#### SHOTGUN

# Seizing the Story

How VFX is moving beyond green screens and garages to earn a coveted seat at the pre-production table. And why digital media creation is destined to lead the way into next-gen storytelling.

By Don Parker, Co-founder Shotgun Software

PLUS:

TIPS + TRICKS – INDUSTRY PROS AND SHOTGUN EXPERTS SHARE THEIR WORKFLOW SURVIVAL SECRETS ROLE REVERSE—HOW PRODUCERS, SUPERVISORS, AND ARTISTS CAN PREP FOR THE COMING CHANGES





#### **ABOUT THE AUTHOR**

Don Parker co-founded Shotgun Software in 2006 with a vision of developing a standardized production management and review system that allows creative companies to manage projects across global locations more collaboratively and efficiently. Today more than 2.200 creative facilitiesincluding Warner Bros., DreamWorks Animation, Framestore, Ubisoft, Microsoft, and Playstation-use Shotgun as it continues to develop. Before founding Shotgun, Parker was a Pipeline Designer and Producer for a Walt Disney Pictures production company, where he designed and oversaw the development of an animated feature film production management system and related tools.

#### COVER

Utopia behind warzone. Image Courtesy of Ryan Wai Kin Lam.

Digital portrait - Old Man. Image Courtesy of Valentin Erbuke. very generation has their list of movies that defined their youth. My list includes "Star Wars," "Blade Runner," "Jurassic Park," and "Schindler's List" (okay, and "Die Hard"). My kids' list includes "The Incredibles," "Harry Potter," and all the Marvel movies. These films have something in common–stories brought to life by the magic of VFX and animation. We're transported to far-away worlds, have unforgettable adventures, and meet magical characters and creatures who capture or break our hearts–or both.

It's no coincidence that many of us who were set on fire by these stories in our youth have dedicated our careers to working within that extraordinary union of story and digital media creation.



Although one person can write a book or a script, we all know film-making is a team effort, and that team requires fluid, real-time collaboration to do their best work. When this is really working, the team achieves "group flow"—a state of joy and excitement that comes with knowing you're doing career-defining work with a trusted group of peers, working at the edge of your ability, building on each other's ideas, moving around obstacles, and creating something magical that will have lasting impact.

The most incredible moments of my career have been moments of group flow. I'll never forget those projects, those groups of co-conspirators, and that feeling. Once you taste what is possible on a high-performing team, you know in your gut that working any other way is limiting your potential or the potential of the teams you lead.

And yet, many teams and organizations in our industry deal with unnecessary friction that slows them down and marginalizes their impact. Fragmented data, disconnected and misaligned teams, constant distractions, slow information flow, siloed groups, and manual low-level busy work all get in the way like a million little stop signs and speed traps. I've been on some of those projects too, and it's awful.

At Shotgun, we've had a unique view in the industry, working for thousands of teams on tens of thousands of projects, and I have noticed patterns that separate the high performing teams from challenged ones.

I'd like to share what I've learned about collaboration in our industry and how I see a bright future ahead.

Here's to the Crazy Ones

For me, the story begins almost 30 years ago in 1993 with "Jurassic Park," an "adventure 65 million years in the making." I vividly remember the experience of opening weekend—mind blown, pants peed. The dinosaurs were the living-breathing-spitting-stomping-hunting rock stars, and I was floored right along with the rest of the world.



The digital effects team at Industrial Light & Magic (ILM) who worked on the film, led by Dennis Muren, proposed computer animation for the dinos when no one thought that was possible. Steve "Spaz" Williams and Mark Dippé (also behind the VFX in "Terminator 2") thought otherwise and side-hustled a test that proved them right. I won't re-tell that story here, but this 10-minute episode of <u>"The Moments that Changed the</u> <u>Movies,"</u> made by The Academy of Motion Pictures and Sciences, captures this pivotal moment.

That crew at ILM, the "Toy Story" team at Pixar (1995), and many others that decade opened our eyes and showed us how digital VFX and animation—when employed in service of story—could captivate audiences around the world in entirely new ways. One has to think those teams of filmmakers, artists, and scientists absolutely experienced group flow. They certainly changed the industry and their films were huge creative and financial successes.

