

# Key Principles to a Successful Virtual Production Studio Implementation

6 INSIDER INSIGHTS ON HOW TO CREATE A  
WORLD-CLASS ENVIRONMENT

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# Inside the World of Virtual Production



**Discover the exciting new technology transforming media today.**

From George Méliès' imaginative practical effects, which took viewers on flights of fancy, to the Technicolor dye-transfer process, which introduced vivid hues to *The Wizard of Oz* and countless other films and television shows, the entertainment industry is no stranger to innovation.

That's as true now as it was 100 years ago, with auteurs and engineers working closely together, leveraging the latest audio and visual technology to transport audiences to the bottom of the deep blue sea, cities of the future and even galaxies far, far away. One of the most exciting technologies transforming modern filmmaking and TV production is virtual production.

Virtual production combines LED surfaces, live footage and computer graphics generated by state-of-the-art 3D engines to create stunningly hyper-realistic, immersive and even interactive environments. Virtual production also encompasses a blend of reality-bending technologies, including:

# VR

**Virtual reality (VR)**, which refers to computer-generated virtual environments and digital elements that appear in the backplane or background of a scene

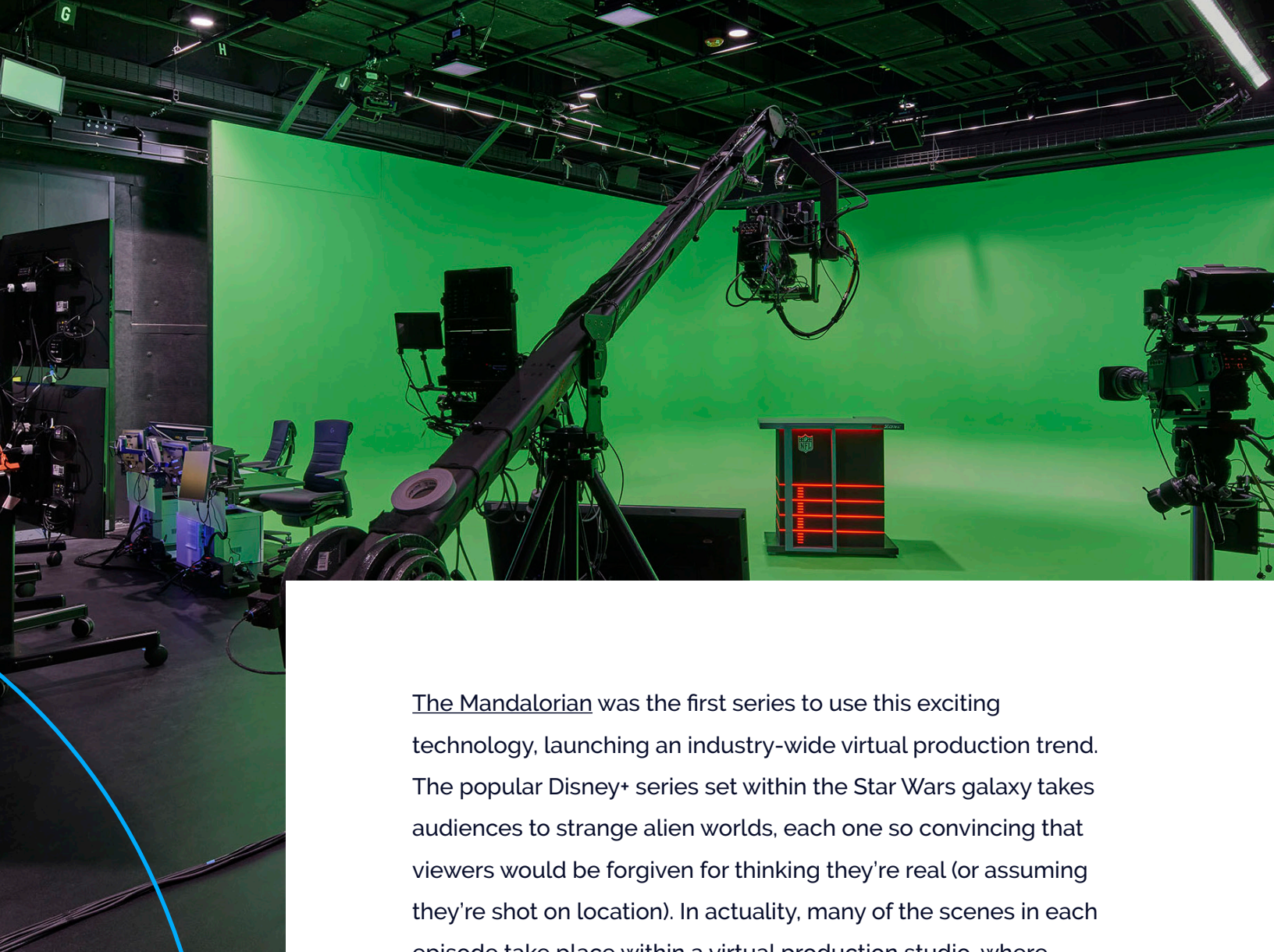
# AR

**Augmented reality (AR)**, which overlays digital elements both in the foreground and background of real-world environments in order to enhance the viewer's experience

# XR

**Extended reality (XR)** — sometimes called mixed reality (MR) — which combines live environments with computer-generated graphics and enables physical and digital elements to not only coexist, but interact.





The Mandalorian was the first series to use this exciting technology, launching an industry-wide virtual production trend. The popular Disney+ series set within the Star Wars galaxy takes audiences to strange alien worlds, each one so convincing that viewers would be forgiven for thinking they're real (or assuming they're shot on location). In actuality, many of the scenes in each episode take place within a virtual production studio, where actors are surrounded by LED walls displaying real-time images, thereby enhancing their experience.

In this respect, virtual production studios go a step beyond traditional studios, which utilize physical sets that are both expensive and time-consuming to construct and rely on green screens and CGI for digital effects. Virtual production studios are truly on the leading edge of technology, tapping into advanced 3D computer graphics engines to render remarkably lifelike environments on a moment's notice and display them on either floor-to-ceiling LED screens or on smaller LED screens with virtual set extensions utilized to extend the bounds of reality in smaller physical spaces.

# Unlimited Possibilities



## Virtual production applications extend far beyond film and television studios.

Virtual production is not only appealing from an aesthetic perspective — it has incredible practical value, as well. Production companies can build entire libraries of digital assets to draw from, enabling filmmakers and show runners to render the exact environment they need at the touch of a button with complete control over weather and lighting.



