

BEYOND THE WALL

The story of six VFX studios behind the epic *Game of Thrones*

SHOTGUN

AUTODESK.

Image courtesy of Pixomondo

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Since its debut in 2011, HBO's *Game of Thrones* has proven many things: that fantasy fiction is alive and well, that film-quality visual effects are possible with TV budgets, and that one IP, done right, can both capture the public imagination and breathe new life into an entire industry. The ambitious series set new standards in large-scale visual effects production.

To talk about this, we sat with ten visual effects pros from six studios around the globe who work on *Game of Thrones*. From Dublin to Stuttgart, Frankfurt to Melbourne, and Vancouver to Montreal, they share how the network series turned global phenomenon – with its tight deadlines and high viewer expectations – has challenged internal workflows, the way facilities collaborate and the visual effects business overall.

THE PLAYERS



Image Engine
Vancouver

Tyler Weiss
VFX Producer

Barry Poon
Asset Supervisor

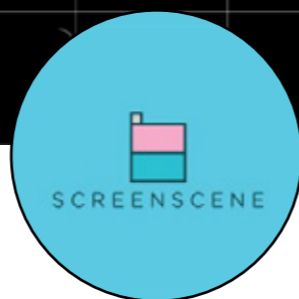
Laura Dochtermann
VFX Coordinator

Edmond Englebrecht
CG Supervisor



Rodeo FX
Montreal

Matthew Rouleau
VFX Supervisor



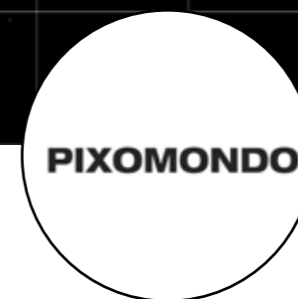
Screen Scene
Dublin

Ed Bruce
VFX Supervisor



Bluebolt
London

Jan Guilfoyle
VFX Producer



Pixomondo
Frankfurt

Sven Martin
VFX Supervisor

Sabrina Gerhardt
COO/Executive
Producer



Iloura
Melbourne

Ineke Majoor
Executive Producer

01 THE BEGINNING

“It was exciting to create these environments that have gone on to become iconic.”

Jan Guilfoyle, BlueBolt

BlueBolt signed on as the lead vendor to *Game of Thrones* when we were less than a year old as a newly established facility. BlueBolt took on the biggest shots of the first season – we created all the environments such as The Wall, Winterfell, Kings Landing, Vaes Dothrak, The Eyrie and The Twins. Given that this was the first time that any of these locations were to be seen, it was exciting to create these environments that have gone on to become iconic in the *GoT* world.

Ed Bruce, Screen Scene

We pretty much did half of the total shot count. It was quite clear after Season One, though, with the scale to which it was about to grow, that it was much better to treat the show like a feature film and go multi-vendor.

Jan Guilfoyle, BlueBolt

This show was a unique one for us in the sense that we had two teams operating in different locations. We had a team in Dublin and another in London, and because of that, it was crucial that there was a central hub that we could work from, and where we could see all the information from both studios. That's where Shotgun came in.

THE WORK

Jan Guilfoyle, BlueBolt

The Wall was one of the most memorable shots of Season One. It garnered a great response when it went out in the first trailer. Because *Game of Thrones* had a massive, established book following, there were a lot of people eager to see it long before it aired. It was met with genuine delight.

BlueBolt's main strength is environments, but for *Game of Thrones*, we also took on the creation of the baby dragons in Season One. Alongside The Wall, it is one of the sequences of which we are most proud. It's been amazing

following the series and seeing the dragons grow season by season, knowing that we started them off.

Ed Bruce, Screen Scene

Because we were one of two vendors on Season One, we were lucky to get a few 'chunky' shots. I'm still very proud of the big tent encampment scene. It wasn't budgeted for, and we had to design it very quickly with the director on the fly. It's one of those that brought all our departments together to work on crowd duplication. We had effects and lots of CG models and assets, and a hell of a lot of roto.

“It's been amazing following the series and seeing the dragons grow season by season, knowing that we started them off.”