The digital gold rush began. But with that rush came problems that struck at the heart of team flow. It was from within this pain that Shotgun was born.

#### TIPS+TRICKS DOCUMENTATION

Documentation improves overall organization by better defining workflows and the expectations of each stage of production. Just the act of documenting and defining your process can actually lead to tangible improvements, whether you change anything right away or not.

While working with remote teams, use a centralized production tracking and pipeline platform like Shotgun to provide everyone more visibility and context on the project at large. But before buying new software or building a bunch of new tools, do some analysis of your current operations. Zero in on the areas where there is the most frustration, wasted time, or confusion, and prioritize those needs as you evaluate different solutions.

#### For example, ask yourself:

• Do we need faster on-boarding of new hires, partners, or vendors?

- Could we use a better reference when there is confusion about how something went wrong?
- How were our margins actually affected by last month's change orders?

As you continue to scale or take on more complex projects, re-evaluate documentation issues with a regular cadence and soon those sticking points in your production will be flowing smoothly.

## Scale Is Coming to Eat You

Teams in group flow are inspired by how the story is evolving and ready and willing to try new ideas. They are trying to work together to deliver the best possible experience with the time they have, dealing with a constant flow of constraints and challenges. You can't afford to slow this process down. You must go faster. Unfortunately, scale-related friction often log jams teams in the process. My first experience of this kind of pain was in 2003, when I worked on a 3D animated film for Disney called "The Wild," directed by Spaz from the ILM Jurassic Park team. I worked for his Producer Clint Goldman, and my job was to do whatever it took to help things run smoothly.

"Jurassic Park" had six minutes of VFX in 63 shots, whereas our film was 90 minutes long and 1,500 shots. The film was green-lit with no facility, infrastructure, pipeline, team, or established workflow. No problem. Those were the pioneering days where everyone built everything, so we went to work.

But as the team and project scaled, we quickly ran into some of those speed traps. Suddenly everything seemed extra hard, slow, and complicated. Ideas were lost, communication was sluggish, artists were stuck doing manual tasks—"Save the file *where* and call it *what*?" We were bogged down in the logistics. It was like we had been sent on an important, once-in-a-lifetime mission but were stuck in a massive traffic jam.

But instead of road rage, that team would have flashes of what we'd call "production rage."

FRICTION	NEEDED SOLUTIONS
Fragmented data	Track essential data centrally in a unified system that's visible to all
Disconnected teams, slow information flow	Ensure production and creative teams can see the big picture while collaborating together on the details
Manual, repetitive tasks	Automate away all non-creative tasks

## SUPERVISOR PRO TIP ELAD OFFER, SOBONI FILMS

"As a supervisor, to be able to draw a particular creative vision on pictures is most useful. For an indie film, I typically give more than 1,200 notes and there are even more that come in from VFX studios who also have standardized their pipelines on Shotgun. By the time I finish giving notes on 20 shots, there are already another 30 uploaded." We all busted our asses to succeed despite the challenges. I don't think I've ever seen a group of people work that hard for so long. I remember a few moments some years into the project where it felt like the system finally started working; people were leaning into the work instead of bumping up against it.

But a couple of years into a three-year schedule was too late-we didn't get Spaz and team the tools they really needed fast enough. They couldn't visualize their film early enough or chase down new ideas late enough. The logistics of scale got in the way of team flow. I don't think Spaz and his team made the film they wanted, and I felt a bit responsible.

That left us wondering: Are other teams struggling with these same issues? Could we take years off the tool development timeline and help them find their flow much earlier in time to make a difference?

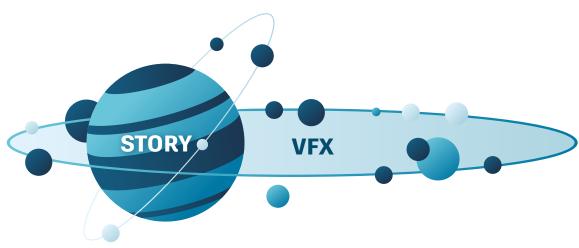
In 2007, we started a company to find out. We chose the name Shotgun because we wanted to bring an explosive, complex process together and give it speed and direction.