With hundreds — perhaps even thousands — of environments at their disposal, crews can easily transition from one scene to the next without changing their physical location; recording schedules are no longer dictated by environmental conditions; and set designers spend less time building and tearing down physical sets. Though they can be expensive to implement, virtual production studios also present cost-saving opportunities, saving studios the time and expense associated with recording on location and increasing opportunity for global collaboration and remote work.

Perhaps the most exciting detail about virtual production, though, is that its applications are not strictly limited to film and television. Virtual production has already become popular amongst broadcast networks, with industry leaders such as Sky Sports creating lifelike virtual representations of golfers in order to analyze their practice swings and Discovery Sports conducting “in-person” interviews with athletes located hundreds of miles away.



Virtual production is gaining traction in other areas, as well. From hosting corporate meetings that replicate the in-person experience and make virtual attendees feel more connected to creating educational content and conducting training sessions that more easily capture learners' attention with dynamic and engaging environments, the applications for virtual production are limited solely by one's imagination. Given these broad applications and seemingly endless possibilities, it's little wonder that virtual production is widely perceived as the future of content creation, and that the virtual production market is projected to reach a value of over \$4.7 billion by 2028.

See Even More Real-World Examples of  
Virtual Production Studio Applications

[\*\*Talk to the Experts at Diversified\*\*](#)

This eBook is intended to help enterprises, production studios, higher education institutions and others looking to capitalize on virtual production to understand the nuances of designing and building their own studio. As part of this education, we'll provide insight into the various stages of the implementation process, as well as insider advice on how to ensure success every step of the way.

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# 1

THE PRINCIPLE

## Let Go of Preconceived Notions

## **Start your project off on the right foot by forgetting everything you thought you knew about virtual production.**

So, you want to build your very own virtual production studio. The best place to begin is by meeting with implementation partners and having discovery conversations that prioritize content over technology.

Let's talk a little bit about what that means.

As a full-service media technology solutions provider, we've had our fair share of clients come through our doors with very specific ideas about what technology they want to implement based on something they've read or seen at a tradeshow. While we admire their initiative, we've found that this results in clients not fully understanding how the technology works, what it will take to implement it or whether it even meets their needs.

