Welcome to the Event Tech Podcast, where we explore the ever evolving world of event technology every week. This show is brought to you by Endless Events. The event AV company that doesn't suck. Now let's talk tech.

Brandt Kruger:
Hello everybody, and welcome to another episode of the Event Tech Podcast. I'm Brandt Kruger, and with me as always is Will Currant.

Will Curran:
You know I'm always so happy to be here Brandt, the very, very bouncy Bent Kruger, so excited. I'm really excited for this week's episode, because we're talking about something a little bit in depth that everyone in the audience wanted to see a little bit more of.

Brandt Kruger:
I am so digging on it. We are being joined by two folks, Donnie Nufus, and Tyler Gates from Bright Line. Bright Line if you haven't heard of them. They are an immersive technology company that creates experiences, and simulations for commercial, for the military, for the government. All kinds of clients. Put simply they do cool stuff. We're really excited to have these guys on the show today. Donnie Nufus Senior Vice President of corporate partnerships, hey thanks for joining us today.

Donnie Nufus:
It is my absolute pleasure, Will and Brandt, so glad to be here.

Brandt Kruger:
Tyler Gates, owner and principle of Bright Line, thank you for joining us.

Tyler Gates:
Thank you guys very much.

Brandt Kruger:
Those of you who listen to the Event Icon's show, our sister show on the Endless Network. Donnie was actually on our E-Gaming show, where we talked about the E-Gaming event's resolution episode 113 back last year along with Kim Meltzer, and Joe English. I heard Donnie, you guys have actually become pretty good buds after that show.

Donnie Nufus:
We're like totally besties now. As a matter of fact Kim, Joe, and myself ... Joe actually contacted Kim, and me, and we actually spoke at the E-Sport's Business Summit together. We got the trio back together, and actually did a presentation on fan engagement in the E-Sport's space. Soon the t-shirt will be out with our tour dates, and yeah you've created a monster.

Brandt Kruger:
Nice, nice. Event Icon's bringing people together. We'd like to buy the world a coke, all that kind of good stuff. All right, before we get into what you guys do over there. We want to kind of remind everybody that you are still working for PRG Donnie at the time when you were on the show last time.

Donnie Nufus:
Yeah.

Brandt Kruger:
A lot of folks know the name PRG, giant production company doing stuff all over the world. Tell us a little bit about the transition of how you came to meet Tyler, and suddenly find yourself working there.

Donnie Nufus:
Yeah, so you can tell a lot about a person when you first meet them. The character of this fine gentleman Tyler Gates, this story really embodies what a good guy he is. Imagine if you will you're at the Superbowl, Superbowl 50, and you have flown in a large potential client that the company is spending a lot of money on entertaining, with the hopes of showing them the work you do at this massive event, so that they will then in turn give you their business. Weeks of planing. Lot of money laid out to get this done, and you show up to this massive party that you're doing for Budweiser, for whatever USA, or they took over this ... They took over Union Square in San Francisco to throw this massive party. You're there with the client, and your colleague pulls you aside, and says, "Hey by the way Bobby who is supposed to give the tour. Yeah he had to put out a fire, so he can't be here, so good luck."

Donnie Nufus:
Suddenly you're standing there with the client, and you have no idea what's going on there on site, and you have to give them a tour. There I am with this potential client, kind of pointing and saying, "Well that's a light, and that's a speaker." Yeah pretty neat.

Tyler Gates:
This is a relatively complex onsite installation here. There were 11 interactive experiences. We had tents, and we had these mechanical football sleds with infrared sensors. It was a relatively complex set up to Donnie's credit.

Donnie Nufus:
I am standing there panicking trying to not show it, and this nice young gentleman walks up and says, "Hey you guys want to see some of the interactive experiences here? I can show you them." I said, "Yes please. Oh my God please yes. Show us these experiences." The nice young gentleman is this man Tyler Gates, and he proceeds to show the clients all of these amazing 360, AR, like all these very cool things that they build on site. After the first experience he pulls me aside and he goes, "So are you with Bud Light?" I said, "No I'm with PRG." He

goes, "Who's PRG?" I said, "We're the ones doing all the production." He goes, "Okay I got you."

Donnie Nufus:
He then goes on to show us the other experiences and he's like ... With our partnership with PRG, they allowed us ... I mean just saved me. Absolutely saved me. Afterwards I hand him my card I said, "First of all the stuff that you built is incredibly impressive. We need to talk more. From that a friendship, and even a partnership was formed from that moment. We have been great friends ever since. Actually I ended up bringing Bright Line in to be our immersive technology partner at PRG.

Donnie Nufus:
You didn't know me from anybody else, you just absolutely saved me. That's how Tyler and I have become fast friends.

Brandt Kruger:
Fast forward a little bit, and now you have become a part of that company.

Donnie Nufus:
Yeah. We've known each other a long time, and specifically in the technology space, and really it is that immersive ... Everybody is trying to talk about innovation, and engagement. How do you do something to engage the audience more, and to measure it, and things of that nature. Really I kind of reached a point where my interest, and my passion is really in that immersive technology, the digital space. I just think there's just so much potential with what you can do with the hardware, and the software that's available these days to really fundamentally change the experience of an attendee, or a fan at a sporting event.

Donnie Nufus:
I kind of reached a point where I was really kind of looking for that next thing. How could I work a little more in that space. I had been doing E-Sports for a long time. You want to talk about digital, and fan engagement on steroids. I really was kind of looking for where is that perfect fit for what I'm passionate about. I actually called Tyler to talk to him about some other agencies I was interviewing with. Two weeks later Tyler called me and he said, "Hey there's some really exciting things happening at Bright Line. I could use someone like you. I could use your help. Would you like to come over?"

Donnie Nufus:
He didn't even have to finish the sentence and I was like, "Where do I sign? Yes I'm there." To work at a company that quite literally is inventing technology, is kind of like the ... In the military space Bright Line is the company for training simulation, AR, VR. They are the household name for this type of technology, to work in that type of an environment. I mean I jumped at the chance to do it.

Brandt Kruger:
Wonderful. I think that's a great set up to get us into ... Tyler turning it over to you. That's quite an introduction as far as who you are, and what you're all about. Why don't you tell us now about Bright Line. What it is. How you got started with the company, or how you started the company I guess would be a better way. Maybe a better question would be how did you find this passion for this technology, and the starting of the company, and what you guys do? That was a lot of questions dropped into one question, so the floor is yours.