Then production went global.

## The Big Digital Bang

"Jurassic Park" was the highest grossing film of all time back in 1993. Twenty-three years later, it is the oldest film on the top 50 highest-grossing films of all time, a list of billion dollar franchises now dominated by films that are filled to the brim with VFX and animation, including the two "Jurassic Park" sequels.

<u>The No. 1 film on the list is "Avengers: Endgame,"</u> a VFX juggernaut with 2,500 of 2,700 shots containing VFX.



## Great Strides for Supervisors

## A SEAT AT THE TABLE WHEN IT REALLY MATTERS

VFX and animation supervisors are seasoned industry professionals who cut their teeth as artists and now lead creative teams. They're cinephiles and technical magicians who deeply identify with projects and strive to motivate artists to deliver the best creative given their resources. Partnering with their producer, successful supervisors know how to deliver the creative vision while keeping the studio in the black.

#### **TODAY'S CHALLENGES**

Time and resources are always in short supply for a supervisor, who must manage lean budgets and schedules along with constant changes in both project scope and shared resources in the studio.

#### SUPERVISORS OF THE FUTURE

In the works right now are major industry shifts that will increase flexibility and scalability in the hands of a supervisor, who will continue to move upstream in the process and have more impact on story development.

And as virtual production emerges as an exciting industry trend, the role of supervisor will transition to a core creative storyteller alongside the cinematographer and production designer as the teams they lead will bring the magic of FX on set, including CG environments, world-building, digital character creation, and key effects. These efforts will culminate in real-time film-making with high-fidelity VFX captured on set in camera right alongside the elements of live action. This will ultimately bring group flow back to the process on set, but with the added magic of post.

The continued advancement of virtual cloud-based tools and systems will enable supervisors to work from any location with unlimited access to resources of all kinds on demand. No longer will they require access to on-premises infrastructure provided by major studios and vendors.

Security-enabled, cloud-based, industry-standard tools will enable supervisors to quickly scale up for any project workload and hire their preferred artists from a global pool of talent. Once again, the main areas of friction arose– fragmentation, disconnection, inefficiency. It felt like overnight, productions went global and the scale and scope of the work changed, often involving thousands across multiple continents and companies.

Tax credits and cost of labor drove projects out of single buildings and to teams around the world, further complicating collaboration. Supervisors who used to walk around and collaborate with their team at their desks and in daily reviews were now leading multiple teams on the other side of the world, typing out their ideas instead of free-flowing them interactively.

From our perspective at Shotgun, we watched as studios spread out physically only to inevitably take a painful hit in the area of collaboration. The spreadsheets convincing decision-makers to go global didn't include the hidden cost on group flow.

We were crushed after R&H declared bankruptcy in 2013 despite single-handedly delivering the incredible "Life of Pi," which racked up many Oscars, including one for VFX. An unfortunate side effect was that major studios further distributed project work across multiple VFX companies to limit their exposure of one company putting the film at risk.

Suddenly all the problems we faced previously that got in the way of our one-studio teams seemed to be magnified with this global multi-studio expansion. And once again, the main areas of friction arose–fragmentation, disconnection, inefficiency. All problems we were focused on solving.