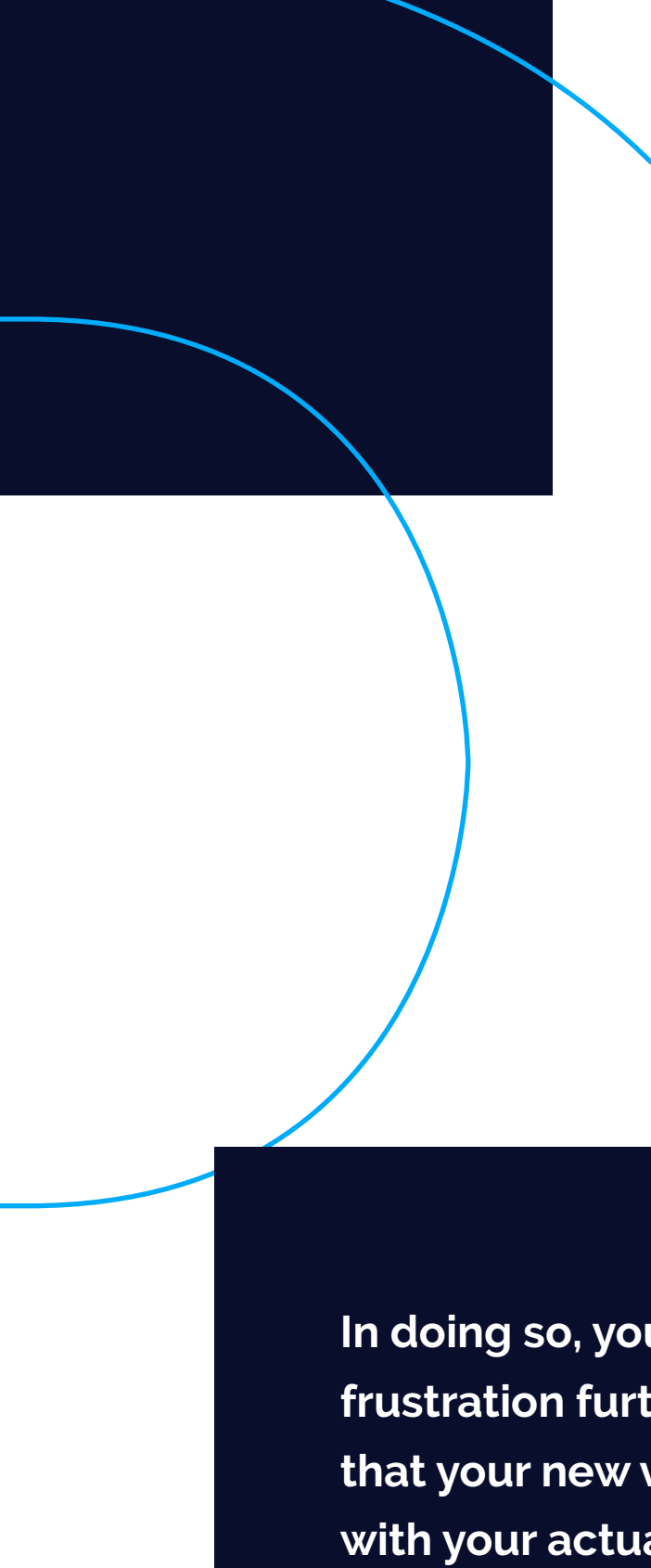




Nowhere is that more true than with virtual production. Although the idea of building a virtual production studio is certainly exciting, there's a great deal of consideration that goes into it and complexity to manage. It's also worth noting that one person's definition of what a virtual production studio is — and what technologies it involves — may look very different from another's.

Rather than jump in midway through the process and risk unnecessary project delays, it's better to explain your organization's needs to your implementation partner at the beginning and go from there. Realistically, the needs of a broadcast network will look very different from those of a corporate enterprise or even a film production company; so will the various technologies and components that go into your virtual production studio and the finished product.

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In order to get to that point, it's important to have exploratory conversations — ideally with a partner that has substantial expertise and on-the-job experience — and set expectations so that all parties are on the same page. From there, your partner can help you develop an in-depth understanding of the implementation process and the implications of such a project and present you with different options based on your established needs (more on that momentarily). Your partner can also explain the various backend tools and components needed to develop virtual background and on-screen elements, as well as the creative workflows that need to be staffed.

In doing so, you can save yourself stress and frustration further down the road and ensure that your new virtual production studio aligns with your actual needs and expectations.

