

Working in Italy

Gianluca Dentici takes us on a trip to Italy to discover what the visual effects community is like in Rome and beyond.

By Gianluca Dentici

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Videa has helped to place Italy on the vfx map. Fifteen years ago, that country viewed vfx as America's domain. All images © Videa Visual Effects.

About 15 years ago, special effects was synonymous in Italy with a very specialized American professional art form, but since that time, thanks to the visual-art evolution, minds have been open to new technologies and new ways of thinking in my country. One of the last countries to make the entrance into visual effects has been Italy, earth rich in history and culture and home to many artists. Taking its creative cues from the rest of the visual effects communities and looking to make its own creative and culturally elevated contributions, Italy refused to be shut out any longer. All of this clamour allowed the birth of new postproduction facilities, and consequently the evolution of new visual effects professions even in Italy.

Once upon a time, it was very difficult to conceive of the birth of a company gaining financing only through the creation of visual effects for movies. In fact, my role as visual effects supervisor was misunderstood by both the old Italian production system and the specialized schools (excluding some software courses focused on teaching particular products instead of sharpening visual perception).

Surely the kind of movies produced from this country doesn't permit surreal or futuristic images to be created in such an artificial way, because of the main nature of the Italian movie industry, which is focused on the auteur, and not on pure entertainment. This is one of the main reasons for this artistic lag. Fortunately, in the last few years we have assisted in a more perceptible approach to digital technology for moving images, and have been utilizing visual effects to serve the story directors want to tell. The slow understanding of this complex but, at the same time, fascinating art form has allowed for the rise today in specialized schools that teach broader forms of visual communications beyond the technical, which in turn has spawned a generation of professionals that work in this new industry for several prominent companies.

Actually there are nearly 15 Italian companies that work on visual effects in one capacity or another for national distribution according to strategic reasons: those who work for commercials and advertising are usually located in Milan, which is an industrial town, instead those working on movies that are in Rome because of the closeness to studios such as Cinecittà, Roma Studios.

I work for Videa, which has been one of the leading companies in our country for 12 years, offering its services and creative skills for movies, TV and advertising.

Personally I owe my knowledge to my attendant at the European Academy of Special Effects, directed by three-time Academy award-winner Carlo Rambaldi (*E.T.*, *King Kong* and *Alien*). There, I had the opportunity to enhance not only my duties on painting techniques, sculpting, special make up, miniatures and, obviously, computer graphics, but also on cinematography and other mediums of expression. This great didactic experience and periodic visits to American postproduction offices were so fundamental because they gave me a wide know-how of this area from a technical and artistic point of view, and a precious knowledge of technical matters, which is that thing that allows you to put in practice your artistic stimulus, pushing you further to experiment with other ideas in search of technical and creative solutions.

Every single operator is like a mosaic's dot. A good example would be the immense work done for *The Lord of the Rings* trilogy, where the first goal was to keep the same stylistic feel during the storytelling, and they did it artistically and technically.

Learning from what Weta and other companies have done, Italian people started to understand the team's interactive importance and how an internal organization should operate, at the same time recognizing the artistic contributions of each individual.

This new observation allows new companies to rise along these lines, structuring their own working pipelines in a much better way.

From an internal perspective we are split into two operating offices at Videa, which is also divided into two main departments: Digital effects and a special shooting group. The digital effects group is comprised of around 18 creative talents subdivided between 3D and compositing divisions. Many of them came from traditional art and skills such as scenography, comics, cartoons and design, while the shooting group is composed of several operators with particular skill at handling bluescreen stage work.

While each department has its own structure and internal philosophy, we have some points in common that are musts for everyone. For us at Videa, one of them is previs, because it allows us to begin adequate planning of the work and to setup the pipeline according to the needs of the production.

But working in Italy means facing several problems when approaching the visual effects for a movie. At the office we use a particular formula to study movie projects, which is not properly the "Italian way." That's why sometimes it can create little misunderstandings with new clients, especially when they are not accustomed to working with a good planning system. In fact, while we love to face the work using storyboard, animatics, layouts and asking ourselves technical questions in advance, some directors see this as an obstacle to their creative vision and an incredible waste of time; for that reason, it is not always easy to let them understand how important this study is.

However, in my experience once directors try their hand at previs they come to rely on it because of the obvious advantages and cost factors. These experiences have been very educational. We have nearly three people on staff plus outside collaborators dedicated to previs and storyboarding for our visual effects purposes. They use pencils and some dedicated software packages to create animatics to show to directors. We use Poser to create little storyboards or animatics, especially when the scene involves human elements. We use the "sketch renderer" to give it a more appealing feel.