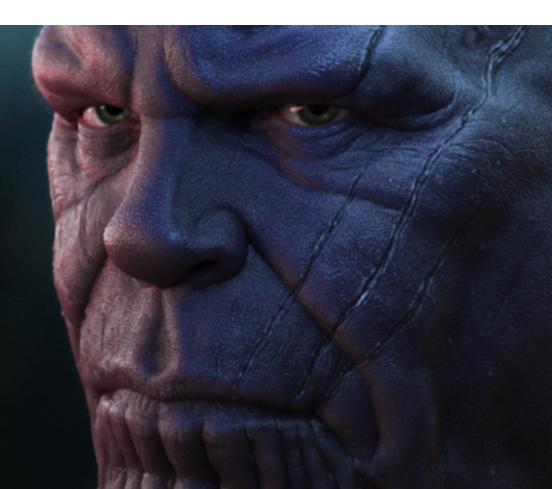
Shotgun allowed studios to track essential data centrally in a unified system visible to all, ensure production and creative teams can see the big picture while collaborating together on the details, and automate all non-creative tasks. We built these features by working in close collaboration with hundreds of studios, and it's no coincidence they remain the core functionality of Shotgun. And even as the complexity and scale of projects and technology continues to grow, our team of production and workflow specialists help studios sort out pipeline problems every day.

We're now preparing for what comes next.

Thanos Fan Art. Image Courtesy of Vladimir Minguillo.

### TRICKS + TRICKS FOCUS

When you're at the "virtual studio," don't be afraid to signal to your coworkers when you're focusing. If you're all communicating on Slack, make use of statuses (:headphones: for example), and by all means, use the "away" feature. Don't feel pressure to always respond immediately, therein lies the madness.



# **VFX Producer Redux**

#### GOING FROM GATEKEEPER TO CREATIVE PARTNER

At their core, VFX producers are film buffs who possess an eye for visual beauty and an equal measure of technical know-how. They just happen to be organized, business oriented, and fantastic communicators. Their passion lies in helping creative teams bring stories to life–all while keeping both the schedule and budget on track. Traditionally, VFX producers have served as tactical information wranglers for creative teams. They are responsible for managing massive amounts of project data, artist tasks, and notes. They must keep the lines of communication flowing among team members to keep productions on track. As project complexity grows and production teams scale, the success of a project balances precariously between efficiency and creativity–all in the hands of the producer.

### TODAY'S CHALLENGES

But all too often VFX producers become bogged down with outdated processes and overwhelmed by the sheer volume of data they must manage and understand. The manual labor involved in organizing, tracking, and analyzing all production information can result in critical inefficiencies, including:

- Limited opportunity for innovation once a production plan is in place
- Inaccurate assessment of cost and scope of work when placing bids
- Unreliable risk assessment and management
- No agility to change direction quickly and easily

Under the prevailing fixed-bid system in VFX and animation, a big part of the VFX producer's job is to ensure that projects are delivered on time and within budget. When clients or creative leads propose new ideas midway through a project, the VFX producer is the gatekeeper who manages those change requests to keep the project on track and protect the studio's alreadyslim profit margins.

When it comes to placing bids for the new work that's added midstream, VFX producers have traditionally relied upon their previous experience and gut-based insight to break down shot costs. But these days that method of budgeting is nearly impossible to accurately quantify on the back end. Bids that are placed using a *perceived* shot cost based on their previous experience tend to be less accurate than those based on *actual* time and spend of previous work.

In addition to the guesswork of the bidding process, VFX producers frequently rely on their intuition to make key decisions throughout production. In doing so, they may hinder the creative process or unknowingly put studios and projects at risk. Often they're forced to manage "scope creep" blindly by sorting through massive heaps of data with no method for organization or analysis.

## PRODUCER PRO TIP MICHAEL PECCHIA, AARON SIMS CREATIVE

"We request that everybody be at the table during the planning process—the director, producer, DP, VFX supervisor, production designer, costume designer, and costumer. Then, once we start breaking down a script, everybody weighs in with their solution and then we look toward the director for how to accomplish the vision. When we're all in one page and we're laying it out together, there's a lot less friction."

### PRODUCERS OF THE FUTURE

Starting now-and at an increasing rate in the not-so-distant future-the role of the VFX and animation producer will transition from information wrangler back to creative partner. VFX producers will use automated production data analytics to be creative problem solvers; they will accommodate change throughout the production process and welcome new ideas and innovations while simultaneously keeping business constraints in mind. In fact, the ability to use data analytics, automation, and A.I. to enable flexibility for dynamic change will be the new status quo for VFX workflows. This will provide producers with agility so directors can achieve their creative visions and do their best work.