Almost the entire team got to be involved in it.

We've done all types of work – set extensions, crowds, snow, blood, arrows, eye replacement – and there's nothing better than Shotgun for the management of it all. With the scale of the VFX being what it is, each season means more vendors. They've been terrific at selecting the best studios to do the work they're specialized in, like Rhythm and Hues, Mackevision, El Ranchito, Rodeo FX, Image Engine, Iloura, Pixomondo. Last season, we ended up working on over 600 VFX shots.



Sven Martin, Pixomondo

We handle most of the work for the dragons. We're working for about six months on those assets before the others come on board to do their shots, then we hand our assets over to them. I'm proud that we've been with the dragons so long. We've made them grow from babies to teenagers, to majestic adults. That's something which doesn't happen very often. *Game of Thrones* is unique work. We're building assets - worlds - that remain for years.

Sabrina Gerhardt, Pixomondo

And we access these assets again later to refine them. I don't think that was ever done before.

Matthew Rouleau, Rodeo FX

Game of Thrones was our first TV project. We were waiting for a show that would push the bar for visual effects. Finally, when we got in contact with HBO and the *Game of Thrones* people, it proved the perfect opportunity. We got on board for Season Four, and I was excited to get in, but I don't think we expected it to be as impactful for us as it ended up being.

Barry Poon, Image Engine

We ended up doing quite a few of the death scenes between Season Five and Six, requiring full CG assets to be built, compositing, and painting. We also did a variety of set extensions and CG environments like The Wall, which was entirely CG.

Edmond Englebrecht, Image Engine

We also worked on Benjen Stark's return in Season Six. He didn't have enough frostbite on his face, so we had to replace it in around 20-30 shots. It was very elaborate, challenging work but we managed to get through it. Also, the opening shots we did for that season featured The Wall. We had to upgrade the asset tremendously. You had to be able to look at it as

though you were right next to it and also from far away. We had to do a lot more procedural shading and texturing. A good bit of work went into that, and it paid off.

“ We're building assets - worlds - that remain for years. ”



03 THE SPOILERS

“ Oh my God, I didn't want to see that! ”

Jan Guilfoyle, BlueBolt

Lots of our crew were reading the books as we were working on the shots. When one of our artists was told he was working on Ned's beheading sequence, he was gutted. He hadn't got to that part of the book yet. He was like "What?! He dies?!"

Ed Bruce, Screen Scene

Because we do gore, we've always been part of those big spoiler shots, like Ned's beheading in Season One. We've been quite lucky to be involved in a lot of those big moments.

Matthew Rouleau, Rodeo FX

When we mention the show to people outside of Rodeo FX, they immediately want to know what's going to go on in the story. I tease them and tell them that if they want spoilers, they'll have to buy me a beer, but of course, we never say a word. For the people here who follow the show, it's bittersweet because they get to contribute to it but they also get all of the spoilers. Sometimes in dailies, we'll have people yelling out at the screen, 'Oh, my God, I didn't want to see that!'

Laura Dochtermann, Image Engine

Episodic TV has the worst type of spoilers because you don't get a continuous sequence like you would with a feature film. You see one shot here, and one shot there, and people just assume you know everything.

04 THE TIMELINE

Jan Guilfoyle, BlueBolt

Game of Thrones is on a very tight schedule, all of Season One was posted in four months. Episode 1 aired while we were still working on 4 and 5. You could feel them creeping up on you, and it meant that we had to keep moving, quickly and efficiently. When we saw the first episode, we were like, "Wow, this is good!" There was increased enthusiasm. It was clear that we were working on something special.

“You can’t pause for a minute.”