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# 2

THE PRINCIPLE

**Flexibility Is  
Your Friend**

## **Find a partner that won't lock you into one product or vendor, and that can help you see the full picture.**

Once you've established what, exactly, it is you need, the next step in any virtual production studio project is to work with your implementation partner to draft a proposal you can present to key stakeholders. Generally speaking, this proposal — which should be detailed, but still accessible to the broadest possible audience — should include:

- A budget
- A scope of work
- A list of required resources
- Technical specifications
- Technical acceptance criteria
- A project timeframe
- A list of client expectations
- A design plan

No two proposals will look alike. Each one will vary based not only on the size of your organization, your stated needs, and the parameters of the project, but also on your experience level.




Based on Diversified's experience, most virtual production studio customers fall into one of two categories: those who are technically savvy and know exactly what they want, and those who have a vision but aren't sure how to achieve it.

Customers in the former category typically have a stronger technological foundation — both literal and figurative — to build upon, and therefore require a fairly straightforward and simple proposal process. Customers in the latter category, however, generally benefit from additional consultative support. To help support these clients, we build an additional step into the proposal process, during which we work closely with the client to:

- Document their business needs and goals
- Define their operational requirements — that is, what it is they wish to accomplish and how best to accomplish it
- Define their technical requirements — in other words, the technology they need to achieve their business needs, goals and operational requirements

By incorporating this extra step, we're able to develop a more comprehensive project proposal. The technical requirements component is especially important, as we take this list of requirements directly to our network of vendors and use it to determine which equipment and systems we need to complete the project.






This is why flexibility is key: Certain implementation partners are licensed resellers and are, therefore, locked in to working with certain products and vendors, regardless whether those products or vendors actually meet your specific requirements. This can lead to a host of issues, not least of which include your new virtual production studio falling far short of expectations — a worst-case scenario given the sizable financial investment such a project requires.

As an independent solutions provider, Diversified is not beholden to any one product or vendor. In fact, we typically work with dozens of vendors to source components such as cameras, camera tracking systems, lighting, object tracking systems and more for virtual production studio projects. We also take a holistic approach to every project, focusing not only on technology, but all other necessary resources and areas of consideration in order to ensure that your virtual production studio is fully functional.

Regardless which implementation provider you choose to partner with, be sure to look for a company that offers the flexibility to work with multiple products and vendors and will help you see the bigger picture, which includes key elements on both the front and back end.



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# 3

THE PRINCIPLE

**Expect the  
Unexpected**



## **Do procurement the right way by planning for the worst and hoping for the best.**

Your implementation partner has created a project proposal and design plan, and all of your stakeholders have given their approval to proceed — now it's time for procurement.

Having identified the necessary products from the appropriate vendors, your partner will now begin to acquire and assemble the various components that will comprise your new virtual production studio. This is a logistically intensive process, one that involves design, sourcing, purchase requisition, contract administration, warehousing, fulfillment and more. In some cases, procurement can involve as many as 40 to 50 different vendors and hundreds of parts, components and products, all of which can be incredibly difficult to coordinate.

And that's assuming everything arrives on time. There's always the risk of shipment delays, which could set your project back by weeks or longer. Human errors — such as an item being shipped to the wrong location — can and do happen, further complicating things. Based on these factors, it's in your best interest to have contingency plans in place and to build enough time into your project timeline to account for shipment delays and rerouting.



Although it is possible to manage procurement — and procurement contingency planning — in-house, many organizations lack the resources to do so in a high-quality way, as virtual production studios are incredibly dynamic, complex environments. That's why it's important to seek out a partner that not only offers procurement services, but also has a proven track record of successfully managing vendor relationships and lead times. Close vendor relationships can spell the difference between success and failure for projects of this nature, which are highly sophisticated and require the ultimate in client, solution provider and vendor coordination and cooperation.

A partner with this level of demonstrated experience can help you secure a competitive price for virtual production studio components and ensure that those components arrive in the right place at the right time, are properly labeled and organized, and are set up in the correct order.