From a producing point of view, our effort is to be constantly sensible when making a visual effects study of production costs, because it can be really sad to see your producer watch your solutions and say: "You mean you want to use motion control? Are you mad? Forget it," ripping the page and dropping it in the trashcan. Unfortunately in Italy, this is very common. But to avoid this grotesque scene, we write more than one solution for shots, even if sometimes the second is an ancient method, as long as the final target we aim for is the best we can achieve.

A good visual effects study can't be compiled without the supervisor's touch; this is a very important role for us during the project analysis phase for production on stage and in front of monitor screens in post.

For these reasons I supervise all shoots involving our work, and I write down, on a special log, all possible data regarding set and motion picture camera setup, such as film stock and format, focal length used for that scene, shooting speed, camera inclination and height from the ground, eventual filters used, take duration and also if we did a light probe pass or clean plate.

Before, during and after shooting I also take some reference pictures of the whole instalment with my digital camera, and when special tasks need more relief, I also measure set dimension, light source positions, hour, day and, in some cases, also the wind direction.

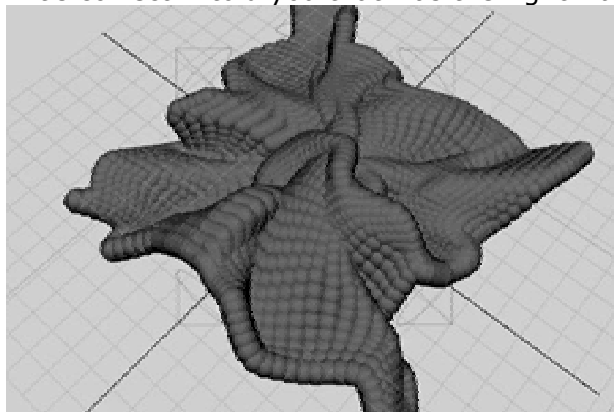
Surely, I always ascertain myself that no one put color correction filters in the camera's matte-box or that the operator removed the gate to expose a full frame shot, so we can have more freedom in post avoiding other trouble.

Then, pictures and vfx logs are sent to our main office and put on the main server for operator's consultation.

Very often we bring with us laptop PC and video mixers on set that we use to show a first preview of the final shot because it can help directors to frame the scene easily, and/or eventually to go for subtle camera aligns if some visual effect shot needs it.

Although we use those techniques carefully for pre-production and production phases, it's very complicated to talk about a real visual effects industry here, especially for the movie world, because, while advertising is very open to the multiple possibilities offered from new digital media tools, the movie industry is still a little bit skeptical about digital grading applied in post.

Sometimes this scepticism and lack of technical knowledge in our country generate an awful lot of hostility and mistrust about digital methods in general, and also toward those professionals who work with them. Often a great number of Italian cinematographers complain about some bad detail they "feel" about your image (even if non-existent) just to find some bad artifact you did. In this case, I use the "sea way," which means that I go to spend a day on the beach, then come back, show the shot again and enjoy listening to the following response: "OK, man! Now it's correct. I told you that was the right way."



Videa recently joined with the Mathematics and Communication Science and Media department of the University of Tor Vergata of Roma, to create an R&D team. This program has benefited both the students and Videa.

We constantly fight this mentality in several ways, sometimes proposing tests just to prove the results that can be accomplished with great quality. I remember particularly the movie *Francesco* where we proposed building a digital backlot to compose behind the real set. The director gave us the opportunity to do that while assuring us that he would cut out every

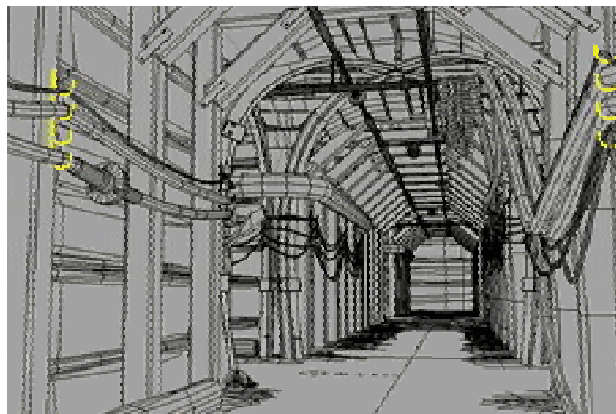
digital contribution anyway, because he hates digital. Instead he retained everything we did. It's all part of the education process.

Sometimes there is a lack of communication between production and postproduction staff, and a serious ignorance about the needs of digital tools to be used in post that would have been easy to manage, but became real blood-baths when the supervisor was not involved during the shoot. A good example was the movie *Pontormo*, the real life story of the painter and portraitist Jacopo Carrucci (nicknamed Pontormo) from 1400. Here the production had to shoot long greenscreen sequences, but they did it with incredible carelessness, worrying only about putting a green cloth behind the actors. So when the ball was passed to us, we managed a shot operated with an ultra-high-sensitive film. Furthermore, the green "carpet" in the background was something like a gradient of greens; moreover, our frames were not coming from a film scanner but from a Telecine at 1,920 res. We said: "OK, let's start to prepare towels, suitcases, toothpaste and other stuff to live at the office till next summer."