To encourage creative agility, producers will be able to transition from a fixed to a cost-plus bidding model. This will better align both client and vendor to use available resources to achieve the best final result. Then the conversation between both parties will shift focus from "what was initially agreed upon" to a more complete examination of the overall creative vision. Once that shift is made, mutual decisions will be based on necessary production-wide trade-offs to execute the entire project as efficiently as possible.

VFX and animation producers will place more accurate bids upfront based on hard evidence rather than anecdotal experience. Using data from automated platforms, they will bid with confidence and easily run through a range of different production scenarios to analyze cost, quality, and risk profiles. For example: Does it make financial sense to work with a local Los Angeles team so that artists are in the same time zone as the director; or would it be beneficial to shoot in Atlanta to take advantage of the state tax credit? With accurate, automated data upfront, VFX producers will be less likely to put a project or studio at risk.

In the past, massive amounts of data have caused projects to get lost in complexity, causing VFX producers to make critical decisions based on just their gut feeling. But in the future, new pipeline tools and standardized workflows will help organize and mitigate chaos, enabling teams to better analyze and understand data for accurate risk management. When inevitable requests come in for additional money to test out a new idea or extra time to develop a key sequence, VFX producers will be able to make decisions with more accuracy and accountability without crushing creativity. These new methods will protect their creative teams from "scope creep," while simultaneously keeping all involved in a project apprised of plan and resource revisions.

Successful VFX producers of the future will build their reputations by using technology to demonstrate strong leadership skills, healthy respect for creative teams, and better management of client expectations. A new wave of production management tools will enable producers to reinvent the way they work to:

- Create and build virtual studios and teams around the globe that operate with zero downtime
- Standardize workflows and processes to maintain project-to-project context and consistency
- Bid and schedule projects quickly and accurately using automation and artificial intelligence

An advanced platform for data organization and production management will lead the way to support the producer of the future and enable key production stakeholders to help teams focus on creative innovation.



## Cloud Is the Key to Next-Level Innovation

Successful studios have these workflows figured out within their brick-and-mortar facilities, but many still struggle to ramp external teams up and down quickly or collaborate across studio lines with clients or partners who have built their own custom workflows and pipelines. However, the Covid-19 pandemic has pulled forward and accelerated the push for cloud-based pipelines and massively distributed teams, providing a major opportunity for our industry to address some of the key friction points in the way of group flow.



#### TIPS + TRICKS PROCESS

Pipelines in studios require that content be submitted in very specific ways to make sure the work keeps humming along. Step outside of it and suddenly your work isn't reviewed, deadlines are missed, and-next thing you know-a key character disappears from the approved render and that version makes it into the movie.

First, map out your workflow and ask yourself what information is most important to track? To set up best practices guidelines, get an idea of what information

- is coming into your studio
- you want to track
- needs to go out of your studio

Now that everyone is leveraging the cloud and refactoring pipelines to accommodate this year's unique challenges, we must build on the momentum of studio-led projects like USD and come together to define and adopt standards and protocols across key workflows that impact collaboration. If we just lift and shift custom workflow and pipelines to the cloud, we miss a tremendous opportunity.

There are three key workflows that can be networked in next generation production:

#### **1. BUSINESS PROCESSES**

The realm of the producer includes bidding, budgeting, reporting, and tracking across studio lines, making it easier and faster for studios to win business, find partners, staff up teams, and gather insights on project and studio efficiency and creative agility.

#### 2. REVIEW COLLABORATION

Anyone on the project with permission can see the latest work in context of the latest cut, across multiple teams, disciplines, and company lines and with the ability to visually collaborate and express creative ideas in context of the work itself without losing rightbrain creative flow.

#### **3. CONTENT CREATION**

This is the most challenging and will take the longest, but eventually studios will be able to send many assets back and forth, reuse existing assets, and plug into a global workforce of distributed artists who can quickly get up and running on a production with all the tools and data they need.