Tyler Gates:
Bright Line as a company is actually almost 16 years old. We started in the early 2000s and I actually did not start the company. The company was started by my business partner Eric Mondell. We started actually in the military, and government space. We were making a lot of simulation, and training, and strategic communication style technologies for the government. At the time it was referred to as emerging technology, but it was really sort of trying to take technology beyond the ... Some sort of web based simulation.

Tyler Gates:
We were doing a lot of stuff with gesture, gesture technology with infrared sensors, and depth cameras. Even before Microsoft made it popularized with the Connect. We were doing a lot of sensor tracking, and object tracking, and things like that. Now what we call body tracking, and face tracking, and those sorts of things. We were doing that for the military, and government customer. Again mostly not for a marketing purpose, except for in a couple of cases, for some of the military branches for recruitment.

Tyler Gates:
But for the most part it was all military, and government. We only got into the branding space, the commercial brand space sort of activation events, because we had a military customer that was actually activating at NASCAR. That started our ... That was our fore into activating at sporting, and entertainment events. We realized at that time that that was going to be ... It was developing, it was space that wasn't ... For the most part experiential marketing was more about passing out free t-shirts, and doing product samples, and things like that.

Tyler Gates:
At the time technology wasn't such a big part of an event activation footprint. But we knew that that time was coming, because the technology was ramping up. We were able to now do things like doing gesture technology with commercially available hardware in the Microsoft Connect. We were doing a lot of touchscreen, and transparent touchscreen, and then a lot of social media driven experiences. That was something else that was happening sort of conCurrantly was that Facebook left the college campus, and brands started to care about likes on Facebook at the time. That was the big craze.

Tyler Gates:

It was really just about sort of turning the customer into a third party brand ambassador, and we knew that we would be able to do that with some of these advanced technologies that we had been working on in the government. We made the shift after some significant budget cuts that went on in government around that time frame, around 2009, 2010. We made the shift into the commercial brand space, and started right at the top. To be quite honest, we started working immediately for our clients, which are predominantly are the agencies of record for Fortune 500, Fortune 100 brands.

Tyler Gates:
We started working with MKTG, and with Wasserman, and Sports, and Entertainment, and Geometry Global, and some of the others that are out there. We were basically the production house for these agencies. We were just sort of cranking out touchscreen applications, social media driven experiences, gesture, object tracking, face tracking, doing face filters. I mean all that type of stuff, but it was all very tailored to the specific client, to the specific event.

Tyler Gates:
It wasn't until around 2012 that we actually started getting involved with virtual reality. In the early days of virtual reality, and oculus rift with the DK1. The first developers kit. In the same we realized well this technology, although it's not there in terms of the hardware at the time, and in terms of people's awareness of the impact of this technology. We could see well ahead of time that this technology was going to be a big deal in the entertainment, and event's space, as well as in the sort of the more enterprise brand, and military and government space.

Tyler Gates:
We doubled down hard, and started hiring Unity 3D developers, and started transitioning to making in house applications for virtual reality. Then we made our first large scale VR application in the beginning of 2014 for Toyota. We did a lot of simulation type stuff for them. We put sensors in the steering column, and in the gas and brake of the actual car, and let you control the car in the virtual space by using the actual, physical car. Things moved on from there.

Tyler Gates:
We've done lots of other virtual reality projects, as well as other technology things at the same time. It's really been about ... At this point for us it's about how can we create platform based technologies that brands can scale across all of their events over multiple years, and still engage the fan in a way that is significantly more powerful, then the ways that we were doing with technology five years ago.

Brandt Kruger:
I've got the website up right now, and it's easy to get lost in the whole thing.

Will Curran:
Oh my gosh yeah all the cool things that you guys have done.

Brandt Kruger:
Yeah. We'll drop the line in the show notes, but it is brightlineinteractive.com. Go ahead Will.

Will Curran:
I just want to know about all of the cool stuff that you guys have done. It's always so exciting to hear. I think that's one of the biggest things that people when they talk about virtual reality, augment reality, and technology. It's like, "Okay cool, that's cool, but how does it implement into events. I'd love to hear from you guys, maybe if you guys want to do a kind of quick back and forth. What is some of the cool that you've done that you've been the most proud of.

Tyler Gates:
Yeah I would say that probably one of the coolest activations that we've ever done was for Marvel, and it was for Avengers. It was a little bit of a different activation if you will, because it was ticketed, and it was in Times Square in New York City, and it was live for almost a year. It was a long term to do a brand activation, and one that had the amount of technology that was in there.

Tyler Gates:
We had over 25 different experiences that were inside a 10,000 square foot space. We basically recreated the Avengers, what we called Avengers Station. This was where all of the agents of shield worked, and hung out essentially. It was all a movie set. It was built out like the actual movie set. There was a room for each of the four main characters. There was a room for Captain America, a room for The Hulk, a room for Thor, and a room for Iron Man.

Tyler Gates:
This is still even before a lot of the ... This was for Age of Ultron, the second Avengers movie. This was before some of the other characters had been introduced, but what we did, inside each room was allowed the fan to become an agent of shield. They actually got an ID badge with their picture on it, with their registration code. They used to scan in essentially to each of the experiences inside the space.

Tyler Gates:
In Captain America's room it was all about comparing your strength to Captain America. It was a lot of biometric sensor data integration. We had grip sensors. We had force pressure sensors in these hand bikes. We were doing biometrics on your height, and on your reaction time, a bunch of different things like this to compare your strength, and ability versus Captain America.

Tyler Gates:
Then in the Hulk room it was a bunch of show controllers, and lighting, and screens. That was a lot of the effect that was in there. We had an eight foot tall projected Hulk that we actually created, using the graphic content, using graphic assets from Marvel we created and animated The Hulk which was a lot of fun. That room it was all about teaching you from a science basis

how ... It's obviously fantasy, but Stem was actually really involved in this whole program, because they wanted to help teach kids the fundamentals of science, and of DNA, and they used the backdrop with The Hulk to be able to do that. That's what we did in that room.

