, California and Mumbai — both supported by teams of phenomenally talented artists.

When Technical Director Vishal Anand and the VCL team approached the delivery of a second Indian animated feature film, *Arjun: The Warrior Prince*, they relied on the studio's production-proven pipeline. Comprising Autodesk Maya software, Autodesk 3ds Max software, RenderMan, Massive and a number of proprietary scripts and plug-ins, the pipeline was originally conceived for VCL's first animated feature, *Roadside Romeo*. At its core is Maya, which the VCL team used extensively to design elaborate palaces, backdrops and animated warriors that bring the myth of Arjun to life on the big screen.

Over the course of 14 months a team of 80 artists completed the 96-minute film, which features large-scale all-digital sets, massive backdrops and close to 120 different characters. A joint collaboration

between Walt Disney Animation Studios and UTV Pictures, *Arjun: The Warrior Prince* was released in movie theatres on May 25, 2012. Directed by Arnab Chaudhuri, the film features the vocal talents of Yudhveer Bakolia, Anjan Srivastava, Sachin Khedekar, Ila Arun and Hemant Mahaur.

The Challenge

Arjun: The Warrior Prince is an animated mythological action film that recounts the untold story of Arjun. He is a precocious child plunged from boyhood and innocence into a murky world of deceit and betrayal, coming of age to become the most powerful warrior of his time. Spanning the dusty plains of Hastinapur to the icy peaks of the Himalayas, *Arjun: The Warrior Prince* is the story of a man discovering what it takes to be a hero.

“From the very beginning, our ambition with *Arjun: The Warrior Prince* was to create a work of art that would visually transcend other animated Bollywood films created to date,” said Anand. “The nature of the story calls for several challenging action scenes that feature breathtaking backdrops, chariot races and battle sequences. To make those appear rich and hyper-real, we relied heavily on Maya. It was our first choice and a natural fit for the job — giving us all of the tools necessary to deliver the lush, dynamic backgrounds and characters that carry the story.”

Autodesk®

VCL's Mumbai studio was involved in production design on *Arjun* from inception through to completion – producing all visual aspects and facets of animation for the film. “Our team played an instrumental role in everything from previsualization through to animation, rendering, lighting and grading. We invested a significant amount of time in conceptualizing and planning around each frame and character to truly capture Arjun coming of age as the warrior prince,” Anand added.

Special consideration went into the aesthetic of the film to translate Arnab Chaudhuri's vision of the myth onto the big screen. “On a film like *Arjun*, with such complicated scenes, meticulous planning, conceptualization and art design in the pre-production stage is crucial. We worked closely with the director to build massive CG sets in Maya, highly-detailed backgrounds and a large assortment of characters — all while keeping in mind the ambitious nature and unique look of the film that had to be achieved in finite time with a limited budget,” he added.

The Solution

VCL turned to its robust pipeline to deliver the look and feel Arnab envisioned for the movie. “We pride ourselves in using the gold standard in technology, and Maya is the ‘go-to tool’ for high-quality visual effects and animation in India. So naturally, we had a huge talent pool of animators to choose from to fill our additional animation needs for this project,” said Anand.

Taking a distinctive approach to animation, a team of 15 matte painters rendered backgrounds in Maya, while the modeling and shading teams projected them onto pieces of geometry and explored different camera angles until the desired looks were achieved. Each matte painting was broken up into various elements at different depths. VCL also relied on Maya to expedite the transfer of animation

cycles out of Maya and into Massive for crowd simulation.

“Maya enabled us to quickly render the backgrounds with that painterly, yet hyper-real feel, while also creating accurate shadows and animations for each character,” shared Anand. “As the environments and characters kept evolving, we were able to reference, using proxy geometry with very basic textures. This enabled us to block the scenes and choreograph camera moves. From there we could project our matte paintings onto pieces of more detailed geometry, which our team would eventually light and add atmospherics to. This helped us deliver the perspective and depth the director was looking for.”

VCL utilized Autodesk FBX to exchange data between Maya and 3ds Max. 64-bit Linux based systems were used for a number of fluid effects and dynamics in the film. The ability to use Maya Embedded Language (MEL) scripting in Maya allowed more advanced artists and technical directors to create a library of effects that could easily be plugged into shots. These presets could then be applied by any of the artists to a variety of objects by calling the script, placing it into the shot and turning around a desired effect within a short timeframe. Working in small teams, VCL had to automate as much as possible – using Maya and a library of scripted presets enabled them to do this very efficiently.

“With such a powerful, efficient out-of-the box solution like Maya at the core of our pipeline, we were able to complete this rich, large-scale, action-oriented film in record time, 14 months from beginning to end,” Anand added.

To finalize the look and feel of the movie, VCL tapped Autodesk Flame software for finishing and color grading.



Image courtesy of Tata Elxsi-VCL

The Result

Arjun: The Warrior Prince breaks the mould of traditional animated Indian films – giving audiences a cinematic experience that mirrors pure art. Audiences and reviewers around the world have been charmed by the visual masterpiece VCL created for *Arjun*. It's another example of the role VCL continues to play in raising the bar for 3D animation in Bollywood.

“*Arjun: The Warrior Prince* is arguably one of the finest, richest animated action films made in India, and has been well-received by audiences across the globe. The film's stunning visual renderings of India's ancient land and lifelike battle sequences breathe life into this mythological tale. It's an excellent example of the ways Autodesk technology continues to help us reach new heights in Bollywood,” concluded Anand.

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