Tata Elxsi-VCL
(www.tataelxsi.com/htmls/vcl/vcl_home.htm)
Mumbai, India

Prime Focus Group, Ltd.
(www.primefocus.co.in)
Mumbai, India

**Autodesk® Maya® software**
**Autodesk® Flame® software**
**Autodesk® Lustre® software**
**Autodesk® Combustion® software**

Our goal with Roadside Romeo was to create a benchmark quality product that would set the standard for future 3D animated Bollywood movies. We didn't want to create a film that would be 'good for India.' It had to be good enough for the world. Naturally, that prospect can be intimidating, but we went into it confident that our artists, Autodesk toolkit and infrastructure could compete not only within India, but on a global scale.

—Pankaj Khandpur
Creative Director
Visual Computing Labs

# Roadside Romeo Romances Bollywood and Hollywood.

## Visual Computing Lab's Pankaj Khandpur on how Autodesk Software Helped Realize India's First-Ever 3D Animated Feature Film.

**Image courtesy of Yashraj Films.**


### Summary

Visual Computing Labs (VCL) was established in 2002 as the animation, visual effects and gaming arm of Tata Elxsi Limited, part of the multibillion-dollar Tata Group of companies. In just six years, the division has grown to a staff of 400 spread across its two primary facilities in Mumbai, one location in Bangalore and an office in Los Angeles. VCL has also become one of the pre-eminent vendors for world-class 2D and 3D animation, computer graphics and visual effects. And its clients aren't just localized in India. Hollywood productions have tapped VCL for such big budget effects extravaganzas as Spider-Man 3, Ghost Rider and Iron Man.

Recently, VCL Creative Director Pankaj Khandpur oversaw a 150-person team to bring to the screen Roadside Romeo, the first-ever Indian 3D animated feature film and the first Bollywood-Hollywood co-production. Autodesk® Maya® was used as the lead 3D VFX/animation tool to model and animate the film's cast of canines. VCL also relied on Autodesk® Flame® and Autodesk® Combustion® visual effects solutions to create the film and Autodesk® Lustre® software was used for the final color grade. The 95-minute animated love story comprised 1,400 shots, close to 40 scenes, and in typical Bollywood fashion, five song-and-dance numbers.

A Yash-Raj and Walt Disney Pictures collaboration, Roadside Romeo was written and directed by Jugal Hansraj and features the voices of numerous Indian celebrities, including Saif Ali Khan, Kareena Kapoor and Jaaved Jaaferi. It was released worldwide on October 24, 2008.


### The Challenge

Roadside Romeo is the story of Romeo, a coddled pet pooch whose owners pack up and move, leaving him behind to fend for himself on the mean streets of Mumbai. He eventually falls in with a rough-and-tumble gang of stray dogs, and soon catches the eye of the ravishing Laila—but not without consequence. Romeo must somehow get past the much-feared Don of the neighborhood, the portly and intimidating Charlie Anna and his gang.

"Our goal with Roadside Romeo was to create a benchmark quality product that would set the standard for future 3D animated Bollywood movies," shares Pankaj Khandpur, Creative Director at Visual Computing Labs. "We didn't want to create a film that would be 'good for India.' It had to be good enough for the world. Naturally, that prospect can be intimidating, but we went into it confident that our artists, Autodesk toolkit and infrastructure could compete not only within India, but on a global scale."

VCL came on board from the project's inception and was instrumental in developing the look and feel of the characters. "Our team handled all the pre-production, character and background design and storyboards," continues Khandpur. "We chose to design our characters in a 'squash and stretch' style instead of a realistic style. This means a character might walk with a bounce and have a little more elasticity in the way its body reacts to movement. Because of this, we couldn't constrain the characters to pure human motion, so a motion capture shoot was out of the question."

Autodesk®

## The Solutions

Khandpur and his team did do a one-day motion capture test shoot, but found the resulting data didn't match what the director was going for. This meant that certain scenes—including a technically challenging number for the song "Choole Na," which featured a cast of 300 singing and dancing canines—had to be keyframed entirely by hand in Maya and then plugged into the crowd simulation software Massive.

"Fortunately, Maya has a host of features that streamlines the character animation process, which enabled us to complete the song sequence on time," states Khandpur. "One of our favorite features in Maya is its full body IK system, which allowed our artists to rig and animate their characters quickly and easily. Maya also lends itself beautifully to the squash-and-stretch animation style we wanted to achieve. The tool boasts several muscle and skin deformation tools such as 'Jiggle' that were very useful for our artists."

And because VCL also counts Flame as an integral component of its production toolkit, it was key that Maya seamlessly meshed with these packages. During the 21-month production schedule, VCL had about 120 artists working on the film on any given day. Autodesk Flame in-house at VCL was used before being delivered to Prime Focus Group, Ltd. for the final color grade using Autodesk Lustre.

Mumbai-based post production facility Prime Focus worked closely with Visual Computing Labs on the digital intermediate workflow for the animated film. "Prime Focus color scientists worked with VCL animation house to set-up a color calibrated pipeline so we could exchange assets effortlessly and ensure easy communication between the DP and the animation supervisors. Lustre helped us achieve that," said Rohan Desai, Digital Intermediate Supervisor at Prime Focus.

Once the color calibrated pipeline was built, the scenes and tests started coming in and the discussions and efforts became purely aesthetic and creative. "Our Lustre colorist spent time enhancing the scenes with the DP and grading the film without having to worry about the stuff looking starkly different at the animation house. Our colorist used Autodesk Lustre to enhance the lighting and the color schemes of the film during the animation process." said Desai.

**Image courtesy of Yashraj Films.**

**Image courtesy of Yashraj Films.**

## The Results

When Roadside Romeo was released on October 24, 2008, the world took note. Having set many "firsts," it also introduced Bollywood as a major global player in animation. And it's not the last collaboration between VCL, Yash Raj Films and Walt Disney Pictures. VCL signed a three-picture deal and is already into production on a its next animated film.

"The movie has had a great reception in India and abroad, and Autodesk was instrumental in allowing us to produce a quality movie of which we're all very proud," concluded Khandpur. "Autodesk tools have played an integral part of VCL since we opened our doors six years ago. In fact, several of the software engineers at Tata Elxsi helped co-develop the original version of Maya. Because Maya is the backbone of our animation pipeline, we owe much of how Roadside Romeo turned out to the robustness, flexibility and interoperability of Autodesk products."

> Because Maya is the backbone of our animation pipeline, we owe much of how Roadside Romeo turned out to the robustness, flexibility and interoperability of Autodesk products.
>
> —Pankaj Khandpur
> Creative Director
> Visual Computing Labs

Autodesk®