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# 4

THE PRINCIPLE

## Settle for Nothing Less Than Full Service



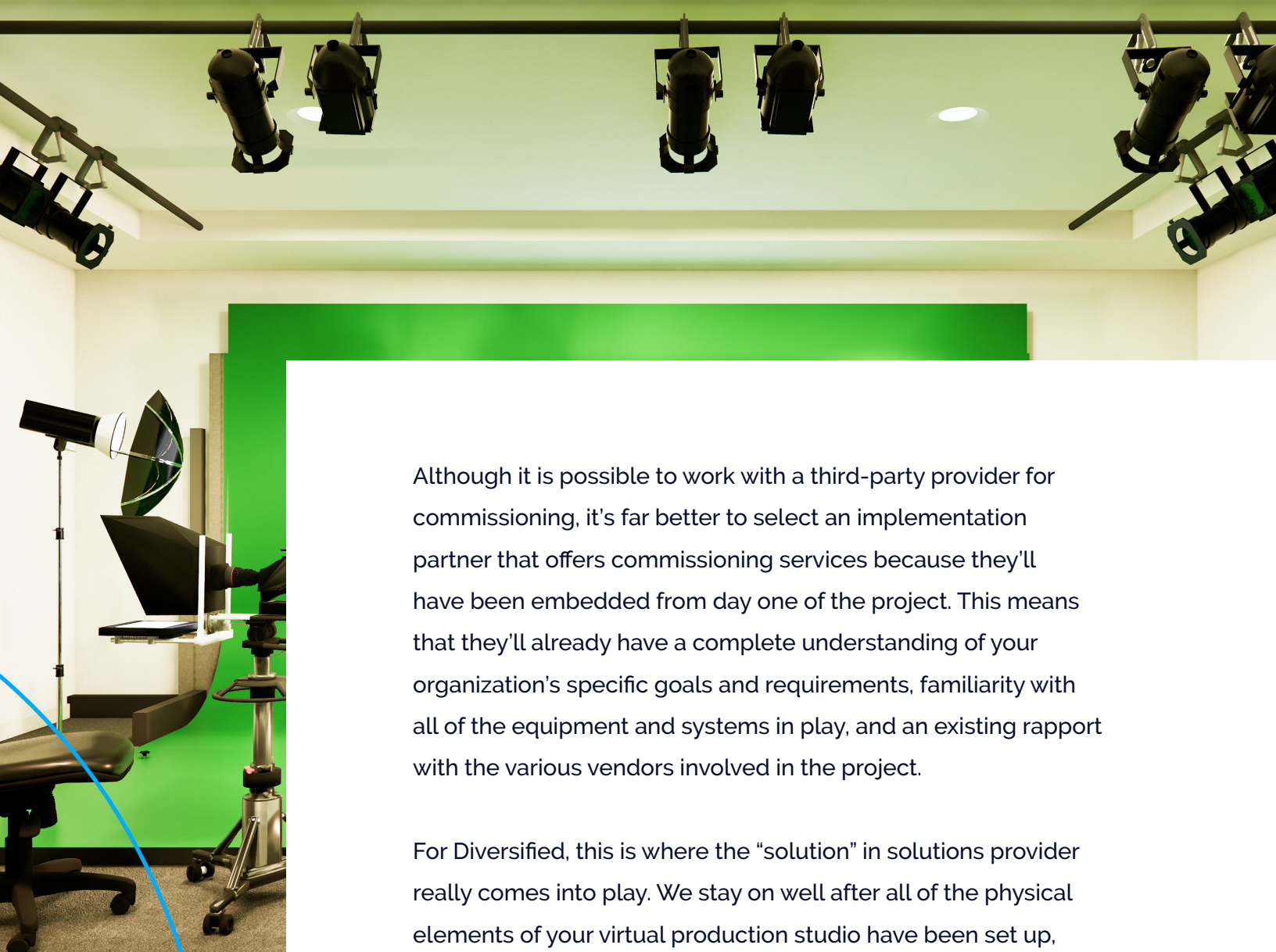
## Seek out a partner who will see you through the entire installation process.

With all of your components in one place, it's time to start constructing your virtual production studio. As with prior stages of this process, your partner should oversee every aspect of physical installation, including hiring a construction crew to build your studio infrastructure and technicians to set up equipment.

For many implementation partners, their job ends once your physical equipment is up and running. While this might seem fine when taken at face value, it neglects an essential component of the installation process: commissioning.