To fix this terrible mess we used elbow oil and several tools and techniques, and finally came up with a solution to pull out the matte using multiple keying on a striped-subdivided image. So we divided the shots into three or four slices and applied the key on each portion. Then, we had to match the background image with a picture taken from a digital camera. Perspective was the only correct element in this image, but the color temperature, shadows and lighting intensity were way off. So while some were having problems enhancing mattes, others were correcting background images, striving also to maintain color palette, contrast and shadows of foreground image, because, after the matting phases, the foreground element couldn't be touched to avoid other artifacts.

This work was an unprecedented use of time and creativity that could have been avoided if the supervising staff had been involved during the shoot. Moreover, we would have had a better starting point if they had used good film stocks such as Kodak SFX200; it is a special negative that has a better response for green and bluescreen shooting, but not too many people know of its existence in Italy.

Anyway, the up and coming digital intermediate process is giving a great hand in this sense, because cinematographers have now more chances to become familiar with new tools and techniques, and it will probably help educate them more deeply. In this regard, Cinecittà Studios, which owns a large DI department with great equipment and professionals, is conducting good work.



Videa created this tunnel for *Marcinelle*, the story of a real coal mine disaster.

Fortunately, our experience on *Marcinelle*, a true life story of a coal mine disaster which utilized 27 minutes of CGI, was a much better project. It wouldn't have been possible to face daunting work like this without suitable pre-production planning, and for that reason a meticulous supervising phase and carefully planned shoot were precious and irreplaceable. This show comprised fog, haze, fire, water, digital backlot, digital stunts and more, so I spent about

a month inside a big soundstage supervising the second unit with the stunt coordinator, and writing lots of vfx log pages.

Those scenes included dropping stunts, greenscreens, real fire blasts and water pumping sequences. Obviously we shot thinking in advance what we would have put in post to enhance this hell.

During post work, though, we realized that some original sequences seemed very unrealistic, so we tried to reproduce them entirely using CGI. The final results were really amazing, and after the director's approval we were pleased to substitute the original shots with ours. They included sequences depicting digital stunts falling into precipices (3D digital backlot) and eaten by flames that we realized in CGI or shot in a backstage and then composited.

Almost every operator from the company worked on this show, facing difficult sequences to matchmove, especially those comprising digital backlot of the elevator's shaft. This was due to the subtle waves of the motion picture camera on set, which was not well locked to the fake lift; so this burdened the matching work. Several scenes needed also to enhance debris, so we went for a hybrid solution with CGI elements and other real stuff captured in front of our bluescreen.

By the way, the bluescreen stage is the real "tip of diamond" of the company; it satisfies a great deal of our shooting needs, also offering a reliable lighting system that is driven by a dedicated digital console. Moreover, video cameras such as Digital Betacam or HD that you can use in the blue box can be directly linked to framestore systems or the main server, allowing fast captures of the footage.

In *Marcinelle* and other productions we felt the need to optimize our production processes in order to reduce bottle-necks while always keeping a higher quality of work. One method was to develop new proprietary software plugins, so recently Videa signed a very important partnership with the Mathematics and Communication Science and Media department of the University of Tor Vergata of Roma, allowing an R&D team to be created inside our company. This profitable collaboration permits new graduate students to practice their ideas while serving our needs, marking Videa as one of the first Italian companies to enlist an R&D department inside its facilities.

Coming from different backgrounds, the first step was an alignment of their knowledge with ours by showing them our results and expectations. We had to educate them about "visual results" because very often scientists are more prone to study events or simulation with scientific points of view that are not necessarily visually-based. We also had to teach them that sometimes a good simulation can result in a bad visual result even if mathematically correct.

But the contribution of this new pool began immediately after a brief start-up period. They began to face several programming tasks to enhance the features of 3D and compositing packages we use, enriching them with new scripts and tools. For Softimage XSI, for example, they wrote other primitives, polygonal manipulation tools and some strange dynamics fields for particles (that seem to pop out from the screen!). And they have additionally focused on Maya, working on fluid effects, which we are interested in purchasing now that we know the capabilities. For compositing, while we are evaluating new packages such as Nuke, which seems to be a great software with good playout systems and several tricks for 3D manipulation, they did some experiments on Cyborg, the package we use mostly, trying to enhance the color corrector and mask tools, but it's a work in progress.

From a production point of view, remembering the awful experience we had on *Pontormo*, the team was called on to create a tool for compositing, which would automate the process they did by hand on that film, analyzing the image, slicing it according to its own complexity and

acting to extract the matte in a better way. This tool is still under construction as a stand-alone for certain situations that we hope to avoid in the future.