Fact is, all three of these workflows are actually networked today through massive manual effort and lots of hand-holding. Our industry makes it work by throwing people at the problem and squandering our most precious resource-human imagination. Now is our chance to change that.

To be clear, this is not to suggest that each studio will use the exact same workflow and tool-set. This industry is based on constant innovation and that must continue. But there are significant creative and business advantages that come with connecting some of these dots. Like a studio API, each studio will be able to securely move key data back and forth as needed and permitted.

Making these cross-studio workflows seamless will provide major collaborative value to the studios; VFX and animation companies; and the independent gig economy of artists, supervisors, and producers.

# Artists Go Free-Range

### UNINTERRUPTED CREATIVE FLOW FROM ANYWHERE

Artists are the central heartbeat of any production. They've grown up watching films and playing video games and have decided to turn their passion into their career. They tend to be a young and global workforce with technical aptitude and a fierce dedication to get their best work up on screen. They are fast studies, ramping up quickly on technique, storytelling, and communication. Those who earn the trust of creative leadership will demonstrate the ability to effectively translate direction into emotion-provoking visuals. Successful artists earn a solid reputation for their ability to rapidly iterate and deliver high-quality finals that please the pickiest supervisors and directors.

## HISTORICAL CHALLENGES

Major VFX and animation facilities traditionally have invested large CapEx expenditures for infrastructure, software, and technology, often requiring artists to relocate to brick-andmortar studio locations to work on top projects. Massive physical infrastructure benefits studios that have a large pool of artists on staff; but this often prohibits talent from freelancing, working remotely, or picking up additional gigs.

Since delivering quality work as swiftly as possible is a key component in building an artist's reputation for securing promotions and future jobs, artists who rely on a studio's physical infrastructure and on-premises workstations also sacrifice work-life balance and lose exposure to new collaborators. They often work late or overnight to impress their supervisors with the next day's dailies.



#### SUPERVISOR PRO TIP CHRISTIAN DEISS, MAGNOPUS

"For our business case, we identified 157 manual steps an artist has to execute in order to bring a model through rigging to animation; 108 of these steps were related to file management, clean-up, and quality control. With Shotgun, we were able to automate all of them and cut the manual steps by nearly 70%." Artists excel when they're able to maximize their time in the creative flow, uninterrupted by mundane tasks or "grunt work." The work suffers when artists are hindered by operational bottlenecks or inefficient collaboration processes. In fact, if artists are not able to spend the majority of their time focusing on creativity, their overall efficiency and ingenuity is severely inhibited. Freshman. Image Courtesy of Mohamed-Alsadany.

#### ARTISTS OF THE FUTURE

Virtual cloud-based technology will boost the gig economy and this will help creatives collaborate and work remotely from any location with a computer and Internet connection. Soon artists will experience a shift in power and benefit from increased control, flexibility, and access to projects.

As cloud-based systems continue to advance and prioritize security for global productions, studios will decrease the spend on the physical infrastructure that keeps talent on permanent staff. Artists will no longer be forced to live near major VFX hubs to secure top work. Instead, they will benefit from a thriving gig economy built just for creatives. Virtual studios will give artists the flexibility to work from any location, including their home. This will increase their worklife balance during production crunch times and expand the global talent pool.

With a more remote workforce, new solutions that foster collaboration for dispersed teams will replace in-studio meetings and review sessions. Fluid, real-time collaboration tools will help artists instantly align with the overall project goals, receive timely feedback during review processes, and input new creative ideas throughout production. No matter the location or time zone, artists will have consistent access to collaboration with team members, supervisors, and producers. Without physical perks, creative leadership will need to nurture morale and keep up momentum with deeper, more contextual levels of collaboration.

The VFX production industry will shift toward standardized workflows that will enable artists to seamlessly transition from one project to the next—and even between studios—without needing to learn new systems. Artists of the future will be able to plug in remotely and have full access to whatever tools or configurations they need. This will provide them with new opportunities to easily sign on to multiple projects simultaneously with little setup to get up and running. A standardized system will enable artists to quickly get started, create and collaborate with team members, and share their final results.