Tyler Gates:
Then Thor's room was in partnership with NASA, and the jet propulsion lab. It was all about, again using the sort of backdrop of Thor, being from Asgard, then it's kind of explaining planetary solar systems, and things like that.

Tyler Gates:
Then the final room was for Iron Man. In that room we had a gesture experience where you could put on the Iron Man suit using the Connect Gesture Camera. You could fly around inside Tony Stark's lab just using your body, which was a lot of fun. We had a robotic Iron Man arm that was controlled by the lead gesture sensor. You could move your hand in any direction, and the robotic Iron Man would mimic all of your movements. It's kind of like a test laboratory kind of thing.

Tyler Gates:
Then probably my favorite experience in the whole space. It's often times the ones that are so highly technical that deliver the sort of magic surprise, and delight experience to the fan, that go the most sort of I would say unnoticed, because there's so much technology that's going on inside this one activation, this one experience, that most people would look at it, and not know exactly how we're doing it, which is kind of the goal, especially in an environment like this.

Tyler Gates:
What we did for this one is actually Marvel wanted us to recreate the Heads Up display to mimic the Heads UP display of Iron Man. If you've ever seen it in the movies. There's a lot of different ways that it's represented. But really the biggest thing is they wanted to be able to have the cross hairs be controlled actually by the user's eyes. Then we wanted a way to kind of fire from the Iron Man suit. That was a lot of fun, in incorporated biometrics. What we did is we combined eye tracking with electroencephalograph sensors.

Tyler Gates:
We used EEG sensors to know when you were double blinking. So just rapidly blinking twice. We could tell that with the electroencephalograph sensor. Then wherever you looked on screen, we were actually using eye tracking to know exactly where you were looking. Wherever you looked the cross hairs on the Heads Up display would go, and then you double blinked to fire from the suit. Then on the screen you're doing this little test mission. You're firing at objects in the sky, and things like that.

Tyler Gates:
Again to the fan it just delivers this experience where they just go in, and they're controlling Iron Man's Heads Up display using their eyes only, and blinking. It was obviously very magical to the

fan, but it was very, very technical on the back side trying to figure out exactly how to do that. By the way we had to do all of the production for this in under two months. It's just a lot of technology in a short period of time.

Will Curran:
Wow.

Brandt Kruger:
Yeah no kidding. On the website you have a picture of what I'm assuming is the back control room, and there's an awful lot of Red Bull on the table, as far as everybody putting it together.

Will Curran:
Wow. Real quick. Obviously when working with a client like Disney, Marvel. They're obviously going to be pushing the envelope in one ways to do that. Did you guys find it difficult that they were just like, "No more. No more." That's where you got to these levels where like double blinking means fire. How did you get to that level of craziness?

Tyler Gates:
It was really actually driven by Marvel. I mean it was Stan Lee's actual ... Stan Lee wanted to bring his characters to life. That's what kind of started the whole thing. Marvel Avengers, and there's a couple of other ... There's actually a couple of other licensed properties out there. There's one in Vegas that's doing ... It's essentially what we built, but it came out as we want to give the fan the experience of being an avenger, or at least being an Agent of Shield. In order to pull that off at the same caliber as these movies deliver in terms of excitement, and experience, and awe, and magic, and those sorts of things. We really had to push the envelope. We knew that from the beginning, that this was going to be ...

Tyler Gates:
I often say it, it was sort of like a technology kitchen sink project. It was anything, and everything, and all ideas were on the table. We actually got the space plans, the space designs, because again we were actually working with the production studios. They were building the physical space, and we were working with them in terms of coming up with the creative for the experiences. It was really just inside each room there were a specific business goal, a specific target that they wanted to reach in terms of fan engagement, and fan experience.

Tyler Gates:
We just knew that the expectation ... Like you said, the expectation of Marvel was that this was the most incredible experience. This is the first time that Marvel had ever build something like this, something so interactive. We knew we had to really up our game. It was a collaborative, creative process though. We come up with an idea. When we're coming up with ideas we're not just coming up with pie in the sky sort of ideas. We're coming up with ideas where we know we have three months of production, and we have a limited budget, and it has to fit inside a very specific space requirement.

Tyler Gates:
There's a specific load on all of these machines from a computation perspective. Then we also have to deal with the fact that we're going to have everyone from third, and fourth graders in there on school trips, to older demographics who don't have as much exposure to things like gesture technology, or lead gesture sensing, these types of things. We have to come up with ideas that are going to fit all of these different parameters, and check all these different boxes. Yet at the same time it still has to be insanely impressive.

Tyler Gates:
I would say that in general it was a back, and forth where we actually ended up being on the side of coming up with things that were incredibly inventive, and it was really more our client that at times sort of pulled us down into more of reality in terms of their budget, and things like that. It was a lot of fun, I'll say that.

Brandt Kruger:
It sounds like the nice combination that we often get in events of incredibly fascinating, and fun, and terrifying at the same time.

Tyler Gates:
That's right. Those are the best kind though.

Brandt Kruger:
Yeah how are we going to pull this off?

Tyler Gates:
Yeah, yeah.

Brandt Kruger:
Donnie I have no idea why you would be even remotely interested in working for a company like this. This doesn't sound interesting, and fun at all.

Donnie Nufus:
You know when you and I met I was hawking that live streaming stuff, that content capture stuff. I remember at the time. I was kind of re-counting this to Tyler. How 10 years that was scary, and that was innovative in the event industry, and people are like, "If we put a live stream, nobody's going to come to our event." To come this far in technology, that we've reached this point in time. I count myself incredibly blessed that I'm living during this time, and to be a part of these type of minds that create this type of technology experience in the means, and events space. It's the best time to be in this space. It's the absolute best time.

Donnie Nufus:

To Tyler's point, just the ... Obviously I'm a gamer, and all that stuff. I thought I understood virtual reality, but to actually be behind the curtain, and to see the things that very few people are aware, that is available right now, and for the price points that is ... It is actually affordable to do. I feel so incredibly lucky to be part of this organization, and I'm happy to say that this week I worked with Tyler on some concepting things. I was able to come up with some ideas, and I was so proud of myself, that I was able to throw out ideas there of things that did not exist, but were possible to do with this technology.

