

Frantic Films

By Audrey Doyle

Previsualizations created in 3ds max help Catwoman filmmakers plan and shoot purrfect sequences

As the costs of filmmaking continue to soar and associated deadlines continue to shrink, efficiency throughout the stages of film production is crucial. Realizing this, Frantic Films, a live-action, visual effects, 3D animation, and commercial production company based in Winnipeg, Canada, advocates the use of previsualization whenever possible to give directors, producers, and visual effects supervisors a clear understanding of the most efficient way in which to shoot live-action and digital sequences. To provide filmmakers with the most detailed previsualizations as quickly as possible, Frantic Films relies on Discreet **3ds max**® software.



"Movie-making can be a very abstract process, and often, a studio gives millions of dollars to one person, the director, who is basically telling the studio, 'Trust me, I'll make a good movie for you,' " says Ken Zorniak, COO and VFX producer at Frantic Films. "With our **3ds max** previsualizations, we can collaborate with filmmakers to plan sequences from start to finish. In this way, everyone involved in the process—from the studio to the director to the visual effects supervisor to the post house, whether that's us or another facility—has a firm grasp of how the final product will look before a set is built or a scene is shot."

Through such careful planning, the artists can facilitate the filmmaking process tremendously. For instance, by watching the sequences, created as low-res 3D geometry in **3ds max**, play out before their eyes, directors and visual effects supervisors can dodge potential set-design problems, as well as determine what to shoot in camera, how to accomplish those shots, and what needs to be created digitally. Furthermore, by populating the sequences with stand-ins created in **character studio**®, the advanced character animation option for **3ds max** software, the filmmakers can time the actors' movements.

And thanks to the speed and ease of use of **3ds max**, the artists can readily create the previsualizations, and promptly accommodate changes from the filmmakers for subsequent approval. "With the powerful polygon modeling tools in **3ds max**, we can model our sets and environments extremely quickly, and with the Motion Mixer [within **character studio** software] we can animate quickly by mixing and matching animation files," says Chad Wiebe, previsualization supervisor. "We can literally make changes with the director looking over our shoulder, and at times give him real-time playback in our viewport window. **3ds max** is a powerful tool for previsualization."

Thanks to the speed and efficiency of **3ds max**, Frantic Films has saved filmmakers time and money in many film projects. Some of these include the blockbuster films *Swordfish*, *X2: X-MEN UNITED*, and *Scooby-Doo 2: Monsters Unleashed*, for which Frantic Films relied on **3ds max** to previsualize several action sequences, as well as to create 3D effects for some key scenes.

Most recently, the company used **3ds max** to previsualize approximately 10 sequences (about 1500 shots) for the Warner Bros. film *Catwoman*. According to Zorniak and Wiebe, sometimes the Frantic Films artists previsualized sequences in *Catwoman* to give the film's director, Pitof, an idea of how to shoot a sequence. An example of this is the rooftop sequence, in which Catwoman is fighting with some antagonists. "For this sequence, the filmmakers asked us to come up with something really cool," says Zorniak. "That was the only direction we were given."

"We had done a large number of motion studies to prepare for this project, and using the Motion Mixer in **character studio**, along with some motion-capture data we imported into **3ds max**, we created a pretty extensive library of moves," adds Wiebe. "From that library we created different variations of moves we thought they might want to see, then strung together the most dynamic ones."

The artists built a rooftop environment using **3ds max** software and used **character studio** stand-ins to map out the motion. Using this previz as a guide, the filmmakers were able to choreograph the scene and choose which shots would employ a CG Catwoman and which could employ a live-action stunt double. "This gave the filmmakers a clear understanding of how the fight would play out, as well as the best way in which to shoot the live-action moves," says Wiebe.

Frantic Films has also used previz to allay the filmmakers' budgetary concerns. An example of this use is the jewelry store heist sequence. As Wiebe explains, the filmmakers originally wanted the entire sequence to employ a CG Catwoman.

The artists created their first pass, comprising a low-res Catwoman, using extreme moves. "We wanted to make the action look as cool as it could," Wiebe recalls. "But because he couldn't afford to do all the shots with a CG Catwoman, the visual effects supervisor, Ed Jones, picked some shots that he wanted to keep as CG. Then we modified the rest of them so that a stunt double could be used, therefore making the sequence more affordable." The CG Catwoman was modeled and animated at ESC Effects in San Francisco.



In addition to helping with these issues, previz also helped the filmmakers determine where best to place their cameras before shooting sequences, as in the Ferris wheel sequence. "A lot of the sequences we worked on had scenarios similar to this one, where we previsualized the sequence so that the filmmakers could get a sense of how it needed to be shot. Based on our first pass, they'd come back with set, location, or camera revisions, depending on the situation at hand."

In the Ferris wheel sequence, the artists' previz comprised a **3ds max** Ferris wheel and **character studio** stand-ins representing all the actors in the shots. "The filmmakers used our previz to figure out how to set up the cameras so that they could get the shots they needed without having the Ferris wheel get in the way, all while preserving the action of the sequence," says Wiebe. "In **3ds max**, we were able to best position our virtual camera to ensure that the filmmakers got the most powerful shots they could in camera."

In addition to previz, Frantic Films also used **3ds max** to create CG elements for sequences they previsualized. For instance, in the film's nightclub sequence, Catwoman steals a whip from one of the dancers at the nightclub and uses it to intimidate the thug.

"Although Halle Berry was trained to use a whip, the filmmakers didn't want her swinging an actual whip

around because that might have been too dangerous," says Wiebe. "Artistically, they wanted to bring the whip directly into the camera—they wanted to make the whip the main character, the focus of the shot. So we used **3ds max** to previsualize the motion of the CG whip and get everyone to buy off on that, then tracked a 3D whip we built in **3ds max** into the shots. This gave everyone the movement and look they wanted, which couldn't have been accomplished with a real whip due to safety reasons."

In all these ways, Frantic Films' **3ds max** previsualizations helped the Catwoman filmmakers to ensure efficiency throughout the stages of the film's production. "It's hard to say exactly how much time and money previz saved," says Zorniak. "But suffice it to say that when you're burning \$40,000 an hour on a movie set, you don't want to waste time or money standing around, trying to figure out how to shoot a sequence. In this way, previz was indispensable."



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"With that said, previz is a very intense, time-sensitive type of work," adds Wiebe, "and anything that can help you produce the previz more quickly will be a huge benefit in the long run.

"**3ds max** definitely helps us in that sense," Wiebe concludes. "Previz is an extra step in the filmmaking process, so it needs to pay for itself. Thanks to the ease of use and speed of **3ds max**, our previsualizations do pay for themselves, many times over."