Other programming was done for *Il silenzio dell'allodola*, a movie still in progress, about a prisoner who suffers violent abuses in jail. This time the production need was to create fly swarm animations for multiple shots staged inside the prisoner's cell. We understood immediately that to make this work correctly we had to focus our attention on random fly behaviour, so we proceeded only after viewing a special documentary about insects that confirmed our ideas.

In this case, I personally wrote the first animation script based on translation and rotation, using noises and random parameters and variables and resulting in a very good realistic feel, done in a very short time. Going this route avoided the drawing of single curves and paths from scratch for all CGI elements involved, which would have meant very time-consuming work and would have resulted in repetition cycle problems. Instead, by going random, the animation is ever changing.

Following my instructions the R&D team realized a custom interface where the operator can define parameters for scene complexity, such as the number of flies, reference objects to visualize and modify the size of the animation area, velocity and random movement intervals. They are still working on the scripting where we need to display fly paths to get trajectories, and to check for any geometric penetration problems with real elements. To accomplish this, they are working on Barnsley's fractal interpolation algorithm and studying other methods written by Foley e Van-Dam.

Meanwhile, for the production *E ridendo L'uccise*, Videa was hired to create a realistic digital backlot, encompassing a medieval village entirely built in CGI. I spent several days in tight contact with set designer Giantito Burchiellaro (a very famous professional who worked with Federico Fellini), who rendered a color paint concept of the final scene, working on a pictorial look during location phase and a typical design for buildings that perfectly matched the era. With this great piece of art, the creative department of Videa started to divide the picture into single elements, obtaining detailed designs for each building, while respecting the style used by Burchiellaro and sending them to be modelled by the 3D department.

At the same time, I was on stage supervising the shoot, giving acting suggestions, studying camera moves and recording technical data on my beloved log.

On stage we also did a light probe shot to recover lighting information and to push the HDR image data inside Softimage XSI, obtaining a lighting map that best matched our 3D backlot with the real environment lighting condition we had on set.

Difficulties came when we had to track the camera movements of the original shot because we didn't have motion control during shooting, and the particular scene framing used for the long dolly movement didn't allow the use of track markers on set. It was so hard for our operators to figure out the right solution to track this, but we did it using automatic tools and some good hand work for certain frames.

More difficulties arose when we had to add fire and smoke to a fight in the village.



Digitally matching the elevator shaft in *Marcinelle* was a challenge for Videa's vfx artists.

Imitating nature is one of the things that we sometimes fail to manage, and while today it is easier to create good water, matching fire realistically represents a difficult task. The operation started by creating background fires in CGI, matched by archival footage in the foreground and shooting other footage on our backlot. More flames meant more haze and fog, so we had to provide enhanced particle animation. We used sprites attached to the particle systems along with some additional R&D work, but instead of using simple images, we relied on math and procedural techniques to generate them. The result was amazing and it looks so real, thanks also to great compositing work of more than 70 layers.

The collaboration between Videa and the R&D team has been so invaluable (they are now working on random particle paths to be applied to more complex surfaces and geometries, as well as further fluid simulations beyond what Maya already offers) that on Dec. 3, the University of Tor Vergata of Roma has organized an important meeting titled "3D Day," in which the Videa R&D team will unveil the results that this partnership has produced.

Recently we also decided for a pipeline evolution to improve our technical administration procedures and to simplify the connection between the two offices located in different cities (which will soon expand to three). To achieve that, general manager Sergio Di Renzo, working in tandem with the various technical departments, launched a project for a special remote database with multiple access points; it will allow supervisors to check remotely the production course, viewing the state of the art of single tasks assigned to operators and evaluate the need for other resources to avoid delays on deadline. From the operator point of view, it will offer more control, especially for working databases, frame storage and backups. Other features will be the check of rendering processes, CPU availability, automatic response for rendered scenes, auto frame transfer to playout systems or compositing workstation, auto back-up on dedicated machines and more. The whole system will be developed and realized using the knowledge of several outside professionals with skills in system administration and network engineering.

When completed it will be implemented and carefully used on a new idea we want to realize here: a movie entirely created in CGI, which is already in the production design stage. Soon the Videa Website (www.videa.it) will host images and the first trailer, and will contain a stunning 3D city filled with background detail created by procedural modelling.

In conclusion, I think that several Italian visual effects companies have begun to sharpen their graphical weapons and it will soon be possible to talk about a real explosion of new technological implementation for motion imaging in Italy. And for the first time, the David di Donatello Academy introduced an award last year for special effects, which is great recognition for the category. This in turn will allow visual effects companies to increase their services and to be more widely known abroad.

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