Donnie Nufus:
It is a very exciting, and almost liberating type of feeling for us who have been in the event technology space, and have been, I don't want to say limited, but just kind of ... We've stayed in our lane for such a long time. That is no longer really ... The budget is always the big thing. That's no longer as much of a constraint anymore, because the technology, and the hardware has come so far.

Brandt Kruger:
You said the B word, and also the A word. You said budget, and you said affordable. I want to get into that. Before we do, I just want to give you the opportunity, I know you've only worked for them for a few months at this point. But maybe stretching back into your PRG days, was there one experience that you saw Donnie, that you thought wow this is the coolest thing, or one that stood above the rest for you?

Donnie Nufus:
Yeah. Actually there's been several working with Bright Line. But when I was PRG we actually collaborated on an experience for the Experiential Marketing Summit. What we wanted to do was a the PRG booth with partnership, and with Bright Line we wanted to show VR, as everybody wants to show VR. But in true Bright Line fashion the leveled it up quite a bit, in the sense that one of the things about VR that is a real challenge is, unless you're actually in the VR experience itself, it becomes incredibly difficult for the rest of the audience who doesn't have the headset on to be able to understand what's going on in that virtual environment.

Donnie Nufus:
The traditional set up is that you're watching it on a screen what the other person is seeing. That's not nearly as compelling as having the headset on. What Bright Line ended up doing is they created a mixing ... It was as if you were in front of the mixing consoles for pyrotechnics, lights, and the soundboard. In front of you was a gigantic concert stage where you were actually controlling the sound, the lighting, the pyrotechnics, and all that. It had a big PRG logo in the background. What Bright Line, what my colleagues did so brilliantly is they created ... If you imagine a green screen environment. It was a cue that you put on the headset, and you walked in to the green screen environment.

Donnie Nufus:

Then they figured out how to put a sensor on a camera that would dictate the position of that camera within the 3D virtual environment, so that when you were watching the experience on the screen, you actually saw the person in the 3D environment, third person interacting with the console. You actually saw them in that rendered environment, which gave a whole new perspective. It's as if you were watching somebody in an Avenger's movie participate with that virtual environment.

Brandt Kruger:
Wow.

Donnie Nufus:
Which was such a cleaver way of ... Truly it was a combination of using VR, and AR together to show the content in a more impactful, and contextual type of environment.

Tyler Gates:
What that does too, I mean the reason why we did that is two reasons. The virtual reality is incredibly compelling in terms of a brand experience, and I'm sure we can talk about that later. The two main challenges with virtual reality at the time, now this was a couple of years ago, but the two main challenges were that virtual reality used to be very one to one, where somebody is doing something insanely impressive inside the virtual world, and they're moving their head around. Everyone else, it looks like they're swat net at a swarm of bees that nobody else can see.

Tyler Gates:
People are wondering what they're doing. What are they experiencing? What am I not seeing for myself? That is good in terms of that it excites people, and maybe makes them line up for your experience, but there so much more impact that overall in terms of from a brand impression standpoint, if you can make that experience one to many. Virtual reality is just difficult, because the screen that you're viewing content on is right in front of face inside these goggles. Nobody else can see the screen.

Tyler Gates:
We just wanted to figure out a way to actually capture the person, because the other way that people had kind of solved in short order was just to split the feed from the head mounted display to a TV, so you get this sort of like extreme POV version. It's like watching the Blair Witch Project. It's not a great experience for everyone else, because you're seeing their heads swing around, and being chased by something, or trying to weave their way through a tight hallway, or something like that. It's not a great experience.

Tyler Gates:
It's a lot more comfortable for the user to watch from third person. We wanted to figure out a way to achieve that, and we did. After we did that there's now actual support through a lot of the OEMs for virtual reality to actually now do that as a capability, which was kind of funny, and cool

to see. Then the second reason is because it creates a social media sharable. That's another thing that was missing from virtual reality.

Tyler Gates:
I remember back five years ago, or maybe four years ago. I climbed Mount Everest in VR, which is incredible. I was unbelievable. I'm a big outdoors man, and I love mountain climbing. I had climbed Mount Everest, and it took me 45 minutes, which if only right? But I had nothing to show for it. I had that experience, and I have that memory, but I would love to share with others about this experience. I didn't have a way to do that. We wanted to also figure out a way to do it.

Tyler Gates:
What we were actually doing was when we were capturing that footage from the third person camera. In real time we were compressing it down. By the time the user takes off the head mount of display and was leaving the footprint we already had the video compressed down with branded bumpers. They could share that on social media immediately of like look what I just did inside PRG's virtual reality experience.

Brandt Kruger:
That's really cool.

Will Curran:
I think that's totally true though. I mean in virtual reality there's so many times where people say, "Oh yeah I've totally experienced it." But really until you experience it itself, or specific activation, or game, or something like that. It really does an incredible job. Most of the time people are like, "Nah, not really for me, I'm not really interested." But then you kind of ... That's why I do my HC Bible. I'll say like, "Oh you've never done it before, you have to do it." They're like, "No I'm good." I'm like, "No once you do it it makes you want to buy one. The same thing goes definitely for that sharing element too.

Will Curran:
Yeah we've done before where you show a secondary monitor, and it's nauseating, it's boring to watch, but that third person view is super, duper cool. I'll link it down in the time line descriptions. You guys were obviously pioneering that way before everybody else. Now it's like there's a plug in you can install on your computer, and boom you can do this pretty easily. But it's crazy how like you guys were so ahead of the game.

Donnie Nufus:
Yeah, I mean well even before ... When we were doing that when HCC VIVE actually made what's called Vi Tracker. They actually make it that has the ... We can mount it right on top of the camera, and it looks clean, and it looks professional. But we were doing it before Vi Tracker. We had been working on that for over a year and a half. We were doing it before Vi Tracker. Before that we actually were just taking the Vi controller and gaf taping it to the camera, because there was no way to connect it. At one point we actually 3D printed a mount. It just

never really worked in production the way that gaf tape does. We just gaf taped to the actual camera. It worked great, it worked just the same.

Will Curran:
Wow. Savior of all.