Ed Bruce, Screen Scene

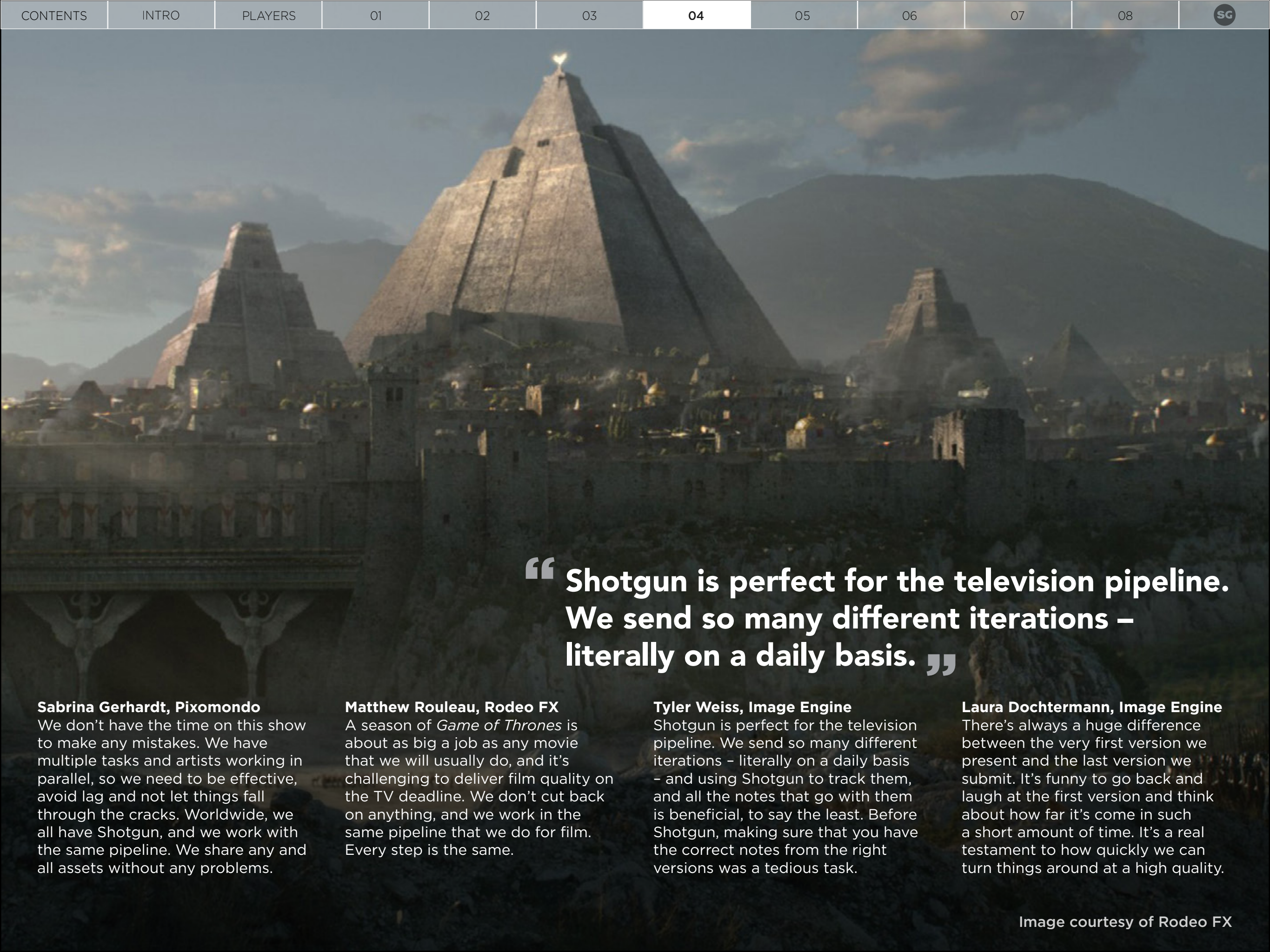
The average turnaround for *Game of Thrones* is ten weeks from when they lock to when you have to deliver, and if you’re not quite on top of it, you’re very quickly chasing your tail because deliveries start coming thick and fast. You can’t pause for a minute.

Laura Dochtermann, Image Engine

The challenge is always the condensed schedule. It’s much different than what we’d have for a feature film. Typically, we’ll have something like four months to deliver 200+ shots. A lot of the vendors who work on the show all help each other out to deliver on target deadlines for each episode.