Commissioning encompasses all of the activities that should take place after equipment is installed and turned on. These activities include:

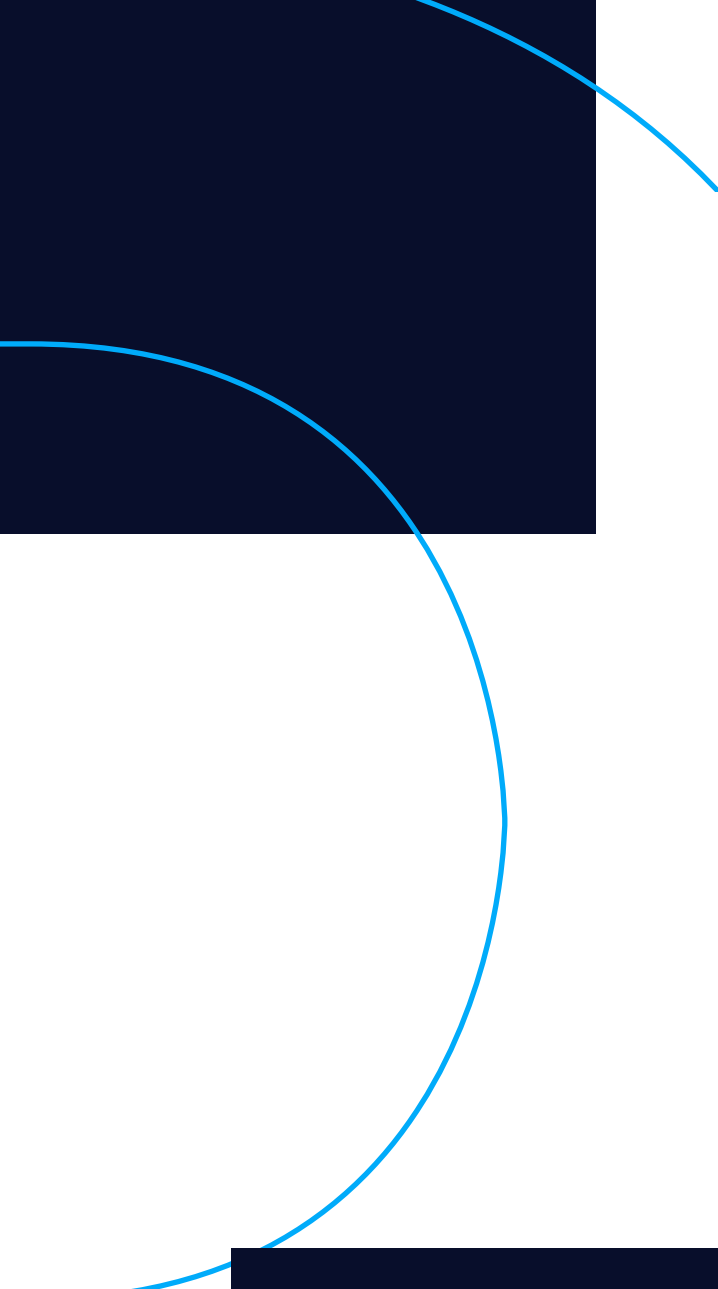
- Delivering engineering support to ensure that various software systems are switched on and communicating as intended
- Conducting acceptance testing and functional testing
- Troubleshooting issues as needed



Although it is possible to work with a third-party provider for commissioning, it's far better to select an implementation partner that offers commissioning services because they'll have been embedded from day one of the project. This means that they'll already have a complete understanding of your organization's specific goals and requirements, familiarity with all of the equipment and systems in play, and an existing rapport with the various vendors involved in the project.

For Diversified, this is where the "solution" in solutions provider really comes into play. We stay on well after all of the physical elements of your virtual production studio have been set up, working closely with different vendors to ensure that all of the parts and pieces on both the front and back end are tightly integrated and fully operational. We don't consider a project complete unless we're 100% confident that the client has a fully working, usable system.

In most cases, we've even installed multiple iterations of these systems and worked with these very same vendors on past projects across clients of varying sizes. These experiences have enabled us to develop strong vendor relationships and acquire practical knowledge about the strengths and weaknesses of each component and which work best together in order to deliver a best-in-breed system.



Once all of the necessary parts and pieces are in place on the front end, there's also the back end to consider. After all, the entire purpose of a virtual production studio is to generate hyper-realistic digital environments using high-powered, computational software programs, so you'll need the support of a creative services team capable of using the software and designing such environments. When evaluating prospective implementation partners, look for one that has an in-depth understanding of these specialized systems and that can connect you with a qualified creative services team through its supplier network.

To summarize: When evaluating potential implementation partners, try to find one that will see you through the *entire* installation process — commissioning and creative services included — and that has proven expertise in providing integration services.