Brandt Kruger:
One of the things that we really try to emphasize on this show is not just the pie in the sky, holy cow that's amazing. We really want to try and give folks that are listening an idea of how to actually implement this stuff. If we can kind of start to take the next step of maybe we don't have the budget of a Disney, but we're wanting to make a splash. Donnie you threw out the word affordable, I'm going to hold you to it. Let's start getting in to the practicality of this, of what does it look like if I want to try and bring this type of technology to my event? What are the things that I need to keep in mind? Then what are we starting to look at as far as possibilities, and actually implementing it?

Donnie Nufus:
I'm going to go take a crack at this as I have been under intense study for the last two months here, and then Tyler will polish the rough edges. But one thing that was a huge eye opening moment for me was the lens at which we look at VR under. Tyler is going to be so sick of hearing this, because I use it all the time, but I always talk about SOS, shiny object syndrome. I think one of the real problems is that people have been leveraging these tools under the wrong ... Thinking about it the wrong way. A lot of people will use a technology like VR, and they'll create a fun game, or a fun experience like that, that you go through it. It's really cool, and then you move on.

Donnie Nufus:
Really that is unfortunately doing a real disservice to the technology. Where what we have to start looking at this technology under the lens of a communication tool. In other words, I've done this exercise before at event technology meetings, or conferences where I've been speaking, where I will put up a paragraph description of an object. I will ask everybody to read the paragraph, and then to draw what it is describing. It takes people probably a good two, three minutes for them to draw what this is. Then I say, "Okay. Now I'm going to show you a picture of the object." I show them the picture, and it's a square. I say, "If I just showed you this picture, and said draw it, how much quicker would you have been able to draw this?"

Donnie Nufus:
The point being here is that there is a lot of the content that we deliver in the traditional meeting, and events space. I'm just thinking about for instance the medical space, where there are ... I've sat through plenty of medical meetings, where they're showing imagery, and they're showing reports, and studies of this research that they have done, and these techniques that they have developed to be able to save patients. Whether it be heart surgery, or that. It's one of these things that you have to ... It takes a lot of time for you to process that in that type of format.

What happens when you change it, and you actually put the person in the OR room, and they actually are watching a doctor do the procedure?

Donnie Nufus:
How much quicker do they understand exactly what is going on if they're actually in that experience? How much quicker do they retain, learn, and understand that information? Really that is ultimately what this technology is doing. This technology is allowing the ability to understand, retain this education, this information, the speed at which people are able to do that. It's speeding that entire process up incredibly quickly.

Donnie Nufus:
The second part of this is ... We were actually talking with a large industrial manufacturing company, that they build the inside of massive cargo ships. They actually have a cross section, a slice of this interior that they build for these ships that they ship around the world to trade shows. It's millions of dollars it costs them just to ship this thing around. It is of one representation of 150 different representations that they build.

Donnie Nufus:
For that same budget we could actually have people not walk through the cross section, but through all 150 ships. Not only that, it wouldn't happen at one expo. You could have 1,000 units around the globe that people are all experiencing these ships at the same time within that budget.

Donnie Nufus:
The point being here, there are a lot of things that are we doing as organizations to communicate what the brand does, what the service is we offer that are very costly, and take a long time to do, that VR for the same budget can communicate a lot quicker, a lot more effective, and reach more people giving you a huge return. The beauty is that it's not something you're putting on a jet and flying around. It's something you're carrying around in a case, and hand to them, where they can actually be in that experience.

Donnie Nufus:
That's the first. The second part is the hardware has gotten incredibly cost effective. The tools have gotten incredibly agile. For instance, and Tyler you're going to have to help me. But Unity 3D is what we build a lot of these things in, and it was just announced that Unity is partnering with Auto Desk. What's the file type?

Tyler Gates:
Revet.

Donnie Nufus:
Sorry Tyler, revet. Revet file are now going ... You're going to be able to take the Revet file from an architect, or design, or whatever, and literally drop it in to Unity 3D, and it will take that file

and render the 3D virtual environment like that. Think about this. Think about what we do when we are meeting organizer, and we are trying to select a space to have our meeting at. But then once we select that space, the dreaded site visits, or site visits, where everybody jumps on planes, and they travel there, and they take a week out of their time to visit the space. They try to imagine in their minds what it would look like if they did something here, they did something there.

Donnie Nufus:
They try to imagine where the traffic congestion might be with people coming in to the general session, and moving to the ... What if you are able to give a head mounted display that you ship to each participant, and remotely they were able to connect via Wifi, and all be in that virtual environment in real time, and seeing exactly what the environment would look like. Seeing exactly what the set pieces look like. Seeing exactly where the congestion ... Being able to run it through AI, and to see the traffic flow, and the patterns, and then being able to change.

Donnie Nufus:
Well what if we did the seating this way? What if we moved this there? In real time, and then seeing how that affects that environment. How much money are we saving, and time by just a simple tool like that? The implications of what this tools solves, being able to communicate things very quickly, it's an unbelievable, untapped power that the meetings, and events industry could absolutely...

Brandt Kruger:
You are singing my song brother. This has been a week for me full of VR and AR fun. We actually just got done recording an episode with Sandy at All Seeded who was working on this kind of technology on event icons. I am so bullish, like I'll be honest. I was kind of a curmudgeon when the first oculus and stuff came out. I was like, "Well this is kind of whatever." But as soon as I started thinking about how it was going to be on the backend. That's when I started to get ... It's one thing to have an experience on the side, where we put on a headset, and we do something, and then we're done.

Brandt Kruger:
We've had stuff like that. It's just an evolution of Gulf simulators, and things like that. Granted it's very, very, very, very cool, advances in those technology. But yeah when we stated talking about on the backend, being able to like you say visualize. If you've got five different sites, and you're able to eliminate one of them by doing virtual tours. You're saving potentially thousands of dollars, or depending on how many events you do over the course of the year, millions of dollars, and the ability to ... Environmental impacts, and then still ... You're still able to go and do the physical site visits.

Brandt Kruger:
Yeah the potential on the backend is absolutely phenomenal. I'm trying to dig up the actual episode number but I'm not good at typing, and talking at the same time.

Donnie Nufus:
Episode 161 I think.

Will Curran:
Yeah and actually Tyler I think a great example to give them is the project you were working on with the helicopter organization. Just tell them about that process.