Tyler Weiss, Image Engine

The scope continually grows as well. When shots go into editorial, we’ll often learn we need to work on a few more shots just to make the story work better, or even to get the episode up to length. Your shot count can grow substantially, but of course, the deadline stays the same because the show has to air on a given date.



“ Shotgun is perfect for the television pipeline. We send so many different iterations – literally on a daily basis. ”

Sabrina Gerhardt, Pixomondo

We don't have the time on this show to make any mistakes. We have multiple tasks and artists working in parallel, so we need to be effective, avoid lag and not let things fall through the cracks. Worldwide, we all have Shotgun, and we work with the same pipeline. We share any and all assets without any problems.

Matthew Rouleau, Rodeo FX

A season of *Game of Thrones* is about as big a job as any movie that we will usually do, and it's challenging to deliver film quality on the TV deadline. We don't cut back on anything, and we work in the same pipeline that we do for film. Every step is the same.

Tyler Weiss, Image Engine

Shotgun is perfect for the television pipeline. We send so many different iterations – literally on a daily basis – and using Shotgun to track them, and all the notes that go with them is beneficial, to say the least. Before Shotgun, making sure that you have the correct notes from the right versions was a tedious task.

Laura Dochtermann, Image Engine

There's always a huge difference between the very first version we present and the last version we submit. It's funny to go back and laugh at the first version and think about how far it's come in such a short amount of time. It's a real testament to how quickly we can turn things around at a high quality.

THE BATTLE OF THE BASTARDS



Ed Bruce, Screen Scene

Battle of the Bastards – now that was a multi-vendor sequence! I think there were six of us on it at one point. We'd be working on one shot, while the others were working on something else but there was a crossover, and we impacted one other. It was a constant flow of shots and work in progress going through the independent team back to us so that all of the vendors stay on the same page.

Matthew Rouleau, Rodeo FX

We're probably the proudest of the sequence we did in *Battle of the Bastards* – it was massive. We created boat destruction and interactive water effects. We also built a fully CG Meereen that could be seen in any angle. Every detail was computer-generated from fruit stands to trees, buildings, pyramids, to the surrounding river and mountains.

Ineke Majoor, Iloura

Hundreds of assets filtered down into multiple departments through roughly 120 artists for *Battle of the Bastards* and Shotgun helped us with that: 10,500+ reference images and movies, 130 shots, and 200+ assets. The longest shot-duration shot was 1400+ frames. We're especially proud of *Oner*, the longest shot in the episode. It's got a 60-second duration with hundreds of assets, animation cycles, 2D preparation, and outsourced tasks.

Image courtesy of Iloura



06

Image courtesy of Rodeo FX

THE GAME CHANGER

Jan Guilfoyle, BlueBolt

Tonally, I think many have followed in *Game of Thrones*' footsteps. For most of what's now coming out of different production houses, TV networks, and services like Netflix and Amazon, the point of comparison is often *Game of Thrones*. It was a game changer for television.

Ed Bruce, Screen Scene

A shot is always right because they have to get it right. They rarely concede even though the schedule is tight. Joe Bauer, the independent supervisor, and the independent guys before have driven that quality. Over six seasons, I haven't seen a single dud, and that's a testament to Joe and the other supervisors before him. Since *Game of Thrones*, a lot of the lower-budget shows expect that same standard, too. The mandate for us has become, "Do fewer shots but at the same level as *Game of Thrones*."

“The sheer scale of the teams all over the world [is] almost unfathomable.”

Sven Martin, Pixomondo

Since *Game of Thrones*, we've taken on more shows, like *The Walking Dead*, *Fear the Walking Dead*, *Shannara Chronicles*, and *Sleepy Hollow*. All of them rely on visual effects in a big way, be it landscapes or creatures. *Game of Thrones* has undoubtedly inspired what's come after it.

Tyler Weiss, Image Engine

It used to be that higher-end visual effect studios didn't consider television, but now with shows like *Game of Thrones*, it would be kind of goofy not to. The sheer scale of the teams all over the world putting this show together is almost unfathomable.