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A woman in a denim jacket and headset is holding a tablet. In the background, a man is visible on a monitor. The scene is set against a green screen.

# 5

THE PRINCIPLE

## **Make Time for Training**

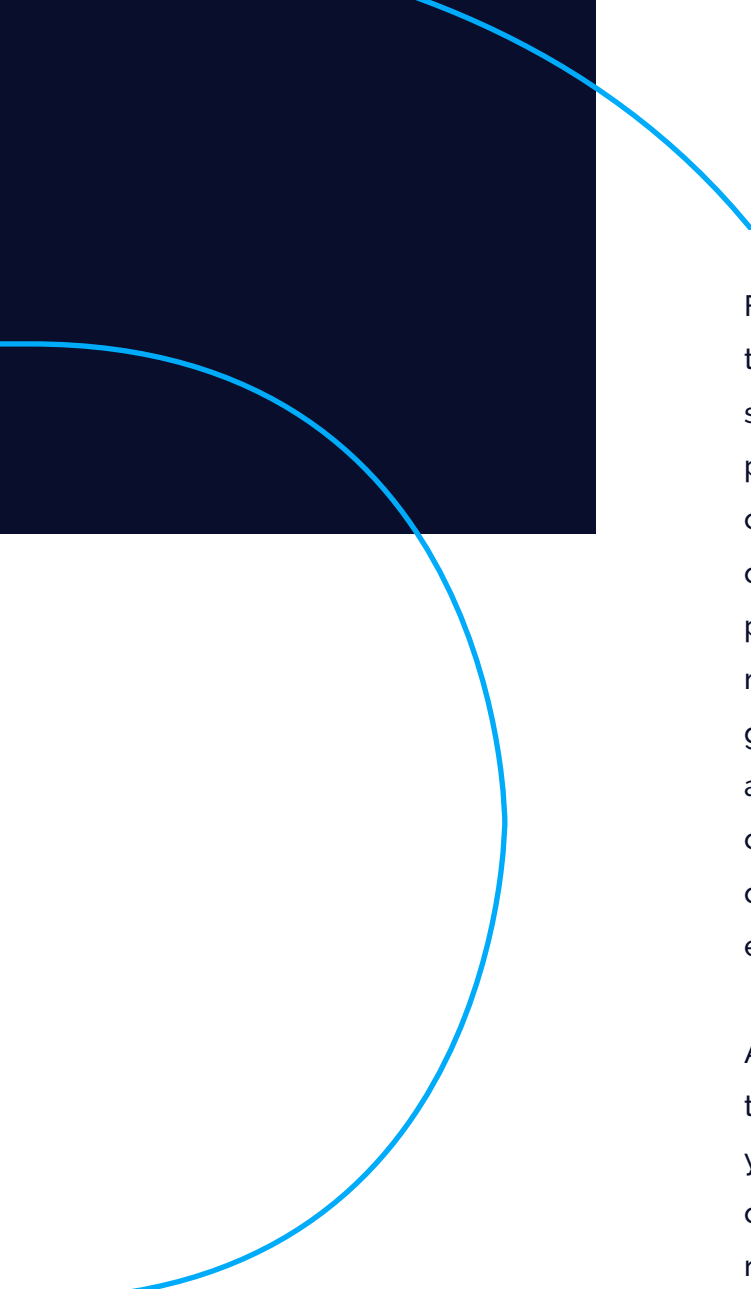
## **Don't underestimate the power of well-trained personnel.**

A virtual production studio is only as good as the people behind it. In other words, it isn't enough to just have a fully functional studio — in order to see a return on your investment, your personnel need to know how to operate it, as well.

Given the complexity of the technologies involved in virtual production, training is an absolute necessity, and most vendors will provide courses and curriculum specific to their products to help bring operators up to speed.