Tyler Gates:
Yeah I'm set to speak about this one, it's super high level. Essentially the way that aircraft are made is that there is ... There's probably listeners out there who may criticize this, because I definitely do not work in the aerospace manufacturing industry. But generally speaking there is a 3D design. Then after the 3D design there are several versions of actual modular versions of the aircraft that are made, physically made. Part of the process is getting test pilots to just be, physically be inside the aircraft to give feedback on the ergonomics, on the site lines, on the functionality, and how wide does the door open, versus the gear that's going to load in and out of that actual aircraft.

Tyler Gates:
All of this sort of thing gets tested in the sort of like test fit scenario with a physical version of the aircraft. Then all that feedback is written down, and then taken back to the design team, and is spoken out, communicated out. Then the design team changes the 3D design. They may go through this process of building the physical mock version several times before they actually create a flight capable aircraft. To be honest in short it's just a lot of wasted time, and money nowadays, because now we have this technology that where we can take the actual model of the aircraft, the 3D model and drop it in to Unity 3D, and make a version of that aircraft that is deployable inside virtual reality.

Tyler Gates:
Then we can put the test pilots inside virtual reality, and have our design team at the exact time inside the same aircraft on Unity 3D in the design program. They can be giving feedback, and we're taking that feedback in real time, making the adjustments in real time, so that the pilot, the test pilot can confirm the adjustment in the same time section. There is no need to actually build this large modular version of the aircraft, and there's no need to take all of that time, of that back, and forth communication between what the test pilot say, and what the designers say, and how they can't make that design change, because of this part of functionality, but then the test pilot ...

Tyler Gates:
I mean there's a lot of back, and forth communication that's completely unnecessary. We can solve that for that communication challenge, as well as save a lot of time, and money by never actually having to physically create the real version of the aircraft until all of the design feedback is already settled up. I mean essentially in the construction space it's basically we don't have to

pour concrete twice, because we can know in advance what it's going to look like. Not just look like at this point, but we now know how the objects are going to behave in a modeled scenario.

Tyler Gates:
Then on top of that which we can get into if you guys would like. We can now understand the user's behavior as they're going through a virtual simulation. We can take all of that data, and either in real time, or after the fact, but in real time we can take that data, and allow that data to actually change the virtual scenario. The user's behavior, the capability, proficiency, and deficiency can actually affect the environment inside virtual reality. It's called affect computation.

Tyler Gates:
We're able to do that with virtual reality, so that you can make a simulation that is in fact responding to your personal decision making.

Will Curran:
That sounds ...

Brandt Kruger:
Mind blowing.

Will Curran:
... Absolutely amazing, but probably what I think are the planners might be like, "Whoa I didn't even know that was possible." Real quick I want to dive a little bit back into the getting started portion. What are you guys' recommendations for ... A planner that has never had an activation like this before. What are the small steps that they can ... Taking the baby steps into implementing this stuff into their events. They're not necessarily going to be running their entire event in Unity, everything like that. But they say, "Virtual reality is cool. How can I start utilizing it?"

Tyler Gates:
I would say that the first thing is like Donnie was saying. We say this often. Consider, a lot of people think about virtual reality as a technology. It certainly is that, but it's also a method for communication. Think about it as if ... In the same way you would think about how do we want to communicate ourselves on the internet? There's obviously form factor for the internet. There's a set of standards, and ways you can do that. You can create a website, and you can create an extremely elaborate website, but you can also create a very simple website that you make on Wix on two days.

Tyler Gates:
Virtual reality is not as matured as an industry as the internet obviously right now, but it functions in a very similar way, where you consider virtual reality like a method for communication. I would say the first step is to not think about virtual reality as this one off piece of technology that you're going to use once in an activation. But rather to think about it as this is

the way you're going to deliver the product experience, the customer experience throughout the course of the year.

Tyler Gates:

The value of virtual reality is that it's built ... Predominantly we use Unity 3D to build our virtual environments. We can scale that virtual environment. A client could start off let's say ... I would say an average a small budget for virtual reality is I would say on the very low end around 90K, and generally speaking around 150. So, between 90 and 150K, you're going to spend on a worthwhile interactive VR experience. Now again some may argue you can create it for far less, but it's not going to be interactive, and sort of high production value, which again goes to another piece of this, which is the customer's expectation.

Tyler Gates:

Customers have been seeing virtual reality at events for several years now. The expectation of the customer is that the client is actually spending adequate amount of money in doing virtual reality in a sensible way. But again back to the value of it is that, you can start small, and use that same virtual environment, and we can build on it over a year, to three years at a time.

Tyler Gates:

The Toyota example that I referenced at the beginning. We worked on that project for several years after we built the first version of it. The first version of it was 300K. That $300,000, I mean $75,000 of that was, because we basically built the entire thing in about four weeks over the holidays. There was that part of it. If time is not on your side, in almost any technology you're just going to pay more. They ended up amortizing that $300,000 spend over several years time, because we continuously updated, and made changes. But we never had an addendum budget over $50,000.

Tyler Gates:

Over the next two, or three years we were still working on that same environment, and making updates, and adding in new cool features, and adding people into it, and adding music, and 3D sound. I mean we were really building out a platform for them. That's just the way that people should be thinking about this technology, is as a platform that you're going to build over time, and whatever you start with, you don't have to start all over the next time, which is ... A lot of the model of experiential technology in events right now, which is just sort of like, we're going to build this technology for this one cool show, and then for the next show we're going to think about doing something else.

Tyler Gates:

The value of virtual reality is that it can deliver the wow factor every single time, but you don't have start from scratch every single time. I'd say that the first thing is, is if you're truly considering doing an immersive technology experience, then you should really, truly consider doing what we call interactive VR, instead of doing 360 video. 360 video has great application

for showcasing what actually already exists. But if you're trying to get the customer, or the fan, or whomever the target demo is. You're trying to get them excited about the possibilities, or about the capability of a product, or service.

Tyler Gates:
Then you're going to want to make interactive VR, which is usually photo realistic rendered content that we make interactive. There's some really cool ... Again we'll maybe send you guys the link after this, but Unity 3D just put out a video with BMW where it shows ... I can't remember the exact number, but it's like 120 different images, and it's really, really fast. You cannot tell the difference between ... There's 120 images, half of them are real, and half of them are photo realistic rendered. I challenge anyone out there. It is really hard ... I actually had to look at the list of which ones were in fact in real, and which ones were actually rendered to know correctly. It's very, very difficult.