Matthew Rouleau, Rodeo FX

It was only a matter of time before all the effects on TV shows started catching up to film. I'm not saying it's on par yet, but we're starting to see some sequences or shots here and there that are film quality. The gap is closing up for sure.

Barry Poon, Image Engine

Audience expectations are a lot higher than they ever were before. *Game of Thrones* has seen to that. It's perfect for us because it just creates more opportunities to take on different projects.

“**Audience expectations are a lot higher... *Game of Thrones* has seen to that.**”

Ed Bruce, Screen Scene

The scale of the show has always been impressive, even in Season One. When we arrived on the massive, hilly set for the tent encampment scene, it had been snowing the night before, and the scene didn't call for snow, so we had to find a way to remove it. With a whole day shooting in the field and snow in every shot's view, we were going to break the budget. So, I pulled over the line producer and art department and a few other heads and said, 'I've got a problem here. All this snow that isn't visual effects planned will now be visual effects.' Within 10 minutes, there were teams of men with flame throwers walking around this field melting the snow!





07

Image courtesy of Pixomondo

THE LASTING IMPACT

Jan Guilfoyle, BlueBolt

Game of Thrones gave us the opportunity to produce some iconic work. We got an Emmy nomination, and two VES wins and another VES nomination. It was such a tremendous achievement for such a young new company and got the BlueBolt name out there. Even now, years after having delivered Season One, it's still the one everyone wants to hear about!

Ed Bruce, Screen Scene

It's launched us into a world of bigger shows and budgets, which is great. Season One won us a VES award, the *Battle of the Bastards* episode won an Emmy, and since then we've contributed to many of the Emmy-winning episodes alongside Joe Bauer, Steve Kullback, and so many awesome VFX vendors. It has been a privilege. It gives our clients confidence, too, because to

them, if you're working on the show, producing that quality, then you can handle their project, regardless of budget.

“It's launched us into a world of bigger shows and budgets...”

Ineke Majoor, Iloura

The *Battle of the Bastards* episode, the Emmy nomination, and subsequent win is big for anyone, but for an Australian facility to produce such complex, amazing work surprised quite a few.

Sven Martin, Pixomondo

Game of Thrones made Pixomondo known for character work, and it's helpful in acquiring many new, great projects. Having the opportunity here in Germany to participate in something that's such a worldwide phenomenon is very special for us.

“ It’s the biggest TV show there has been. It’s impact is undeniable. ”

Sabrina Gerhardt, Pixomondo

There have been several visual effects Emmys that we’re happy to have won, and the VFX community always seems to enjoy hearing us talk about our work. You know, if you go somewhere and mention that you’re working on *Game of Thrones*, they’ll get immediately excited and exclaim, ‘Really? Oh, that’s so amazing!’ I feel very proud of it.

Matthew Rouleau, Rodeo FX

We were a small company trying to make a name for ourselves when we started on *Game of Thrones*. It offered us the biggest stage we could imagine to showcase our work. Once we finished Season Four and won the Emmy and lots of other awards with it, all of a sudden, more clients came to us; it was easier to find people who wanted to work

with us. It’s the recognition from this show that helped us to grow. I’ve heard people refer to it as the *Star Wars* of our generation regarding effects – that’s pretty big. It’s an honor to be part of it.

Ed Bruce, Screen Scene

I’ve worked on lots of different feature films and lots of other award-winning TV shows as well, but it doesn’t seem to matter. In any interview – even chatting in a pub – the third or fourth question is always, ‘So, you worked on *Game of Thrones*?’ It’s the biggest TV show there has been. Its impact is undeniable.

08

THE RECOGNITION

HBO's epic *Game of Thrones* has earned roughly 600 awards in a variety of disciplines.

In 2015, the show secured 12 Emmy Award wins out of 24 nominations, breaking the record for the most Emmy wins for a series in a single year. The following year, it broke another Emmy record, for most awarded scripted series with 38 wins.

To date, the six studios participating in this story have collected a combined 26 visual effects-related award nominations and wins at the Emmys, VES Awards, and HPA Awards, among others.



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