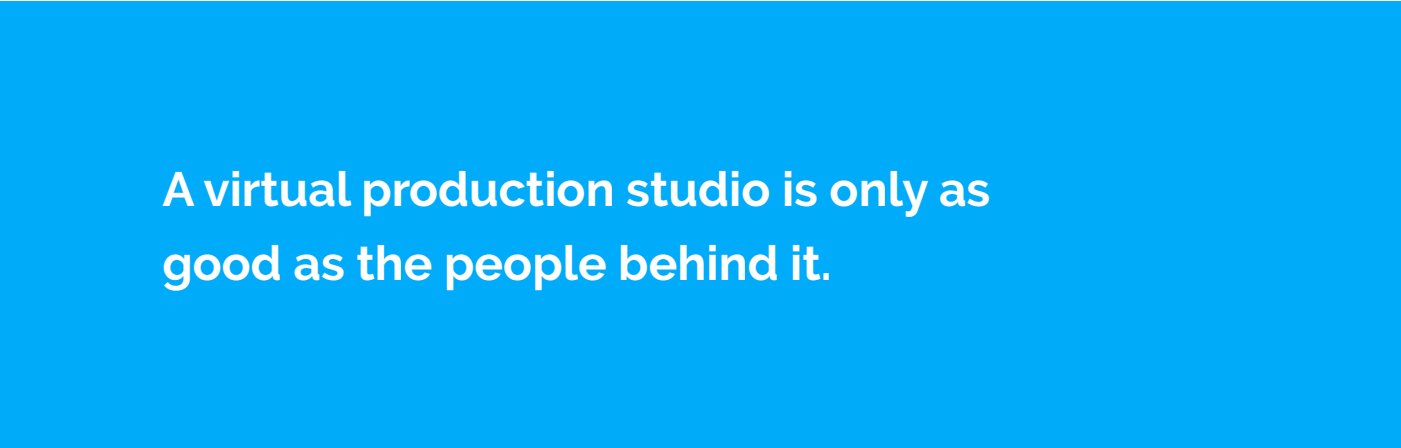
Although these training materials provide a solid foundation for mastering the individual elements within a virtual production environment, they don't provide a complete picture of day-to-day operations. In order to access that knowledge, you'll require additional training support — ideally from your implementation partner.





For example, at Diversified, we offer additional training to help our clients understand how the different systems and products that make up their virtual production studio work in harmony with each other to create impressive digital environments. We also tailor our training to the needs of each individual client, proactively look for gaps in vendors' educational materials and develop custom content to fill those gaps. Ultimately, our success isn't dependent upon our ability to deliver a virtual production studio, but rather on our clients' ability to use it to achieve the goals and objectives they established at the beginning of our engagement.

As a final note, although it can be tempting to speed through training to get to the finish line, it's vital that your end users have a comprehensive understanding of the advanced systems and software behind your new virtual production studio. Training matters, so be sure to budget enough time for it from the beginning.



**A virtual production studio is only as good as the people behind it.**

# 6

THE PRINCIPLE

## Plan for the Future




## **Invest in a comprehensive managed services package to ensure your systems run smoothly.**

By this point, your virtual production environment should be fully operational and your team confident in their ability to create compelling, digitally enhanced content with relative ease. In order to ensure things remain that way, you'll want to invest in full-coverage technical operational support.

As advanced as virtual production technology is, it's still subject to the same issues as any other technical equipment or software system, which means there's always a risk of something malfunctioning or unexpected downtime. Rather than wait for that to happen and suffer the consequences, it's better to proactively seek out support from a trusted provider — such as your implementation partner — and identify low-level problems before they have the opportunity to become major issues.





But a support contract that covers basic maintenance and repairs isn't enough. As technology evolves and your company grows, you'll also require regular system upgrades, extensions and additional training to ensure that your virtual production environment continues to deliver.

We've [built an entire division](#) dedicated solely to providing this level of comprehensive service and support. Our Global Services team offers 24/7 support — including a dedicated tech specialist; remote monitoring and management; technology as a service; and traditional break-fix warranty, service and support — to help our clients ensure that every aspect of their virtual production environment remains online and operational at all times. In addition to technical support, we help manage system upgrades and provide ongoing training to help ensure that your personnel are up-to-speed on the latest virtual production innovations.

Last, but certainly not least, our clients have the option to outsource vendor support agreement management — including payment details, renewal periods and other contract terms — to our in-house client management group.

## CONCLUSION

# The Future of Production is Here

## Take the first step toward building your own virtual production studio with Diversified.

Virtual production is already transforming the way we tell stories, from the big screen to the boardroom. Given its creative and cost-saving potential, there really is no time like the present to look into building your very own virtual production studio — and Diversified is here to help you get started.

A world-class media technology solutions provider with nearly 30 years of experience, Diversified helps clients around the globe and across a wide range of industries capitalize on emerging technology trends, including virtual production. Contact us today to learn more about how Diversified can help you make your virtual production vision a reality.

[Start the Conversation](#)