Advancements in machine learning and A.I. will lead to the development of new tools that automate repetitive work. Creative tools will also continue to improve with new features to automate and help artists accomplish more work at a faster rate, ultimately freeing up artist cycles to spend as much time creating as possible. Finally, each artist will manage their own reputation virtually. Managing their own reels will deliver more opportunities for self-pro-motion and provide direct connections that will help secure future projects.



#### PRODUCER PRO TIP CHRIS NOKES, ROCKET SCIENCE

"Because episodic TV demands consistent scheduled delivery of complex VFX sequences, smaller facilities are required to be aggressive to compete with larger studios. At Rocket Science, as soon as we receive a plate, we'll often begin working on the shot before we've even finished bidding, because if we wait any longer, we'll fall behind."

## The Collaboration At Our Core

The promise of VFX opened up a huge number of stories that can now be told, but it also stretched and stressed the core collaboration of the filmmakers, completely changing the experience of collaborating on set.



Fantasy Elf. Image Courtesy of Jamie Janas.

There's no doubt, VFX and animation storytellers are gritty and resourcefulwe've always made it work through blood, sweat, and tears. But as the industry matures, something exciting is happening and we must seize the opportunity. Once we remove friction from within each studio, network the studios together, and automate away all non-creative tasks, we're actually poised to close the gap between shoot to screen.

There are many signs that significant change is coming. These are just a few examples of how the magic of VFX has joined and supported the storytelling team before and during the shoot, leading to rapid iteration, innovative problem solving, and a more dynamic group flow.

- For "Avatar" James Cameron looked through a screen in the motioncapture volume to see the world he is creating, with live mapping of performances to creatures and an ability to shoot cameras after performance.
- For "Gravity," Framestore built a light-box to transport the actors on set into space, inspiring incredible performances and producing interactive light in-camera.
- For "Solo," Rob Bredow and the ILM team built massive LED screens on set to transport the actors inside the millennium falcon into hyperdrive. Solo's wide-eyed reaction was captured by the DP in camera in an unprecedented way.

- For "The Joker," virtual production for the subway scene, enabled the actors, director, and cinematographer to collaborate and capture in-camera the look and feel of any subway.
- For "Mandalorian," ILM built out a set of massive LED screens that virtually transported everyone on the shoot to several locations from a single sound-stage.

And that's just the creative process. The production network will also change the way business is done, accelerating the bidding and reporting process, eventually opening up the opportunity to shift from the fixed bid business model to cost plus. Although controversial, this would align studios, storytellers, and the VFX companies to work toward the best possible outcome, welcoming new ideas regardless of the original scope.



## TIPS + TRICKS SHOTGUN SETUP

#### Ask yourself, what is our workflow? For example:

- How does our project start?
- What's the first thing that happens?
- Who are the key players for each phase and for each task?
- How does the data/information typically come in?
- How does it leave the studio?
- What tasks does the team spend a lot of time doing repeatedly?

The answers to these questions are very important for setting up an efficient production management plan. This information will also help you in the long run as your workflow evolves. To help visualize the issues, draw a diagram of how information flows through your studio.

This is the future we want, and the Shotgun team is dedicated to the mission and to collaborating with partners and our community of studios to get there. Our vision is to enable teams to bring stories to life that captivate and inspire the world.

Our industry is growing up and taking big steps forward. Cloud computing, open platforms, real-time technology, and the push to adopt standards are driving us towards a production network–fluid, fast, and distributed–that allows filmmakers to build teams and go chase a mission together.

In a way, this form of collaborating will bring us full circle, back to how live production has worked for decades: A story is developed by storytellers and green-lit, then those storytellers amass a cross-functional crew that goes to creative "battle" together to bring that story to life via fast collaboration, relentless problem-solving, and group flow. Once the project is wrapped, the team disperses and reconfigures itself around other projects. This shift will be good for studios, producers, supervisors, and artists. And this model will not only be great for the VFX industry, it will be great for all storytellers and for a new generation of viewers, eager to be captivated and inspired.

Join us. SG

For more information, go to shotgunsoftware.com