Tyler Gates:
Gone are the days where the photo realism isn't enough to make the user believe the environment is real. My general encouragement is, it's not too expensive. There are ways to do it very economically, and there's a ways to grow, and scale it over the course of many activations, and even multiple years.

Brandt Kruger:
You brought up a really fascinating point there, that there is a line, what's real and unreal that's starting to get blurrier, and blurrier as we go in a lot of aspects of life. You see the things of this person does not exist, where AI is computer generated, people that don't exist, and things like that. But using that tool as a way of showing something that doesn't exist yet is an interesting line, compared to something that does already exist, and the immersive video. That's a line that sometimes doesn't get talked about a lot when people are talking about "VR."

Brandt Kruger:
A lot of times what they're talking about is that more immersive kind of 360 video, where you're popping on a headset, and going to climb Mount Everest, or something like that. But in actual video I'm guessing that the experience that you had Tyler was a virtual experience.

Tyler Gates:
It was actually rendered. It was actually all rendered. It's a technology ... It's really kind of a methodology called photogrammetry. It's actually a 3D model of something with the texture, the skin of a photo. You're able to basically effect the environment, because you've made a model, a 3D model. It's kind of a combination, like Google Earth, and VR does the same thing. That's how you experience the entire earth in Google which is ... If listeners out there have access to NHDC VIVE, or they want to come and hang out with us, and we would be glad to show them. If you've never tried Google Earth and VR it's ... You literally can go anywhere in the world, and feel like you're there, and you feel like you're standing in front of the pyramids.

Tyler Gates:

Feel like you're standing on the Great Wall, or on the edge of Half Dome in Yosemite. It really is in terms of ... This is why I encourage clients to ... Unless you're in the cinematic space, or you're trying to capture an actual key note in 360 degree video, or you're showcasing the status of a global crisis, or something like that. Unless you're doing those things, you should really be considering interactive, photo realistic rendered content, because it's going to be able to deliver more of an experiential, and truly interactive.

Tyler Gates:

People say that 360 video is interactive, but it's not really true, because if you think about it you can only ... If you film an object, if you film like ... Let's just say you film your coffee cup on top of your desk. You can view that in virtual reality as 360 video content. But you can't actually ... Inside that virtual environment you can't actually reach out, and pick up that coffee cup in VR, and pour it out on the table, because that content was only filmed in that one position. That coffee cup was only in that one position.

Tyler Gates:

We don't have the data for how it would act if it were being picked up. But if we render that coffee cup, then we can give that coffee cup physics properties, and lighting properties, and we can actually allow a person to pick it up inside of virtual reality environment. That's why we generally speaking try to push people towards interactive VR.

Brandt Kruger:

Yeah. I think it further emphasizes that there's just different levels to all of us, that as you start ... There's kind of a starting point where you can do just this amount, and then you can keep building out, and out, and out, and for me kind of even the next level from that is some of the stuff that you're doing on your ... I'm not a big fan of the word of activations, but these experiences where there's not only a VR element to it, but also a physical element. For me that's where I start to see some of the fun of what we do in events, crossing over the digital divide, where ...

Brandt Kruger:

There's one that I always keep coming back to. I think it was an Audi experience a few years ago, where they brought people into the room. They all had interconnected headsets. They went on a kind of a fun, computer generated thrill ride in the car. But then when they took off the headsets they'd taken down the fourth wall, and the actual vehicle was there with smoke, and lights, and all that kind of fun stuff.

Brandt Kruger:

Those combinations of virtual experiences, shared experiences, and the group physical experiences in the room, I think is where all of the real fun starts.

Tyler Gates:

Yeah, yeah I definitely agree. We did a fun project with Cub Cadet. They make a lot of things, but specifically in the kind of commercial, and consumer grade tractors. They came to us with a really interesting business challenge really. For their sponsorships, and for their trade shows, and meetings, and event space. What they realize is that they had a significant percentage of their eligible buyers that were purchasing tractors after doing a test drive.

Tyler Gates:

They realized we should try to setup test rides as much as possible. Well as everyone out there who sets up at these trade shows, and events knows it's next to impossible to have a test drive for commercial grade tractors at every trade show. I mean it is just too costly, and it requires too much space. What they were doing is they were just setting up the tractor. In a lot of cases they'd only have a 10 by 10 footprint. They're just setting up the tractor. How can you give the customer a true product experience with technologies other than virtual reality? How do you show the customer?

Tyler Gates:

Well you show video, and maybe put up some screens. You let them sit on the tractor. Then they have to imagine themselves doing it. We said, "No let's use virtual reality." This another customer. This is another client, that at the time ... A lot of times what we're doing when we're introducing virtual reality is that ... I say this often that we're inventing a capabilities with the technology while inventing the market. Because people are largely unaware of the impacts, and the capability of immersive technology.

Tyler Gates:

When our clients trusted us, and they agreed, we're going to try this out. They had no idea really what we were talking about. But what we did is we put sensors in the steering column, and in the pedals of the actual tractor. Then you sit on the tractor wearing Oculus Rift, and inside the VR environment you're actually also seated a top that exact same tractor. They're actually trying to advertise that this particular tractor uses a steering wheel to do zero turn, which most zero turn tractors use these lever system.

Tyler Gates:

This is a really new, intuitive, and they were the first ones to come out with. We actually just let the customer cut grass in virtual reality using the actual tractor. But we put these yellow lines on the field, and they didn't know. I mean the yellow lines would kind of like u-turn on themselves, and cut sharp corners. They didn't know really what they're cutting until at the end of each person's experience the camera panned out, and you realized that you just cut Brandt into the grass.

Tyler Gates:

You just cut your name, and you didn't realize it while you were on the tractor. But now you share that experience to social media, you cutting your name in the grass. This is just a fun way

to use virtual reality in terms, a very modest budget in order to pull that off to do sensor integration, and build a virtual environment, and create a social media shareable. Ultimately at the end of the day, it directly addressed the brand's challenge, which is we exist to sell tractors, not show up at hundreds of trade shows, and give photo experiences.

Tyler Gates:
We're trying to sell these things, and so we want to give test drive experiences, and we accomplished that using VR.

Brandt Kruger:
Boom, mic drop stuff right there. So guys I think we're going to have to start wrapping it up. I want to give you an opportunity ... We should close out with just kind of what's your best tip for someone who's wanting to again dip their toe into ... Either as an individual into virtual reality, or as someone who's looking to bring this to your events. What's kind of your best tip?

Donnie Nufus:
I'm going to go ahead and say the same thing that I would say for anybody who was thinking about putting live streaming, or LED in their show. First what you have to do is don't start with the technology. Start with what is the pain point? What is it that you're trying to do? What is the challenge, or the problem that you're trying to solve? You know this Brandt. So many people will start with the technology, and that's the last place you start. First you got to start with what is it that you're ... What is that problem you're trying to solve, and work your way backwards.

Donnie Nufus:
Then I also think the other important key here is also understanding what success looks like. Okay I want to sell tractors. All right that's something very attainable. That's something that we can understand, and we can work with. Don't get so caught up on this is virtual reality. Figure out what can I communicate more efficiently, and quickly to have the elicit behavior that I want when they're done with this experience, or with working with this content?

Donnie Nufus:
It's the same thing like when we were doing live streaming, and trying to convince people that this was going to actually help their event. It wasn't going to deter people from coming. It actually was going to attract more people who weren't going to come in the first place. Really figuring out what does success look like here? What is it you're trying to solve? Then partner with somebody like a Bright Line, who understands how then to implement that in an effective, and responsible way with your budget. Not just making cool stuff, but really trying to help you achieve those goals.

Tyler Gates:
Yeah, and I would say too, I mean Donnie pretty thoroughly covered from a strategic perspective. From a practical side I would say ... Donnie mentioned at the end there, that this ...

The reality is that this technology, and these types of technologies they're advancing very, very quickly, and the capabilities inside the technologies are advancing at such a pace that if you're not plugged into it on a regular basis, it is very legitimately challenging to stay on top of what's possible.

Tyler Gates:
What ends up happening is ... What we see often is clients will try to sort of go at their own, and figure out a way that they're going to leverage the technology. Maybe it's under the banner of trying to save on the cost, or whatever the case is. But what ends up happening is they end up producing something that is actually two, or three years old, and they'll spend a lot of money, and then realize at show date when they're on site, that what they ended up putting together could've been done ... Probably it could've been done faster, cheaper, and it could be better.

Tyler Gates:
The reason why that they're in that conundrum is because the technology just moved so fast, and there used to a ... Used to be just a couple of years ago where we were seeing major advancements in the immersive technology space. Every 12 to 18 months or so. Now we're at about a three month clip. It's winding up even faster.

Tyler Gates:
My general recommendation would be, and call this shameless plug if you'd like, but it really is reach out to the people who are actually doing this on a regular basis. We mentioned this earlier, but I'm the president of the VR, AR Association which is Washington DC, but it's a global association with 60 chapters all around the world. There are people in your local communities that do have this sort of awareness, and knowledge about this technology, and about technologies in this ecosystem.

Tyler Gates:
Obviously my company is ... We would love to be considered a resource for listeners, just even help educate if you have questions about how to implement. My favorite thing to do when I speak, or do webinars, or whatever the case is. I love the questions, because I really do enjoy helping people realize what they already know, but they just don't know how to see it, because virtual reality just delivers a new way to understand the world around us.

Tyler Gates:
Once we explain it in a very simplified way, then a lot of times what happens is our customers are coming up with creative ideas of their own that we would've never thought of, because they have their own context. My encouragement would be, reach out to those that are working inside this technology on a regular basis, and let them help sort of level you up.

Brandt Kruger:

Nice. Well Tyler where can people find out more if they do want to ask you those questions?

Tyler Gates:
Well honestly I am very approachable I would say. Brightlineinteractive.com like we said earlier is our website. We also have a Vimeo page with a bunch of videos. 40 or 50 videos of previous experiences, and things like that that we've done. A lot of the examples that we've talked about here, we actually have video content for, and that's just ... It's linked on the website, but that's vimeo.com/brightline. Then people can send me, or Donnie an email whenever you want. My email is tyler@brightlineinteractive.com, and it's the same for Donnie.

Tyler Gates:
We would love to just set up a call, and talking through the process.

Brandt Kruger:
Nice, well thank you so much for joining us, and Donnie, my old friend we've been doing this thing a while. Congrats on the new digs. It sounds like it's pretty exciting over there. Is there any other places where people can follow you, and find out more about what you're up to?

Donnie Nufus:
Yeah, I used to be Donnie Sonic on Twitter, and then I was DonniePRG, and I said enough of this. This is a fact. I am the only Donnie Nufus in the world. I am Donnie Nufus on Twitter. I don't have to put a real in there, but you can follow me on Twitter. I friend everybody on Facebook. Again I'm the only Donnie Nufus. If you search my name on the internet I have a big digital footprint.

Brandt Kruger:
It's convenient isn't it to have a unique name.

Donnie Nufus:
It really is. It is. I can't hide.

Brandt Kruger:
All right, well thanks again for joining us as well. We really appreciate it. Fantastic discussion. I am so jazzed about this technology, really enjoying it. Will, buddy thanks for being here as always.

Will Curran:
I'm just here listening the entire time, and I was just fascinated at everything that's happening. I mean it's just so exciting. As a techie, it was just really an honor to have you guys on the show.

Donnie Nufus:
Well thank you so much. It's a pleasure to be there, and look forward to coming back to you guys with some more things that Tyler, and I...

Brandt Kruger:
Absolutely, this is going to have to be a reoccurring episode I think where we check in with you guys periodically, and find out what other cool stuff you're doing.

Will Curran:
Every three months, every three months.

Brandt Kruger:
Nice I dig it.

Donnie Nufus:
That's right.

Brandt Kruger:
All right, well thank you, and thank you all for listening. We want to thank you for joining us. Remember the best place to join us there is eventtechpodcast.com. There you can sign up. You can get on the mailing list to make sure you get all of the cool stuff, all of the show notes, all of the resources that gets shared, the transcripts that get done, all of that fun stuff is available courtesy of Endless Events at eventtechpodcast.com.

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